

## Deckblatt zum Sicherheitsdatenblatt

Erstellt am 02.03.2026 Version 01.00

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### Produktidentifikation:

Handelsname Blood DNA particle solution  
Verwendungszweck Ausschliesslich und nur für den Laborgebrauch zu verwenden. Nur für Forschungszwecke geeignet, Diagnostikzwecke sind von der Verwendung ausgeschlossen.

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### Lieferant, der das Sicherheitsdatenblatt übermittelt:

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**Nationale Notfallnummer: 145** (24h erreichbar, Tox Info Suisse, Zürich; für Anrufe aus der Schweiz, Auskünfte auf Deutsch, Französisch und Italienisch)

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### Informationen für die Verwender betreffend:

#### Abschnitt 7 – Handhabung und Lagerung

Allfällig relevante schweizerische Anforderungen des Arbeitnehmerschutzes und des Umweltschutzes betreffend die Handhabung und Lagerung sind zu berücksichtigen.

#### Abschnitt 8 – Begrenzung und Überwachung der Exposition / Persönliche Schutzausrüstung

Die im Sicherheitsdatenblatt angegebenen Grenzwerte basieren auf den einschlägigen EG-/EU-Vorschriften. Für den Arbeitnehmerschutz in der Schweiz sind zusätzlich die Vorgaben der SUVA zu berücksichtigen. Gegebenenfalls ist die persönliche Schutzausrüstung zu spezifizieren.

#### Abschnitt 13 – Hinweise zur Entsorgung

Hinweise zur Entsorgung sind gemäß der Technischen Verordnung über Abfälle (TVA), der Verordnung über den Verkehr mit Abfällen (VeVA) sowie der Verordnung des UVEK über Listen zum Verkehr mit Abfällen (LVA) zu berücksichtigen.

#### Abschnitt 15 – Rechtsvorschriften

Allfällig relevante schweizerische Vorschriften, z. B. betreffend Luftreinhalte-Verordnung, Störfallverordnung (Mengenschwellen), Abgabevorschriften, Verwendungsbeschränkungen oder -verbote sowie allfällige Zulassungen (z. B. Biozidprodukte), sind zu berücksichtigen.



Version No: 1

Issue date: 27/AUG/2025  
Safety Data Sheet (Conforms to Annex II of REACH (1907/2006) - Regulation 2020/878)

Revised: N/A

**SECTION 1. Identification of the substance / mixture and of the company / undertaking****1.1. Product Identifier**

Product name	Blood DNA particle solution
Synonyms	Not Available
Other means of identification	Not Available

**1.2. Relevant identified uses of the substance or mixture and uses advised against**

Relevant identified uses	Laboratory use.
Uses advised against	Not Applicable

**1.3. Details of the manufacturer or supplier of the safety data sheet**

Registered company name	CleanNA
Address	Coenecoop 75, 2741 PH, Waddinxveen, The Netherlands
Telephone	+31 (0) 182 22 33 50
Fax	+31 (0) 182 22 33 98
Website	<a href="http://www.cleanna.com">www.cleanna.com</a>
Email	<a href="mailto:info@cleanna.com">info@cleanna.com</a>

**1.4. Emergency telephone number**

Emergency telephone numbers	112 (European emergency number)
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**SECTION 2. Hazards identification****2.1. Classification of the substance or mixture**

Classification according to regulation (EC) No 1272/2008 [CLP] and amendments [1]	Not Applicable
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**2.2. Label elements**

Hazard pictogram(s)	Not Applicable
Signal word	Not Applicable

**Hazard statement(s)**

Not Applicable

**Supplementary statement(s)**

Not Applicable

**Precautionary statement(s) Prevention**

Not Applicable

**Precautionary statement(s) Response**

Not Applicable

**Precautionary statement(s) Storage**

Not Applicable

**Precautionary statement(s) Disposal**

Not Applicable

**2.3. Other hazards**

REACH - Art.57-59: The mixture does not contain Substances of Very High Concern (SVHC) at the SDS print date.

**SECTION 3. Composition / information on ingredients****3.1 Substances**

See 'Composition on ingredients' in Section 3.2

**3.2 Mixtures**

1. CAS No 2. EC No 3. Index No 4. REACH No	%[weight]	Name	Classification according to regulation (EC) No 1272/2008 [CLP] and amendments	SCL / M-Factor	Nanoform Particle Characteristics
1.26628-22-8 2.247-852-1 3.011-004-00-7 4. Not Available	0.05	<u>sodium azide</u> *	Acute Toxicity (Oral) Category 2, Hazardous to the Aquatic Environment Acute Hazard Category 1, Hazardous to the Aquatic Environment Long-Term Hazard Category 1; H300, H400, H410 [2]	Not Available	Not Available
<b>Legend:</b>		2. Classification drawn from Regulation (EU) No 1272/2008 - Annex VI; 3. Classification drawn from C&L; * EU IOELVs available; [e] Substance identified as having endocrine disrupting properties			

**SECTION 4. First aid measures****4.1. Description of first aid measures**

<b>Eye Contact</b>	<p>If this product comes in contact with the eyes:</p> <ul style="list-style-type: none"> <li>- Wash out immediately with fresh running water.</li> <li>- Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids.</li> <li>- Seek medical attention without delay; if pain persists or recurs seek medical attention.</li> <li>- Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.</li> </ul>
<b>Skin Contact</b>	<p>If skin or hair contact occurs:</p> <ul style="list-style-type: none"> <li>- Flush skin and hair with running water (and soap if available).</li> <li>- Seek medical attention in event of irritation.</li> </ul>
<b>Inhalation</b>	<ul style="list-style-type: none"> <li>- If fumes, aerosols or combustion products are inhaled remove from contaminated area.</li> <li>- Other measures are usually unnecessary.</li> </ul>
<b>Ingestion</b>	<ul style="list-style-type: none"> <li>- IF SWALLOWED, REFER FOR MEDICAL ATTENTION, WHERE POSSIBLE, WITHOUT DELAY.</li> <li>- For advice, contact a Poisons Information Centre or a doctor.</li> <li>- Urgent hospital treatment is likely to be needed.</li> <li>- In the meantime, qualified first-aid personnel should treat the patient following observation and employing supportive measures as indicated by the patient's condition.</li> <li>- If the services of a medical officer or medical doctor are readily available, the patient should be placed in his/her care and a copy of the SDS should be provided. Further action will be the responsibility of the medical specialist.</li> <li>- If medical attention is not available on the worksite or surroundings send the patient to a hospital together with a copy of the SDS.</li> </ul> <p><b>Where medical attention is not immediately available or where the patient is more than 15 minutes from a hospital or unless instructed otherwise:</b></p> <ul style="list-style-type: none"> <li>- <b>INDUCE</b> vomiting with fingers down the back of the throat, <b>ONLY IF CONSCIOUS</b>. Lean patient forward or place on left side (head-down position, if possible) to maintain open airway and prevent aspiration.</li> </ul> <p><b>NOTE:</b> Wear a protective glove when inducing vomiting by mechanical means.</p>

**4.2 Most important symptoms and effects, both acute and delayed** See

Section 11

**4.3. Indication of any immediate medical attention and special treatment needed**

As in all cases of suspected poisoning, follow the ABCDEs of emergency medicine (airway, breathing, circulation, disability, exposure), then the ABCDEs of toxicology (antidotes, basics, change absorption, change distribution, change elimination). For poisons (where specific treatment regime is absent):

**BASIC TREATMENT**

- Establish a patent airway with suction where necessary.
- Watch for signs of respiratory insufficiency and assist ventilation as necessary.
- Administer oxygen by non-rebreather mask at 10 to 15 L/min.
- Monitor and treat, where necessary, for pulmonary oedema.
- Monitor and treat, where necessary, for shock.
- Anticipate seizures.

Do **NOT** use emetics. Where ingestion is suspected rinse mouth and give up to 200 ml water (5 ml/kg recommended) for dilution where patient is able to swallow, has a strong gag reflex and does not drool.

**ADVANCED TREATMENT**

- Consider orotracheal or nasotracheal intubation for airway control in unconscious patient or where respiratory arrest has occurred.
  - Positive-pressure ventilation using a bag-valve mask might be of use.
  - Monitor and treat, where necessary, for arrhythmias.
  - Start an IV D5W TKO. If signs of hypovolaemia are present use lactated Ringers solution. Fluid overload might create complications.
  - Drug therapy should be considered for pulmonary oedema.
  - Hypotension with signs of hypovolaemia requires the cautious administration of fluids. Fluid overload might create complications. Treat seizures with diazepam.
  - Proparacaine hydrochloride should be used to assist eye irrigation.
- BRONSTEIN, A.C. and CURRANCE, P.L. EMERGENCY CARE FOR HAZARDOUS MATERIALS EXPOSURE: 2nd Ed. 1994*

**SECTION 5. Firefighting measures****5.1 Extinguisher media**

- There is no restriction on the type of extinguisher which may be used
- Use extinguisher media suitable for the surrounding area

**5.2 Special hazards arising from substrate or mixture**

<b>Fire Incompatibility</b>	None known.
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**5.3. Advice for firefighters**

<b>Fire Fighting</b>	<ul style="list-style-type: none"> <li>- Alert Fire Brigade and tell them location and nature of hazard.</li> <li>- Wear breathing apparatus plus protective gloves in the event of a fire.</li> <li>- Prevent, by any means available, spillage from entering drains or water courses. ▶ Use firefighting procedures suitable for surrounding area.</li> <li>- Do <b>NOT</b> approach containers suspected to be hot.</li> <li>- Cool fire exposed containers with water spray from a protected location. ▶ If safe to do so, remove containers from path of fire.</li> <li>- Equipment should be thoroughly decontaminated after use.</li> </ul>
<b>Fire/Explosion Hazard</b>	<ul style="list-style-type: none"> <li>- Non- combustible.</li> <li>- Not considered a significant fire risk, however containers may burn.</li> </ul> <p>May emit poisonous fumes.</p>

**SECTION 6. Accidental release measures****6.1 Personal precautions, protective equipment and emergency procedures**

See section 8

**6.2 Environmental precautions**

See section 12

**6.3 Methods and material for containment and cleaning up**

<b>Minor Spills</b>	<ul style="list-style-type: none"> <li>- Clean up all spills immediately.</li> <li>- Avoid breathing vapors and contact with skin and eyes.</li> <li>- Control personal contact with the substance, by using protective equipment.</li> <li>- Contain and absorb spill with sand, earth, inert material or vermiculite.</li> <li>- Wipe up.</li> <li>- Place in a suitable, labelled container for waste disposal.</li> </ul>
<b>Major Spills</b>	<p>Moderate hazard.</p> <ul style="list-style-type: none"> <li>- Clear area of personnel and move upwind.</li> <li>- Alert Fire Brigade and tell them location and nature of hazard. ▶ Wear breathing apparatus plus protective gloves.</li> <li>- Prevent, by any means available, spillage from entering drains or water course. ▶ Stop leak if safe to do so.</li> <li>- Contain spill with sand, earth or vermiculite.</li> <li>- Collect recoverable product into labelled containers for recycling.</li> <li>- Neutralize/decontaminate residue (see Section 13 for specific agent).</li> <li>- Collect solid residues and seal in labelled drums for disposal.</li> <li>- Wash area and prevent runoff into drains.</li> <li>- After cleanup operations, decontaminate and launder all protective clothing and equipment before storing and re-use.</li> <li>- If contamination of drains or waterways occurs, advise emergency services.</li> </ul>

**6.4. Reference to other sections**

Personal Protective Equipment advice is contained in Section 8 of the SDS.

**SECTION 7. Handling and storage****7.1. Precautions for safe handling**

<b>Safe handling</b>	<ul style="list-style-type: none"> <li>- Avoid all personal contact, including inhalation.</li> <li>- Wear protective clothing when risk of exposure occurs.</li> <li>- Use in a well-ventilated area.</li> <li>- Prevent concentration in hollows and sumps.</li> <li>- Do <b>NOT</b> enter confined spaces until atmosphere has been checked.</li> <li>- Do <b>NOT</b> allow material to contact humans, exposed food or food utensils.</li> <li>- Avoid contact with incompatible materials.</li> <li>- When handling, do <b>NOT</b> eat, drink or smoke.</li> <li>- Keep containers securely sealed when not in use. ▶ Avoid physical damage to containers.</li> <li>- Always wash hands with soap and water after handling.</li> <li>- Work clothes should be laundered separately. Launder contaminated clothing before re-use.</li> <li>- Use good occupational work practice.</li> <li>- Observe manufacturer's storage and handling recommendations contained within this SDS.</li> <li>- Atmosphere should be regularly checked against established exposure standards to ensure safe working conditions are maintained.</li> </ul>
<b>Fire and explosion protection</b>	See section 5
<b>Other information</b>	None known

**7.2. Conditions for safe storage, including any incompatibilities**

<b>Suitable container</b>	<ul style="list-style-type: none"> <li>- Polyethylene or polypropylene container.</li> <li>- Packing as recommended by manufacturer.</li> <li>- Check all containers are clearly labelled and free from leaks.</li> </ul>
<b>Storage incompatibility</b>	None known
<b>Hazard categories in accordance with Regulation (EC) No 1272/2008</b>	Not Available
<b>Qualifying quantity (tonnes) of dangerous substances as referred to in Article 3(10) for the application of</b>	Not Available

**7.3. Specific end use(s)**

See section 1.2

**SECTION 8. Exposure controls / personal protection****8.1. Control parameters**

<b>Ingredient</b>	<b>DNELs Exposure Pattern Worker</b>	<b>PNECs Compartment</b>
sodium azide	Dermal 46.7 µg/kg bw/day (Systemic, Chronic) Inhalation 0.164 mg/m <sup>3</sup> (Systemic, Chronic) <i>Dermal 16.7 µg/kg bw/day (Systemic, Chronic) *</i> <i>Inhalation 29 µg/m<sup>3</sup> (Systemic, Chronic) *</i> <i>Oral 16.7 µg/kg bw/day (Systemic, Chronic) *</i>	0.35 µg/L (Water (Fresh)) 15 ng/L (Water - Intermittent release) 3.5 µg/L (Water (Marine)) 16.7 µg/kg sediment dw (Sediment (Fresh Water)) 0.72 µg/kg sediment dw (Sediment (Marine)) 30 µg/L (STP)

\* Values for General Population

**INGREDIENT DATA****Occupational Exposure Limits (OEL)**

<b>Source</b>	<b>Ingredient</b>	<b>Material name</b>	<b>TWA</b>	<b>STEL</b>	<b>Peak</b>	<b>Notes</b>
Netherlands Occupational Exposure Limits	Sodium azide	Natrium azide	0.1 mg/m <sup>3</sup>	0.3 mg.m <sup>3</sup>	Not Available	A
EU Consolidated List of Indicative Occupational Exposure Limit values (IOELVs)	Sodium azide	Sodium azide	0.1 mg/m <sup>3</sup>	0.3 mg.m <sup>3</sup>	Not Available	Skin

**Emergency Limits**

<b>Ingredient</b>	<b>TEEL-1</b>	<b>TEEL-2</b>	<b>TEEL-3</b>
sodium azide	0.026 mg/m <sup>3</sup>	0.29 mg/m <sup>3</sup>	5.3 mg/m <sup>3</sup>

<b>Ingredient</b>	<b>Original IDLH</b>	<b>Revised IDLH</b>
sodium azide	Not Available	Not Available

8.2. Exposure controls

<p><b>8.2.1. Appropriate engineering controls</b></p>	<p>Engineering controls are used to remove a hazard or place a barrier between the worker and the hazard. Well-designed engineering controls can be highly effective in protecting workers and will typically be independent of worker interactions to provide this high level of protection.</p> <p>The basic types of engineering controls are:                  Process controls which involve changing the way a job activity or process is done to reduce the risk.                  Enclosure and/or isolation of emission source which keeps a selected hazard "physically" away from the worker and ventilation that strategically "adds" and "removes" air in the work environment. Ventilation can remove or dilute an air contaminant if designed properly. The design of a ventilation system must match the particular process and chemical or contaminant in use.                  Employers may need to use multiple types of controls to prevent employee overexposure.</p> <p>General exhaust is adequate under normal operating conditions. If risk of overexposure exists, wear SAA approved respirator. Correct fit is essential to obtain adequate protection. Provide adequate ventilation in warehouse or closed storage areas. Air contaminants generated in the workplace possess varying "escape" velocities which, in turn, determine the "capture velocities" of fresh circulating air required to effectively remove the contaminant.</p> <table border="1" data-bbox="389 519 1489 788"> <thead> <tr> <th>Type of Contaminant:</th> <th>Air Speed:</th> </tr> </thead> <tbody> <tr> <td>solvent, vapors, degreasing etc., evaporating from tank (in still air)</td> <td>0.25-0.5 m/s (50-100 f/min)</td> </tr> <tr> <td>aerosols, fumes from pouring operations, intermittent container filling, low speed conveyer transfers, welding, spray drift, plating acid fumes, pickling (released at low velocity into zone of active generation)</td> <td>0.5-1 m/s (100-200 f/min.)</td> </tr> <tr> <td>direct spray, spray painting in shallow booths, drum filling, conveyer loading, crusher dusts, gas discharge (active generation into zone of rapid air motion)</td> <td>1-2.5 m/s (200-500 f/min)</td> </tr> <tr> <td>grinding, abrasive blasting, tumbling, high speed wheel generated dusts (released at high initial velocity into zone of very high rapid air motion).</td> <td>2.5-10 m/s (500-2000 f/min.)</td> </tr> </tbody> </table> <p>Within each range the appropriate value depends on:</p> <table border="1" data-bbox="389 855 1096 1077"> <thead> <tr> <th>Lower end of the range</th> <th>Upper end of the range</th> </tr> </thead> <tbody> <tr> <td>1: Room air currents minimal or favorable to capture</td> <td>1: Disturbing room air currents</td> </tr> <tr> <td>2: Contaminants of low toxicity or of nuisance value only</td> <td>2: Contaminants of high toxicity</td> </tr> <tr> <td>3: Intermittent, low production.</td> <td>3: High production, heavy use</td> </tr> <tr> <td>4: Large hood or large air mass in motion</td> <td>4: Small hood - local control only</td> </tr> </tbody> </table> <p>Simple theory shows that air velocity falls rapidly with distance away from the opening of a simple extraction pipe. Velocity generally decreases with the square of distance from the extraction point (in simple cases). Therefore the air speed at the extraction point should be adjusted, accordingly, after reference to distance from the contaminating source. The air velocity at the extraction fan, for example, should be a minimum of 1-2 m/s (200-400 f/min.) for extraction of solvents generated in a tank 2 meters distant from the extraction point. Other mechanical considerations, producing performance deficits within the extraction apparatus, make it essential that theoretical air velocities are multiplied by factors of 10 or more when extraction systems are installed or used.</p>	Type of Contaminant:	Air Speed:	solvent, vapors, degreasing etc., evaporating from tank (in still air)	0.25-0.5 m/s (50-100 f/min)	aerosols, fumes from pouring operations, intermittent container filling, low speed conveyer transfers, welding, spray drift, plating acid fumes, pickling (released at low velocity into zone of active generation)	0.5-1 m/s (100-200 f/min.)	direct spray, spray painting in shallow booths, drum filling, conveyer loading, crusher dusts, gas discharge (active generation into zone of rapid air motion)	1-2.5 m/s (200-500 f/min)	grinding, abrasive blasting, tumbling, high speed wheel generated dusts (released at high initial velocity into zone of very high rapid air motion).	2.5-10 m/s (500-2000 f/min.)	Lower end of the range	Upper end of the range	1: Room air currents minimal or favorable to capture	1: Disturbing room air currents	2: Contaminants of low toxicity or of nuisance value only	2: Contaminants of high toxicity	3: Intermittent, low production.	3: High production, heavy use	4: Large hood or large air mass in motion	4: Small hood - local control only
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<p><b>8.2.2. Personal protection</b></p>																					
<p><b>Eye and face protection</b></p>	<ul style="list-style-type: none"> <li>- Safety glasses with side shields</li> <li>- Chemical goggles.</li> </ul> <p>Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of lenses or restrictions on use, should be created for each workplace or task. This should include a review of lens absorption and adsorption for the class of chemicals in use and an account of injury experience. Medical and first-aid personnel should be trained in their removal and suitable equipment should be readily available. In the event of chemical exposure, begin eye irrigation immediately and remove contact lens as soon as practicable. Lens should be removed at the first signs of eye redness or irritation - lens should be removed in a clean environment only after workers have washed hands thoroughly. [CDC NIOSH Current Intelligence Bulletin 59], [AS/NZS 1336 or national equivalent]</p>																				
<p><b>Skin protection</b></p>	<p>See Hand protection below</p>																				

<p><b>Hands/feet protection</b></p>	<ul style="list-style-type: none"> <li>- Wear chemical protective gloves, e.g. PVC.</li> <li>- Wear safety footwear or safety gumboots, e.g. Rubber</li> </ul> <p>The selection of suitable gloves does not only depend on the material, but also on further marks of quality which vary from manufacturer to manufacturer. Where the chemical is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.</p> <p>The exact break through time for substances has to be obtained from the manufacturer of the protective gloves and has to be observed when making a final choice.</p> <p>Personal hygiene is a key element of effective hand care. Gloves must only be worn on clean hands. After using gloves, hands should be washed and dried thoroughly. Application of a non-perfumed moisturizer is recommended.</p> <p>Suitability and durability of glove type is dependent on usage. Important factors in the selection of gloves include: · frequency and duration of contact, · chemical resistance of glove material, · glove thickness and · dexterity</p> <p>Select gloves tested to a relevant standard (e.g. Europe EN 374, US F739, AS/NZS 2161.1 or national equivalent).</p> <ul style="list-style-type: none"> <li>· When prolonged or frequently repeated contact may occur, a glove with a protection class of 5 or higher (breakthrough time greater than 240 minutes according to EN 374, AS/NZS 2161.10.1 or national equivalent) is recommended.</li> <li>· When only brief contact is expected, a glove with a protection class of 3 or higher (breakthrough time greater than 60 minutes according to EN 374, AS/NZS 2161.10.1 or national equivalent) is recommended.</li> <li>· Some glove polymer types are less affected by movement and this should be taken into account when considering gloves for long-term use. · Contaminated gloves should be replaced.</li> </ul> <p>As defined in ASTM F-739-96 in any application, gloves are rated as:</p> <ul style="list-style-type: none"> <li>· Excellent when breakthrough time &gt; 480 min</li> <li>· Good when breakthrough time &gt; 20 min</li> <li>· Fair when breakthrough time &lt; 20 min · Poor when glove material degrades</li> </ul> <p>For general applications, gloves with a thickness typically greater than 0.35 mm, are recommended.</p> <p>It should be emphasized that glove thickness is not necessarily a good predictor of glove resistance to a specific chemical, as the permeation efficiency of the glove will be dependent on the exact composition of the glove material. Therefore, glove selection should also be based on consideration of the task requirements and knowledge of breakthrough times. Glove thickness may also vary depending on the glove manufacturer, the glove type and the glove model. Therefore, the manufacturers technical data should always be taken into account to ensure selection of the most appropriate glove for the task.</p> <p>Note: Depending on the activity being conducted, gloves of varying thickness may be required for specific tasks. For example:</p> <ul style="list-style-type: none"> <li>- Thinner gloves (down to 0.1 mm or less) may be required where a high degree of manual dexterity is needed. However, these gloves are only likely to give short duration protection and would normally be just for single use applications, then disposed of.</li> <li>- Thicker gloves (up to 3 mm or more) may be required where there is a mechanical (as well as a chemical) risk i.e. where there is abrasion or puncture potential</li> </ul> <p>Gloves must only be worn on clean hands. After using gloves, hands should be washed and dried thoroughly. Application of a non-perfumed moisturizer is recommended.</p>
<p><b>Body protection</b></p>	<p>See Other protection below</p>
<p><b>Other protection</b></p>	<ul style="list-style-type: none"> <li>- Overalls.</li> <li>- P.V.C apron.</li> <li>- Barrier cream.</li> <li>- Skin cleansing cream.</li> <li>- Eye wash unit.</li> </ul>

### Respiratory protection

Type B-P Filter of sufficient capacity. (AS/NZS 1716 & 1715, EN 143:2000 & 149:2001, ANSI Z88 or national equivalent)

Where the concentration of gas/particulates in the breathing zone, approaches or exceeds the "Exposure Standard" (or ES), respiratory protection is required. Degree of protection varies with both face-piece and Class of filter; the nature of protection varies with Type of filter.

Required Minimum Protection Factor	Half-Face Respirator	Full-Face Respirator	Powered Air Respirator
up to 10 x ES	B-AUS P2	-	B-PAPR-AUS / Class 1 P2
up to 50 x ES	-	B-AUS / Class 1 P2	-
up to 100 x ES	-	B-2 P2	B-PAPR-2 P2 ^

^ - Full-face

A(All classes) = Organic vapors, B AUS or B1 = Acid gasses, B2 = Acid gas or hydrogen cyanide(HCN), B3 = Acid gas or hydrogen cyanide(HCN), E = Sulfur dioxide(SO<sub>2</sub>), G = Agricultural chemicals, K = Ammonia(NH<sub>3</sub>), Hg = Mercury, NO = Oxides of nitrogen, MB = Methyl bromide, AX = Low boiling point organic compounds(below 65 degC)

### 8.2.3. Environmental exposure controls

See section 12

**SECTION 9. Physical and chemical properties****9.1. Information on basic physical and chemical properties**

<b>Appearance</b>	Colorless		
<b>Physical state</b>	Liquid	<b>Relative density (Water = 1)</b>	Not Available
<b>Odor</b>	Not Available	<b>Partition coefficient n-octanol / water</b>	Not Available
<b>Odor threshold</b>	Not Available	<b>Auto-ignition temperature (°C)</b>	Not Available
<b>pH (as supplied)</b>	Not Available	<b>Decomposition temperature (°C)</b>	Not Available
<b>Melting point / freezing point (°C)</b>	Not Available	<b>Viscosity (cSt)</b>	Not Available
<b>Initial boiling point &amp; boiling range (°C)</b>	Not Available	<b>Molecular weight (g/mol)</b>	Not Available
<b>Flash point (°C)</b>	Not Available	<b>Taste</b>	Not Available
<b>Evaporation rate</b>	Not Available	<b>Explosive properties</b>	Not Available
<b>Flammability</b>	Not Available	<b>Oxidizing properties</b>	Not Available
<b>Upper Explosive Limit (%)</b>	Not Available	<b>Surface Tension (dyn/cm or mN/m)</b>	Not Available
<b>Lower Explosive Limit (%)</b>	Not Available	<b>Volatile Component (%vol)</b>	Not Available
<b>Vapor pressure (kPa)</b>	Not Available	<b>Gas group</b>	Not Available
<b>Solubility in water</b>	Not Applicable	<b>pH as a solution (1%)</b>	Not Available
<b>Vapor density (Air = 1)</b>	Not Available	<b>VOC g/L</b>	Not Available
<b>Nanoform Solubility</b>	Not Available	<b>Nanoform Particle Characteristics</b>	Not Available
<b>Particle Size</b>	Not Available		

**9.2. Other information**

Not Available

**SECTION 10. Stability and reactivity**

<b>10.1. Reactivity</b>	See section 7.2
<b>10.2. Chemical stability</b>	<ul style="list-style-type: none"> <li>- Unstable in the presence of incompatible materials.</li> <li>- Product is considered stable.</li> <li>- Hazardous polymerization will not occur.</li> </ul>
<b>10.3. Possibility of hazardous reactions</b>	See section 7.2
<b>10.4. Conditions to avoid</b>	See section 7.2
<b>10.5. Incompatible materials</b>	See section 7.2
<b>10.6. Hazardous decomposition products</b>	See section 5.3

## SECTION 11. Toxicological information

## 11.1. Information on toxicological effects

<b>Inhaled</b>	The material is not thought to produce either adverse health effects or irritation of the respiratory tract following inhalation (as classified by EC Directives using animal models). Nevertheless, adverse systemic effects have been produced following exposure of animals by at least one other route and good hygiene practice requires that exposure be kept to a minimum and that suitable control measures be used in an occupational setting.	
<b>Ingestion</b>	Accidental ingestion of the material may be harmful; animal experiments indicate that ingestion of less than 150 gram may be fatal or may produce serious damage to the health of the individual.	
<b>Skin Contact</b>	Skin contact is not thought to produce harmful health effects (as classified under EC Directives using animal models). Systemic harm, however, has been identified following exposure of animals by at least one other route and the material may still produce health damage following entry through wounds, lesions or abrasions. Open cuts, abraded or irritated skin should not be exposed to this material Entry into the blood-stream, through, for example, cuts, abrasions or lesions, may produce systemic injury with harmful effects. Examine the skin prior to the use of the material and ensure that any external damage is suitably protected.	
<b>Eye</b>	Although the liquid is not thought to be an irritant (as classified by EC Directives), direct contact with the eye may produce transient discomfort characterized by tearing or conjunctival redness (as with windburn).	
<b>Chronic</b>	Long-term exposure to the product is not thought to produce chronic effects adverse to the health (as classified by EC Directives using animal models); nevertheless exposure by all routes should be minimized as a matter of course.	
<b>Blood DNA particle solution</b>	<b>TOXICITY</b>	<b>IRRITATION</b>
	Not Available	Not Available
<b>sodium azide</b>	<b>TOXICITY</b>	<b>IRRITATION</b>
	Dermal (rabbit) LD50: 20 mg/kg <sup>[2]</sup>	Eye: no adverse effect observed (not irritating) <sup>[1]</sup>
	Inhalation(Rat) LC50: >0.054<0.52 mg/l4h <sup>[1]</sup>	Skin: no adverse effect observed (not irritating) <sup>[1]</sup>
	Oral (Rat) LD50: 27 mg/kg <sup>[2]</sup>	
<b>Legend:</b>	1. Value obtained from Europe ECHA Registered Substances - Acute toxicity 2. Value obtained from manufacturer's SDS. Unless otherwise specified data extracted from RTECS - Register of Toxic Effect of chemical Substances	

**SODIUM AZIDE**

General anaesthesia, somnolence, convulsions, headache, irritability, arrhythmias, dyspnae, respiratory stimulation, diarrhoea recorded.

Acute Toxicity ✘  
 Skin Irritation/Corrosion ✘  
 Serious Eye Damage/Irritation ✘  
 Respiratory or Skin sensitization ✘  
 Mutagenicity ✘

Carcinogenicity ✘  
 Reproductivity ✘  
 STOT - Single Exposure ✘  
 STOT - Repeated Exposure ✘  
 Aspiration Hazard ✘

Legend:

✘ Data either not available or does not fill the criteria for classification  
 ✔ Data available to make classification

## 11.2. Information on other hazards

## 11.2.1 Endocrine Disruption Properties

Not Available

## 11.2.2 Other Information

See Section 11.1

## SECTION 12. Ecological information

Blood DNA particle solution	Endpoint	Test Duration (hr)	Species	Value	Source
	Not Available	Not Available	Not Available	Not Available	Not Available

sodium azide	Endpoint	Test Duration (hr)	Species	Value	Source
	NOEC(ECx)	168h	Crustacea	0.1mg/l	2
	EC50	96h	Algae or other aquatic plants	0.242-0.429mg/l	4
	LC50	96h	Fish	0.68mg/l	2
	EC50	48h	Crustacea	>=0.4<0.6mg/l	2

**Legend:** *Extracted from 1. IUCLID Toxicity Data 2. Europe ECHA Registered Substances - Ecotoxicological Information - Aquatic Toxicity 4. US EPA, Ecotox database - Aquatic Toxicity Data 5. ECETOC Aquatic Hazard Assessment Data 6. NITE (Japan) - Bioconcentration Data 7. METI (Japan) - Bioconcentration Data 8. Vendor Data*

Do **NOT** discharge into sewer or waterways.

## 12.2. Persistence and degradability

Ingredient	Persistence: Water/Soil	Persistence: Air
	sodium azide	LOW

## 12.3. Bioaccumulative potential

Ingredient	Bioaccumulation
sodium azide	LOW (LogKOW = 0.1631)

## 12.4. Mobility in soil

Ingredient	Mobility
sodium azide	HIGH (KOC = 1.342)

## 12.5. Results of PBT and vPvB assessment

	P	B	T
Relevant available data	Not Available	Not Available	Not Available
PBT	✘	✘	✘
vPvB	✘	✘	✘
PBT Criteria fulfilled?			No
vPvB			No

## 12.6. Endocrine Disruption Properties

Not Available

## 12.7. Other adverse effects

Not Available

**SECTION 13. Disposal considerations**

**13.1. Waste treatment methods**

<b>Product / Packaging disposal</b>	<ul style="list-style-type: none"> <li>- Containers may still present a chemical hazard/ danger when empty.</li> <li>- Return to supplier for reuse/ recycling if possible.</li> </ul> <p>Otherwise:</p> <ul style="list-style-type: none"> <li>- If container cannot be cleaned sufficiently well to ensure that residuals do not remain or if the container cannot be used to store the same product, then puncture containers, to prevent re-use, and bury at an authorized landfill.</li> <li>- Where possible retain label warnings and SDS and observe all notices pertaining to the product.</li> </ul> <p>Legislation addressing waste disposal requirements may differ by country, state and/ or territory. Each user must refer to laws operating in their area. In some areas, certain wastes must be tracked.</p> <p>A Hierarchy of Controls seems to be common - the user should investigate:</p> <ul style="list-style-type: none"> <li>- Reduction</li> <li>- Reuse</li> <li>- Recycling</li> <li>- Disposal (if all else fails)</li> </ul> <p>This material may be recycled if unused, or if it has not been contaminated so as to make it unsuitable for its intended use. If it has been contaminated, it may be possible to reclaim the product by filtration, distillation or some other means.</p> <p>Shelf life considerations should also be applied in making decisions of this type. Note that properties of a material may change in use, and recycling or reuse may not always be appropriate.</p> <ul style="list-style-type: none"> <li>- Do <b>NOT</b> allow wash water from cleaning or process equipment to enter drains.</li> <li>- It may be necessary to collect all wash water for treatment before disposal.</li> <li>- In all cases disposal to sewer may be subject to local laws and regulations and these should be considered first.</li> <li>- Where in doubt contact the responsible authority.</li> <li>- Recycle wherever possible.</li> <li>- Consult manufacturer for recycling options or consult local or regional waste management authority for disposal if no suitable treatment or disposal facility can be identified.</li> <li>- Dispose of by burial in a land-fill specifically licensed to accept chemical and/or pharmaceutical waste or incineration in a licensed apparatus (after admixture with suitable combustible material)</li> <li>- Decontaminate empty containers. Observe all labels safeguards until containers are cleaned and destroyed</li> </ul>
<b>Waste treatment options</b>	Not Available
<b>Sewage disposal options</b>	Not Available

**SECTION 14. Transport information**

**Labels Required**

<b>Marine Pollutant</b>	NO
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**Land transport (ADR): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS**

<b>14.1. UN number</b>	Not Applicable	
<b>14.2. UN proper shipping name</b>	Not Applicable	
<b>14.3. Transport hazard class(es)</b>	Class	Not Applicable
	Sub risk	Not Applicable
<b>14.4. Packing group</b>	Not Applicable	
<b>14.5. Environmental hazard</b>	Not Applicable	
<b>14.6. Special precautions for user</b>	Hazard identification (Kemler)	Not Applicable
	Classification code	Not Applicable
	Hazard Label	Not Applicable
	Special provisions	Not Applicable
	Limited quantity	Not Applicable
	Tunnel Restriction Code	Not Applicable

**Air transport (ICAO-IATA / DGR): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS**

14.1. UN number	Not Applicable	
14.2. UN proper shipping name	Not Applicable	
14.3. Transport hazard class(es)	ICAO/IATA Class	Not Applicable
	ICAO / IATA Sub risk	Not Applicable
	ERG Code	Not Applicable
14.4. Packing group	Not Applicable	
14.5. Environmental hazard	Not Applicable	
14.6. Special precautions for user	Special provisions	Not Applicable
	Cargo Only Packing Instructions	Not Applicable
	Cargo Only Maximum Qty / Pack	Not Applicable
	Passenger and Cargo Packing Instructions	Not Applicable
	Passenger and Cargo Maximum Qty / Pack	Not Applicable
	Passenger and Cargo Limited Quantity Packing Instructions	Not Applicable
	Passenger and Cargo Limited Maximum Qty / Pack	Not Applicable

**Sea transport (IMDG-Code / GGVSee): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS**

14.1. UN number	Not Applicable	
14.2. UN proper shipping name	Not Applicable	
14.3. Transport hazard class(es)	IMDG Class	Not Applicable
	IMDG Sub risk	Not Applicable
14.4. Packing group	Not Applicable	
14.5. Environmental hazard	Not Applicable	
14.6. Special precautions for user	EMS Number	Not Applicable
	Special provisions	Not Applicable
	Limited Quantities	Not Applicable

**Inland waterways transport (ADN): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS**

14.1. UN number	Not Applicable	
14.2. UN proper shipping name	Not Applicable	
14.3. Transport hazard class(es)	Not Applicable Not Applicable	
14.4. Packing group	Not Applicable	
14.5. Environmental hazard	Not Applicable	
14.6. Special precautions for user	Classification code	Not Applicable
	Special provisions	Not Applicable
	Limited quantity	Not Applicable
	Equipment required	Not Applicable
	Fire cones number	Not Applicable

**14.7. Transport in bulk according to Annex II of MARPOL and the IBC code**

Not Applicable

**14.8. Transport in bulk in accordance with MARPOL Annex V and the IMSBC Code**

Product name	Group
sodium azide	Not Available

**14.9. Transport in bulk in accordance with the ICG Code**

Product name	Ship Type
sodium azide	Not Available

**SECTION 15. Regulatory information****15.1. Safety, health and environmental regulations / legislation specific for the substance or mixture****sodium azide is found on the following regulatory lists**

EU Consolidated List of Indicative Occupational Exposure Limit Values (IOELVs)

European Union (EU) Regulation (EC) No 1272/2008 on Classification, Labelling and Packaging of Substances and Mixtures - Annex VI

Europe EC Inventory

Netherlands Occupational Exposure Limits

European Union - European Inventory of Existing Commercial Chemical Substances (EINECS)

This safety data sheet is in compliance with the following EU legislation and its adaptations - as far as applicable - : Directives 98/24/EC, - 92/85/EEC, - 94/33/EC, - 2008/98/EC, - 2010/75/EU; Commission Regulation (EU) 2020/878; Regulation (EC) No 1272/2008 as updated through ATPs.

**Information according to 2012/18/EU (Seveso III):**

Seveso Category	Not Available
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**15.2. Chemical safety assessment**

No Chemical Safety Assessment has been carried out for this substance/mixture by the supplier.

**ECHA SUMMARY**

Ingredient	CAS number	Index No	ECHA Dossier
sodium azide	26628-22-8	011-004-00-7	Not Available

Harmonization (C&L Inventory)	Hazard Class and Category Code(s)	Pictograms Signal Word Code(s)	Hazard Statement Code(s)
1	Acute Tox. 2; Aquatic Acute 1; Aquatic Chronic 1	GHS09; GHS06; Dgr	H300; H400; H410
2	Acute Tox. 2; Aquatic Acute 1; Aquatic Chronic 1; Acute Tox. 1; Acute Tox. 1; STOT RE 2; Skin Irrit. 2; Eye Irrit. 2; STOT SE 1	GHS09; GHS06; Dgr; GHS08	H300; H410; H310; H330; H373; H400; H315; H319; H370

Harmonization Code 1 = The most prevalent classification. Harmonization Code 2 = The most severe classification.

**National Inventory Status**

National Inventory	Status
Australia - AIC / Australia Non-Industrial Use	Yes
Canada - DSL	Yes
Canada - NDSL	No (sodium azide)
China - IECSC	Yes
Europe - EINEC / ELINCS / NLP	Yes
Japan - ENCS	Yes
Korea - KECI	Yes
New Zealand - NZIoC	Yes
Philippines - PICCS	Yes
USA - TSCA	Yes
Taiwan - TCSI	Yes
Mexico - INSQ	Yes
Vietnam - NCI	Yes
Russia - FBEPH	Yes

**Legend:**

Yes = All CAS declared ingredients are on the inventory

No = One or more of the CAS listed ingredients are not on the inventory. These ingredients may be exempt or will require registration.

## SECTION 16. Other information

## Full text Risk and Hazard codes

H300	Fatal if swallowed.
H310	Fatal in contact with skin.
H315	Causes skin irritation.
H319	Causes serious eye irritation.
H330	Fatal if inhaled.
H370	Causes damage to organs.
H373	May cause damage to organs through prolonged or repeated exposure.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.

## Version Summary

Version	Date of Update	Sections Updated
1	27/AUG/2025	Initial version

## Other information

The SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings. Risks may be determined by reference to Exposures Scenarios. Scale of use, frequency of use and current or available engineering controls must be considered. For detailed advice on Personal Protective Equipment, refer to the following EU CEN Standards: EN 166 Personal eye-protection

EN 340 Protective clothing

EN 374 Protective gloves against chemicals and micro-organisms

EN 13832 Footwear protecting against chemicals

EN 133 Respiratory protective devices

## Definitions and abbreviations

ACGIH	American Conference of Governmental Industrial Hygienists
AIIC	Australian Inventory of Industrial Chemicals
BCF	Bio Concentration Factors
BEI	Biological Exposure Index
DSL	Domestic Substances List
EINECS	European Inventory of Existing Commercial chemical Substances
ELINCS	European List of Notified Chemical Substances
ENCs	Existing and New Chemical Substances Inventory
ES	Exposure Standard
FBEPH	Russian register of potentially Hazardous Chemical and Biological Substances
IARC	International Agency for research on Cancer
IDLH	Immediately Dangerous to Life or Health concentrations
IECSC	Inventory of Existing Chemical Substances in China
INSQ	Inventario Nacional de Sustancias Químicas
KECI	Korea Existing Chemicals Inventory
LOAEL	Lowest Observed Adverse Effect Level
LOD	Limit of Detection
NCI	National Chemical inventory
NDSL	Non-Domestic Substances List
NLP	No-Longer Polymers
NOAEL	No Observed Adverse Effect Level
NZIoC	New Zealand Inventory of Chemicals
OSF	Odor Safety Factor
OTV	Odor Threshold Value
PC	Permissible Concentration
PICCS	Philippine Inventory of Chemicals and Chemical Substances
STEL	Short Term Exposure Limit
TCSI	Taiwan Chemical Substance Inventory
TEEL	Temporary Emergency Exposure Limit
TLV	Threshold Limit Value
TSCA	Toxic Substances Control Act
TWA	Time Weighted Average

## Deckblatt zum Sicherheitsdatenblatt

Erstellt am 02.03.2026 Version 01.00

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### Produktidentifikation:

Handelsname	Elution Buffer
Verwendungszweck	Ausschliesslich und nur für den Laborgebrauch zu verwenden. Nur für Forschungszwecke geeignet, Diagnostikzwecke sind von der Verwendung ausgeschlossen.

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### Lieferant, der das Sicherheitsdatenblatt übermittelt:

INTEGRA Biosciences AG  
Tardisstrasse 201,  
7205 Zizers, Schweiz  
[www.integra-biosciences.com](http://www.integra-biosciences.com)  
Tel.: +41 (0)81 286 95 30  
[info-ch@integra-biosciences.com](mailto:info-ch@integra-biosciences.com)

**Nationale Notfallnummer: 145** (24h erreichbar, Tox Info Suisse, Zürich; für Anrufe aus der Schweiz, Auskünfte auf Deutsch, Französisch und Italienisch)

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### Informationen für die Verwender betreffend:

#### Abschnitt 7 – Handhabung und Lagerung

Allfällig relevante schweizerische Anforderungen des Arbeitnehmerschutzes und des Umweltschutzes betreffend die Handhabung und Lagerung sind zu berücksichtigen.

#### Abschnitt 8 – Begrenzung und Überwachung der Exposition / Persönliche Schutzausrüstung

Die im Sicherheitsdatenblatt angegebenen Grenzwerte basieren auf den einschlägigen EG-/EU-Vorschriften. Für den Arbeitnehmerschutz in der Schweiz sind zusätzlich die Vorgaben der SUVA zu berücksichtigen. Gegebenenfalls ist die persönliche Schutzausrüstung zu spezifizieren.

#### Abschnitt 13 – Hinweise zur Entsorgung

Hinweise zur Entsorgung sind gemäß der Technischen Verordnung über Abfälle (TVA), der Verordnung über den Verkehr mit Abfällen (VeVA) sowie der Verordnung des UVEK über Listen zum Verkehr mit Abfällen (LVA) zu berücksichtigen.

#### Abschnitt 15 – Rechtsvorschriften

Allfällig relevante schweizerische Vorschriften, z. B. betreffend Luftreinhalte-Verordnung, Störfallverordnung (Mengenschwellen), Abgabevorschriften, Verwendungsbeschränkungen oder -verbote sowie allfällige Zulassungen (z. B. Biozidprodukte), sind zu berücksichtigen.



Version No: 1

Issue date: 29/APR/2024

Revision date: Not Applicable

Safety Data Sheet (Conforms to Annex II of REACH (1907/2006) - Regulation 2020/878)

**SECTION 1. Identification of the substance / mixture and of the company / undertaking****1.1. Product Identifier**

Product name	Elution Buffer
Synonyms	Not Available
Other means of identification	Not Available

**1.2. Relevant identified uses of the substance or mixture and uses advised against**

Relevant identified uses	Laboratory use.
Uses advised against	Not Applicable

**1.3. Details of the manufacturer or supplier of the safety data sheet**

Registered company name	CleanNA
Address	Coenecoop 75, 2741 PH, Waddinxveen, The Netherlands
Telephone	+31 (0) 182 22 33 50
Fax	+31 (0) 182 22 33 98
Website	<a href="http://www.cleanna.com">www.cleanna.com</a>
Email	info@cleanna.com

**1.4. Emergency telephone number**

Emergency telephone numbers	112 (European emergency number)
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**SECTION 2. Hazards identification****2.1. Classification of the substance or mixture**

Classification according to regulation (EC) No 1272/2008 [CLP] and amendments	Not Applicable
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**2.2. Label elements**

Hazard pictogram(s)	Not Applicable
Signal word	Not Applicable

**Hazard statement(s)**

Not Applicable

**Supplementary statement(s)**

Not Applicable

**Precautionary statement(s) Prevention**

Not Applicable

**Precautionary statement(s) Response**

Not Applicable

**Precautionary statement(s) Storage**

Not Applicable

**Precautionary statement(s) Disposal**

Not Applicable

**2.3. Other hazards**

REACH – Art. 57-59: The mixture does not contain Substances of Very High Concern (SVHC) at the SDS issue date.

**SECTION 3. Composition / information on ingredients****3.1 Substances**

See 'Composition on ingredients' in Section 3.2

**3.2 Mixtures**

1. CAS No 2. EC No 3. Index No 4. REACH No	%[weight]	Name	Classification according to regulation (EC) No 1272/2008 [CLP] and amendments	SCL / M-Factor	Nanoform Particle Characteristics
1. 77-86-1 2. 201-064-4 3. Not Available 4. Not Available	0.1 - 1	Tris (hydroxymethyl) aminomethane	Skin Corrosion/Irritation – Category 2 Serious Eye Damage/Eye Irritation – Category 2 Specific Target Toxicity – Single Exposure (Respiratory Tract Irritation – Category 3 H315, H319, H335 <sup>1</sup>	Not Available	Not Available
<b>Legend:</b>	2. Classification drawn from Regulation (EU) No 1272/2008 - Annex VI; 3. Classification drawn from C&L; * EU IOELVs available; [e] Substance identified as having endocrine disrupting properties				

**SECTION 4. First aid measures****4.1. Description of first aid measures**

<b>Eye Contact</b>	<p>If this product comes in contact with eyes:</p> <ul style="list-style-type: none"> <li>▶ Wash out immediately with water.</li> <li>▶ If irritation continues, seek medical attention.</li> <li>▶ Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.</li> </ul>
<b>Skin Contact</b>	<p>If skin or hair contact occurs:</p> <ul style="list-style-type: none"> <li>▶ Flush skin and hair with running water (and soap if available).</li> <li>▶ Seek medical attention in event of irritation.</li> </ul>
<b>Inhalation</b>	<ul style="list-style-type: none"> <li>▶ If fumes, aerosols or combustion products are inhaled remove from contaminated area.</li> <li>▶ Other measures are usually unnecessary.</li> </ul>
<b>Ingestion</b>	<ul style="list-style-type: none"> <li>▶ Immediately give a glass of water.</li> <li>▶ First aid is not generally required. If in doubt, contact a Poisons Information Centre or a doctor.</li> </ul>

**4.2 Most important symptoms and effects, both acute and delayed**

See Section 11

**4.3. Indication of any immediate medical attention and special treatment needed**

Treat symptomatically

**SECTION 5. Firefighting measures****5.1 Extinguishing media**

- ▶ There is no restriction on the type of extinguisher which may be used.
- ▶ Use extinguishing media suitable for surrounding area.

**5.2 Special hazards arising from the substrate or mixture**

<b>Fire Incompatibility</b>	None known
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**5.3. Advice for firefighters**

<b>Fire Fighting</b>	<ul style="list-style-type: none"> <li>▶ Use water delivered as a fine spray to control fire and cool adjacent area.</li> <li>▶ <b>Do not</b> approach containers suspected to be hot.</li> <li>▶ Cool fire exposed containers with water spray from a protected location.</li> <li>▶ If safe to do so, remove containers from path of fire.</li> <li>▶ Equipment should be thoroughly decontaminated after use.</li> </ul>
<b>Fire/Explosion Hazard</b>	<ul style="list-style-type: none"> <li>▶ Non-combustible.</li> <li>▶ Not considered a significant fire risk, however containers may burn.</li> </ul>

**SECTION 6. Accidental release measures****6.1 Personal precautions, protective equipment and emergency procedures**

See section 8

**6.2 Environmental precautions**

See section 12

**6.3 Methods and material for containment and cleaning up**

<b>Minor Spills</b>	<ul style="list-style-type: none"> <li>▶ Clean up all spills immediately.</li> <li>▶ Avoid breathing vapours and contact with skin and eyes.</li> <li>▶ Control personal contact with the substance, by using protective equipment.</li> <li>▶ Contain and absorb spill with sand, earth, inert material or vermiculite.</li> <li>▶ Wipe up.</li> <li>▶ Place in a suitable, labelled container for waste disposal.</li> </ul>
<b>Major Spills</b>	<ul style="list-style-type: none"> <li>▶ Clear area of personnel and move upwind.</li> <li>▶ Alert Fire Brigade and tell them location and nature of hazard.</li> <li>▶ Control personal contact with the substance, by using protective equipment.</li> <li>▶ Prevent spillage from entering drains, sewers or water courses.</li> <li>▶ Recover product wherever possible.</li> <li>▶ Put residues in labelled containers for disposal.</li> <li>▶ If contamination of drains or waterways occurs, advise emergency services.</li> </ul>

**6.4. Reference to other sections**

Personal Protective Equipment advice is contained in Section 8 of the SDS.

**SECTION 7. Handling and storage****7.1. Precautions for safe handling**

<b>Safe handling</b>	<ul style="list-style-type: none"> <li>▶ Limit all unnecessary personal contact.</li> <li>▶ Wear protective clothing when risk of exposure occurs.</li> <li>▶ Use in a well-ventilated area.</li> <li>▶ Avoid contact with incompatible materials.</li> <li>▶ When handling, <b>DO NOT</b> eat, drink or smoke.</li> <li>▶ Keep containers securely sealed when not in use.</li> <li>▶ Avoid physical damage to containers.</li> <li>▶ Always wash hands with soap and water after handling.</li> <li>▶ Work clothes should be laundered separately.</li> <li>▶ Use good occupational work practice.</li> <li>▶ Observe manufacturer's storage and handling recommendations contained within this SDS.</li> <li>▶ Atmosphere should be regularly checked against established exposure standards to ensure safe working conditions are maintained.</li> </ul>
<b>Fire and explosion protection</b>	See section 5
<b>Other information</b>	None known

**7.2. Conditions for safe storage, including any incompatibilities**

<b>Suitable container</b>	<ul style="list-style-type: none"> <li>▶ Polyethylene or polypropylene container.</li> <li>▶ Packing as recommended by manufacturer.</li> <li>▶ Check all containers are clearly labelled and free from leaks.</li> </ul>
<b>Storage incompatibility</b>	Avoid contamination of water, foodstuffs, feed or seed.
<b>Hazard categories in accordance with Regulation (EC) No 1272/2008</b>	Not available
<b>Qualifying quantity (tonnes) of dangerous substances as referred to in Article 3(10) for the application of</b>	Not available

**7.3. Specific end use(s)**

See section 1.2

**SECTION 8. Exposure controls / personal protection**

**8.1. Control parameters**

Ingredient	DNELs Exposure Pattern Worker			PNECs Compartment
Tris (hydroxymethyl) aminomethane	Dermal	166.7 mg/kg bw/day	(Systemic, Chronic)	300 mg/L (STP)
	Inhalation	117.5 mg/m <sup>3</sup>	(Systemic, Chronic)	
	Dermal	83.3 mg/kg bw/day	(Systemic, Chronic)	
	Inhalation	29 mg/m <sup>3</sup>	(Systemic, Chronic)	
	Oral	8.3 mg/kg bw/day	(Systemic, Chronic)	

\* Values for General Population

**Occupational Exposure Limits (OEL)**

**INGREDIENT DATA**

Source	Ingredient	Material name	TWA	STEL	Peak	Notes
Not Available	Not Available	Not Available	Not Available	Not Available	Not Available	Not Available

**Emergency Limits**

Ingredient	TEEL-1	TEEL-2	TEEL-3
Tris (hydroxymethyl) aminomethane	18 mg/m <sup>3</sup>	190 mg/m <sup>3</sup>	1,200 v

Ingredient	Original IDLH	Revised IDLH
Tris (hydroxymethyl) aminomethane	Not Available	Not Available

**Occupational Exposure Banding**

Ingredient	Occupational Exposure Band rating	Occupational Exposure Band Limit
Tris (hydroxymethyl) aminomethane	E	<= 0.01 mg/m <sup>3</sup>

**Notes;** Occupational exposure banding is a process of assigning chemicals into specific categories or bands based on a chemical's potency and the adverse health outcomes associated with exposure. The output of this process is an occupational exposure band (OEB), which corresponds to a range of exposure concentrations that are expected to protect worker health.

**8.2. Exposure controls**

**8.2.1 Appropriate engineering controls**

Engineering controls are used to remove a hazard or place a barrier between the worker and the hazard. Well-designed engineering controls can be highly effective in protecting workers and will typically be independent of worker interactions to provide this high level of protection.

The basic types of engineering controls are:

Process controls which involve changing the way a job activity or process is done to reduce the risk.

Enclosure and/or isolation of emission source which keeps a selected hazard "physically" away from the worker and ventilation that strategically "adds" and "removes" air in the work environment. Ventilation can remove or dilute an air contaminant if designed properly. The design of a ventilation system must match the particular process and chemical or contaminant in use.

Employers may need to use multiple types of controls to prevent employee overexposure.

General exhaust is adequate under normal operating conditions. If risk of overexposure exists, wear SAA approved respirator. Correct fit is essential to obtain adequate protection. Provide adequate ventilation in warehouse or closed storage areas. Air contaminants generated in the workplace possess varying 'escape' velocities which, in turn, determine the 'capture velocities' of fresh circulating air required to effectively remove the contaminant.

Type of contaminant	Air Speed
Solvent, vapours, degreasing etc. evaporating from tank (in still air)	0.25 – 0.5 m/s (50 – 100 f/min)
Aerosols, fumes from pouring operations, intermittent container filling, low speed conveyer transfers, welding, spray drift, plating acid fumes, pickling (released at low velocity into zone of active generation)	0.5 – 1 m/s (100 – 200 f/min)
Direct spray, spray painting in shallow booths, drum filling, conveyer loading, crusher debts, gas discharge (active generation into zone of rapid air motion)	1 – 2.5 m/s (200 – 500 f/min)
Grinding, abrasive blasting, tumbling, high speed generated dusts (released at high velocity into zone of very high rapid air motion)	w.5 – 10 m/s (500 – 200 f/min)

Within each range the appropriate value depends to:

Lower end of range	Upper end of range
1: Room air currents minimal of favourable to capture	1: Disturbing room air currents
2: Contaminants of low toxicity or of nuisance value only	2: Contaminants of high toxicity
3: Intermittent, low production	3: High Production, heavy use
4: Large hood or large air mass in motion	4: Small hood – local control only

Simple theory shows that air velocity falls rapidly with distance away from the opening of a simple extraction pipe. Velocity generally decreases with the square of distance from the extraction point (in simple cases). Therefore the air speed at the extraction point should be adjusted, accordingly, after reference to distance from the contaminating source. The air velocity at the extraction fan, for example, should be a minimum of 1-2 m/s (200-400 f/min) for extraction of solvents generated in a tank 2 meters distant from the extraction point. Other mechanical considerations, producing performance deficits within the extraction apparatus, make it essential that theoretical air velocities are multiplied by factors of 10 or more when extraction systems are installed or used.

**8.2.2. Personal protection**



**Eye and face protection**

- ▶ Safety glasses with side shields
- ▶ Chemical goggles.
- ▶ Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of lenses or restrictions on use, should be created for each workplace or task. This should include a review of lens absorption and adsorption

for the class of chemicals in use and an account of injury experience. Medical and first-aid personnel should be trained in their removal and suitable equipment should be readily available. In the event of chemical exposure, begin eye irrigation immediately and remove contact lens as soon as practicable. Lens should be removed at the first signs of eye redness or irritation - lens should be removed in a clean environment only after workers have washed hands thoroughly. [CDC NIOSH Current Intelligence Bulletin 59], [AS/NZS 1336 or national equivalent]

**Skin protection**

See Hand protection below

Wear general protective gloves, e.g. light weight rubber gloves.

The selection of suitable gloves does not only depend on the material, but also on further marks of quality which vary from manufacturer to manufacturer. Where the chemical is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

The exact break through time for substances has to be obtained from the manufacturer of the protective gloves and has to be observed when making a final choice.

Personal hygiene is a key element of effective hand care. Gloves must only be worn on clean hands. After using gloves, hands should be washed and dried thoroughly. Application of a non-perfumed moisturiser is recommended.

Suitability and durability of glove type is dependent on usage. Important factors in the selection of gloves include:

- frequency and duration of contact,
- chemical resistance of glove material,
- glove thickness and
- dexterity

Select gloves tested to a relevant standard (e.g. Europe EN 374, US F739, AS/NZS 2161.1 or national equivalent).

· When prolonged or frequently repeated contact may occur, a glove with a protection class of 5 or higher (breakthrough time greater than 240 minutes according to EN 374, AS/NZS 2161.10.1 or national equivalent) is recommended.

· When only brief contact is expected, a glove with a protection class of 3 or higher (breakthrough time greater than 60 minutes according to EN 374, AS/NZS 2161.10.1 or national equivalent) is recommended.

**Hand / feet protection**

Some glove polymer types are less affected by movement and this should be taken into account when considering gloves for long-term use.

· Contaminated gloves should be replaced.

As defined in ASTM F-739-96 in any application, gloves are rated as:

- Excellent when breakthrough time > 480 min
- Good when breakthrough time > 20 min
- Fair when breakthrough time < 20 min
- Poor when glove material degrades

For general applications, gloves with a thickness typically greater than 0.35 mm, are recommended.

It should be emphasised that glove thickness is not necessarily a good predictor of glove resistance to a specific chemical, as the permeation efficiency of the glove will be dependent on the exact composition of the glove material. Therefore, glove selection should also be based on consideration of the task requirements and knowledge of breakthrough times.

Glove thickness may also vary depending on the glove manufacturer, the glove type and the glove model. Therefore, the manufacturers technical data should always be taken into account to ensure selection of the most appropriate glove for the task.

Note: Depending on the activity being conducted, gloves of varying thickness may be required for specific tasks. For example:

- Thinner gloves (down to 0.1 mm or less) may be required where a high degree of manual dexterity is needed. However, these gloves are only likely to give short duration protection and would normally be just for single use applications, then disposed of.
- Thicker gloves (up to 3 mm or more) may be required where there is a mechanical (as well as a chemical) risk i.e. where there is abrasion or puncture potential

Gloves must only be worn on clean hands. After using gloves, hands should be washed and dried thoroughly. Application of a non-perfumed moisturiser is recommended.

**Body protection**

See Other protection below

**Other protection**

No special equipment needed when handling small quantities.

**OTHERWISE:**

- ▶ Overall.
- ▶ Barrier cream.
- ▶ Eyewash unit.

**8.2.3. Environmental exposure controls**

See section 12

**SECTION 9. Physical and chemical properties****9.1. Information on basic physical and chemical properties**

<b>Appearance</b>	Not Available		
<b>Physical state</b>	Liquid	<b>Relative density (Water = 1)</b>	Not Available
<b>Odour</b>	Not Available	<b>Partition coefficient n-octanol / water</b>	Not Available
<b>Odour threshold</b>	Not Available	<b>Auto-ignition temperature (°C)</b>	Not Available
<b>pH (as supplied)</b>	Not Available	<b>Decomposition temperature (°C)</b>	Not Available
<b>Melting point / freezing point (°C)</b>	Not Available	<b>Viscosity (cSt)</b>	Not Available
<b>Initial boiling point and boiling range (°C)</b>	Not Available	<b>Molecular weight (g/mol)</b>	Not Available
<b>Flash point (°C)</b>	Not Available	<b>Taste</b>	Not Available
<b>Evaporation rate</b>	Not Available	<b>Explosive properties</b>	Not Available
<b>Flammability</b>	Not Available	<b>Oxidising properties</b>	Not Available
<b>Upper Explosive Limit (%)</b>	Not Available	<b>Surface Tension (dyn/cm or mN/m)</b>	Not Available

Lower Explosive Limit (%)	Not Available	Volatile Component (%vol)	Not Available
Vapour pressure (kPa)	Not Available	Gas group	Not Available
Solubility in water	Immiscible	pH as a solution (1%)	Not Available
Vapour density (Air = 1)	Not Available	VOC g/L	Not Available
Nanoform Solubility	Not Available	Nanoform Particle Characteristics	Not Available
Particle Size	Not Available		

## 9.2. Other information

Not Available

## SECTION 10. Stability and reactivity

10.1.Reactivity	See section 7.2
10.2. Chemical stability	Product is considered stable and hazardous polymerisation will not occur.
10.3. Possibility of hazardous reactions	See section 7.2
10.4. Conditions to avoid	See section 7.2
10.5. Incompatible materials	See section 7.2
10.6. Hazardous decomposition products	See section 5.3

## SECTION 11. Toxicological information

### 11.1. Information on toxicological effects

Inhaled	The material is not thought to produce adverse health effects or irritation of the respiratory tract (as classified by EC Directives using animal models). Nevertheless, good hygiene practice requires that exposure be kept to a minimum and that suitable control measures be used in an occupational setting.
Ingestion	The material has <b>NOT</b> been classified by EC Directives or other classification systems as 'harmful by ingestion'. This is because of the lack of corroborating animal or human evidence.
Skin Contact	The material is not thought to produce adverse health effects or skin irritation following contact (as classified by EC Directives using animal models). Nevertheless, good hygiene practice requires that exposure be kept to a minimum and that suitable gloves be used in an occupational setting.
Eye	Although the liquid is not thought to be an irritant (as classified by EC Directives), direct contact with the eye may produce transient discomfort characterised by tearing or conjunctival redness (as with windburn).
Chronic	Long-term exposure to the product is not thought to produce chronic effects adverse to the health (as classified by EC Directives using animal models); nevertheless exposure by all routes should be minimised as a matter of course.

Elution Buffer	<b>TOXICITY</b>	<b>IRRITATION</b>
	Not Available	Not Available
Tris (hydroxymethyl) aminomethane	<b>TOXICITY</b>	<b>IRRITATION</b>
	Dermal (rat) LD50 > 5000 mg/kg <sup>1</sup> Oral (rat) LD50 > 5000 mg/kg <sup>1</sup>	Eye: no adverse effect observed (not irritating) <sup>1</sup> Skin: no adverse effect observed (not irritating) <sup>1</sup>
<b>Legend:</b>	1. Value obtained from Europe ECHA Registered Substances - Acute toxicity 2. Value obtained from manufacturer's SDS. Unless otherwise specified data extracted from RTECS - Register of Toxic Effect of chemical Substances	

Tris (hydroxymethyl) aminomethane	<p>Asthma-like symptoms may continue for months or even years after exposure to the material ends. This may be due to a non-allergic condition known as reactive airways dysfunction syndrome (RADS) which can occur after exposure to high levels of highly irritating compound. Main criteria for diagnosing RADS include the absence of previous airways disease in a non-atopic individual, with sudden onset of persistent asthma-like symptoms within minutes to hours of a documented exposure to the irritant. Other criteria for diagnosis of RADS include a reversible airflow pattern on lung function tests, moderate to severe bronchial hyperreactivity on methacholine challenge testing, and the lack of minimal lymphocytic inflammation, without eosinophilia. RADS (or asthma) following an irritating inhalation is an infrequent disorder with rates related to the concentration of and duration of exposure to the irritating substance. On the other hand, industrial bronchitis is a disorder that occurs as a result of exposure due to high concentrations of irritating substance (often particles) and is completely reversible after exposure ceases. The disorder is characterized by difficulty breathing, cough and mucus production.</p> <p>TRIS AMINO and its surrogate chemicals have very little, if any, toxicity. They are mildly irritating to eyes at moderate concentrations, and do not cause allergic skin reactions. Ingestion of relatively high dosages can cause liver changes. Patients with decreased liver function should not be given these substances over extended treatment periods. They have been known to have a harmful effect on the foetus if taken during pregnancy.</p>
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Acute Toxicity	✘
Skin Irritation/Corrosion	✘
Serious Eye Damage/Irritation	✘
Respiratory or Skin sensitisation	✘
Mutagenicity	✘

Carcinogenicity	✘
Reproductivity	✘
STOT - Single Exposure	✘
STOT - Repeated Exposure	✘
Aspiration Hazard	✘

**Legend:** ✘ – Data either not available or does not fill the criteria for classification  
 ✔ – Data available to make classification

## 11.2. Information on other hazards

### 1. Endocrine Disruption Properties

Not Available

### 2. Other Information

See Section 11.1

## SECTION 12. Ecological information

### 12.1 Toxicity

Elution Buffer	Endpoint	Test duration (hr)	Species	Value	Source
	Not available	Not available	Not available	Not available	Not available
Tris (hydroxymethyl) aminomethane	Endpoint	Test Duration (hr)	Species	Value	Source
	NOEC(ECx)	72	Algae or other aquatic plants	100 mg/L	2
	EC50	72	Algae or other aquatic plants	397 mg/L	2
	Ec50	48	Crustacea	> 980 mg/L	2
<b>Legend:</b>	Extracted from 1. IUCLID Toxicity Data 2. Europe ECHA Registered Substances - Ecotoxicological Information - Aquatic Toxicity 4. US EPA, Ecotox database - Aquatic Toxicity Data 5. ECETOC Aquatic Hazard Assessment Data 6. NITE (Japan) - Bioconcentration Data 7. METI (Japan) - Bioconcentration Data 8. Vendor Data				

### 12.2. Persistence and degradability

Ingredient	Persistence: Water/Soil	Persistence: Air
Tris (hydroxymethyl) aminomethane	LOW	LOW

### 12.3. Bio accumulative potential

Ingredient	Bioaccumulation
Tris (hydroxymethyl) aminomethane	LOW (LogKOW = -1.5606)

### 12.4. Mobility in soil

Ingredient	Mobility
Tris (hydroxymethyl) aminomethane	HIGH (KOC = 1)

### 12.5. Results of PBT and vPvB assessment

	P	B	T
Relevant available data	Not Available	Not Available	Not Available
PBT	✘	✘	✘
vPvB	✘	✘	✘
PBT Criteria fulfilled?	No		
vPvB	No		

### 12.6. Endocrine Disruption Properties

Not Available

### 12.7. Other adverse effects

Not Available

**SECTION 13. Disposal considerations**

**13.1. Waste treatment methods**

<b>Product / Packaging disposal</b>	<p>Legislation addressing waste disposal requirements may differ by country, state and/ or territory. Each user must refer to laws operating in their area. In some areas, certain wastes must be tracked.</p> <p>A Hierarchy of Controls seems to be common - the user should investigate:</p> <ul style="list-style-type: none"> <li>▶ Reduction</li> <li>▶ Reuse</li> <li>▶ Recycling</li> <li>▶ Disposal (if all else fails)</li> </ul> <p>This material may be recycled if unused, or if it has not been contaminated so as to make it unsuitable for its intended use. If it has been contaminated, it may be possible to reclaim the product by filtration, distillation or some other means. Shelf life considerations should also be applied in making decisions of this type. Note that properties of a material may change in use, and recycling or reuse may not always be appropriate.</p> <ul style="list-style-type: none"> <li>▶ <b>DO NOT</b> allow wash water from cleaning or process equipment to enter drains.</li> <li>▶ It may be necessary to collect all wash water for treatment before disposal.</li> <li>▶ In all cases disposal to sewer may be subject to local laws and regulations and these should be considered first.</li> <li>▶ Where in doubt contact the responsible authority.</li> <li>▶ Recycle wherever possible.</li> <li>▶ Consult manufacturer for recycling options or consult local or regional waste management authority for disposal if no suitable treatment or disposal facility can be identified.</li> <li>▶ Dispose of by: burial in a land-fill specifically licensed to accept chemical and / or pharmaceutical wastes or incineration in a licensed apparatus (after admixture with suitable combustible material).</li> </ul> <p>▶ Decontaminate empty containers. Observe all label safeguards until containers are cleaned and destroyed.</p>
<b>Waste treatment options</b>	Not Available
<b>Sewage disposal options</b>	Not Available

**SECTION 14 Transport information**

**Labels Required**

<b>Marine Pollutant</b>	NO
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**Land transport (ADR): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS**

14.1. <b>UN number</b>	Not Applicable	
14.2. <b>UN proper shipping name</b>	Not Applicable	
14.3. <b>Transport hazard class(es)</b>	Class	Not Applicable
	Sub risk	Not Applicable
14.4. <b>Packing group</b>	Not Applicable	
14.5. <b>Environmental hazard</b>	Not Applicable	
14.6. <b>Special precautions for user</b>	Hazard identification (Kemler)	Not Applicable
	Classification code	Not Applicable
	Hazard Label	Not Applicable
	Special provisions	Not Applicable
	Limited quantity	Not Applicable
	Tunnel Restriction Code	Not Applicable

**Air transport (ICAO-IATA / DGR): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS**

14.1. <b>UN number</b>	Not Applicable	
14.2. <b>UN proper shipping name</b>	Not Applicable	
14.3. <b>Transport hazard class(es)</b>	ICAO/IATA Class	Not Applicable
	ICAO / IATA Sub risk	Not Applicable
	ERG Code	Not Applicable
14.4. <b>Packing group</b>	Not Applicable	
14.5. <b>Environmental hazard</b>	Not Applicable	
14.6. <b>Special precautions for user</b>	Special provisions	Not Applicable
	Cargo Only Packing Instructions	Not Applicable
	Cargo Only Maximum Qty / Pack	Not Applicable
	Passenger and Cargo Packing Instructions	Not Applicable
	Passenger and Cargo Maximum Qty / Pack	Not Applicable
	Passenger and Cargo Limited Quantity Packing Instructions	Not Applicable
	Passenger and Cargo Limited Maximum Qty / Pack	Not Applicable

**Sea transport (IMDG-Code / GGVSee): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS**

14.1. UN number	Not Applicable	
14.2. UN proper shipping name	Not Applicable	
14.3. Transport hazard class(es)	IMDG Class	Not Applicable
	IMDG Sub risk	Not Applicable
14.4. Packing group	Not Applicable	
14.5. Environmental hazard	Not Applicable	
14.6. Special precautions for user	EMS Number	Not Applicable
	Special provisions	Not Applicable
	Limited Quantities	Not Applicable

**Inland waterways transport (ADN): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS**

14.1. UN number	Not Applicable	
14.2. UN proper shipping name	Not Applicable	
14.3. Transport hazard class(es)	Not applicable	Not Applicable
14.4. Packing group	Not applicable	
14.5. Environmental hazard	Not applicable	
14.6 Special precautions for user	Classification code	Not Applicable
	Special provisions	Not Applicable
	Limited quantity	Not Applicable
	Equipment required	Not Applicable
	Fire cones number	Not Applicable

**14.7. Transport in bulk according to Annex II of MARPOL and the IBC code**

Not Applicable

**14.8. Transport in bulk in accordance with MARPOL Annex V and the IMSBC Code**

Product name	Group
Tris (hydroxymethyl) aminomethane	Not Available

**14.9. Transport in bulk in accordance with the ICG Code**

Product name	Ship Type
Tris (hydroxymethyl) aminomethane	Not Available

**SECTION 15. Regulatory information****15.1. Safety, health and environmental regulations / legislation specific for the substance or mixture****Tris (hydroxymethyl) aminomethane is found on the following regulator lists**

Europe EC Inventory	FEI Equine Prohibited Substances List – Controlled Medication
European Union – European Inventory of Existing Commercial Chemical Substances (EINICS)	FEI Equine Prohibited Substances List 9ESPL)

This safety data sheet is in compliance with the following EU legislation and its adaptations - as far as applicable - : Directives 98/24/EC, - 92/85/EEC, - 94/33/EC, - 2008/98/EC, - 2010/75/EU; Commission Regulation (EU) 2020/878; Regulation (EC) No 1272/2008 as updated through ATPs.

**15.2. Chemical safety assessment**

No Chemical Safety Assessment has been carried out for this substance/mixture by the supplier.

**ECHA SUMMARY**

Ingredient	CAS number	Index No.	ECHA Dossier
Tris (hydroxymethyl) aminomethane	77-86-1	Not Available	Not Available

Harmonisation (C&L Inventory)	Hazard Class and Category Code(s)	Pictograms Signal Word Code(s)	Hazard Statement Code(s)
1	Skin Irrit. 2, Eye Irrit. 2 STOT SE 3	GHS07, Wng	H315, H319, H335
2	Skin Irrit. 2, Eye Irrit. 2A, STOT SE 3, Acute Tox 4, Acute Tox 4	GHS07, Wng	H312, H315, H319, H332, H335
Harmonisation Code	1 = The most prevalent classification 2 = The most sever classification		

**National Inventory Status**

National Inventory	Status
Australia - AIIC / Australia Non-Industrial Use	Yes
Canada - DSL	Yes
Canada - NDSL	No (Tris (hydroxymethyl) aminomethane )
China - IECSC	Yes
Europe - EINEC / ELINCS / NLP	Yes
Japan - ENCS	Yes
Korea - KECI	Yes
New Zealand - NZIoC	Yes
Philippines - PICCS	Yes
USA - TSCA	Yes
Taiwan - TCSI	Yes
Mexico - INSQ	Yes
Vietnam - NCI	Yes
Russia - FBEPH	Yes

**Legend:**  
 Yes = All CAS declared ingredients are on the inventory  
 No = One or more of the CAS listed ingredients are not on the inventory. These ingredients may be exempt or will require registration.

**SECTION 16. Other information****Full text Risk and Hazard codes**

H312	Harmful in contact with skin
H315	Causes skin irritation
H319	Causes serious eye irritation
H332	Harmful if inhaled
H335	May cause respiratory irritation

**Version Summary**

Version	Date of Update	Sections Updated
1	29/APR/2024	Initial version

**Other information**

Classification of the preparation and its individual components has drawn on official and authoritative sources as well as independent review by the Chemwatch Classification committee using available literature references.

The SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings. Risks may be determined by reference to Exposures Scenarios. Scale of use, frequency of use and current or available engineering controls must be considered.

For detailed advice on Personal Protective Equipment, refer to the following EU CEN Standards:

- EN 166 Personal eye-protection
- EN 340 Protective clothing
- EN 374 Protective gloves against chemicals and micro-organisms
- EN 13832 Footwear protecting against chemicals
- EN 133 Respiratory protective devices

**Definitions and abbreviations**

ACGIH	American Conference of Governmental Industrial Hygienists
AIIC	Australian Inventory of Industrial Chemicals
BCF:	Bio Concentration Factors
BEI	Biological Exposure Index
DSL	Domestic Substances List
EINECS	European Inventory of Existing Commercial chemical Substances
ELINCS	European List of Notified Chemical Substances
ENCS	Existing and New Chemical Substances Inventory
ES	Exposure Standard
FBEPH	Russian Register of Potentially Hazardous Chemical and Biological Substances
IARC	International Agency for Research on Cancer
IECSC	Inventory of Existing Chemical Substance in China
IDLH	Immediately Dangerous to Life or Health Concentrations
INSQ	Inventario Nacional de Sustancias Químicas
KECI:	Korea Existing Chemicals Inventory
LOAEL	Lowest Observed Adverse Effect Level
LOD	Limit Of Detection
NCI	National Chemical Inventory
NDSL	Non-Domestic Substances List
NLP	No-Longer Polymers
NOAEL	No Observed Adverse Effect Level
NZIoC:	New Zealand Inventory of Chemicals
OSF	Odour Safety Factor
OTV	Odour Threshold Value
PC	Permissible Concentration
PC-STEL	Permissible Concentration Short Term Exposure Limit

PICCS	Philippine Inventory of Chemicals and Chemical Substances
STEL	Short Term Exposure Limit
TCSI	Taiwan Chemical Substance Inventory
TEEL	Temporary Emergency Exposure Limit
TLV	Threshold Limit Value
TSCA	Toxic Substances Control Act
TWA	Time Weighted Average

## Deckblatt zum Sicherheitsdatenblatt

Erstellt am 02.03.2026 Version 01.00

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### Produktidentifikation:

Handelsname	Elution Buffer
Verwendungszweck	Ausschliesslich und nur für den Laborgebrauch zu verwenden. Nur für Forschungszwecke geeignet, Diagnostikzwecke sind von der Verwendung ausgeschlossen.

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### Lieferant, der das Sicherheitsdatenblatt übermittelt:

INTEGRA Biosciences AG  
Tardisstrasse 201,  
7205 Zizers, Schweiz  
[www.integra-biosciences.com](http://www.integra-biosciences.com)  
Tel.: +41 (0)81 286 95 30  
[info-ch@integra-biosciences.com](mailto:info-ch@integra-biosciences.com)

**Nationale Notfallnummer: 145** (24h erreichbar, Tox Info Suisse, Zürich; für Anrufe aus der Schweiz, Auskünfte auf Deutsch, Französisch und Italienisch)

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### Informationen für die Verwender betreffend:

#### Abschnitt 7 – Handhabung und Lagerung

Allfällig relevante schweizerische Anforderungen des Arbeitnehmerschutzes und des Umweltschutzes betreffend die Handhabung und Lagerung sind zu berücksichtigen.

#### Abschnitt 8 – Begrenzung und Überwachung der Exposition / Persönliche Schutzausrüstung

Die im Sicherheitsdatenblatt angegebenen Grenzwerte basieren auf den einschlägigen EG-/EU-Vorschriften. Für den Arbeitnehmerschutz in der Schweiz sind zusätzlich die Vorgaben der SUVA zu berücksichtigen. Gegebenenfalls ist die persönliche Schutzausrüstung zu spezifizieren.

#### Abschnitt 13 – Hinweise zur Entsorgung

Hinweise zur Entsorgung sind gemäß der Technischen Verordnung über Abfälle (TVA), der Verordnung über den Verkehr mit Abfällen (VeVA) sowie der Verordnung des UVEK über Listen zum Verkehr mit Abfällen (LVA) zu berücksichtigen.

#### Abschnitt 15 – Rechtsvorschriften

Allfällig relevante schweizerische Vorschriften, z. B. betreffend Luftreinhalte-Verordnung, Störfallverordnung (Mengenschwellen), Abgabevorschriften, Verwendungsbeschränkungen oder -verbote sowie allfällige Zulassungen (z. B. Biozidprodukte), sind zu berücksichtigen.



Version No: 1

Issue date: 29/APR/2024

Revision date: Not Applicable

Safety Data Sheet (Conforms to Annex II of REACH (1907/2006) - Regulation 2020/878)

**SECTION 1. Identification of the substance / mixture and of the company / undertaking****1.1. Product Identifier**

Product name	Elution Buffer
Synonyms	Not Available
Other means of identification	Not Available

**1.2. Relevant identified uses of the substance or mixture and uses advised against**

Relevant identified uses	Laboratory use.
Uses advised against	Not Applicable

**1.3. Details of the manufacturer or supplier of the safety data sheet**

Registered company name	CleanNA
Address	Coenecoop 75, 2741 PH, Waddinxveen, The Netherlands
Telephone	+31 (0) 182 22 33 50
Fax	+31 (0) 182 22 33 98
Website	<a href="http://www.cleanna.com">www.cleanna.com</a>
Email	<a href="mailto:info@cleanna.com">info@cleanna.com</a>

**1.4. Emergency telephone number**

Emergency telephone numbers	112 (European emergency number)
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**SECTION 2. Hazards identification****2.1. Classification of the substance or mixture**

Classification according to regulation (EC) No 1272/2008 [CLP] and amendments	Not Applicable
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**2.2. Label elements**

Hazard pictogram(s)	Not Applicable
Signal word	Not Applicable

**Hazard statement(s)**

Not Applicable

**Supplementary statement(s)**

Not Applicable

**Precautionary statement(s) Prevention**

Not Applicable

**Precautionary statement(s) Response**

Not Applicable

**Precautionary statement(s) Storage**

Not Applicable

**Precautionary statement(s) Disposal**

Not Applicable

**2.3. Other hazards**

REACH – Art. 57-59: The mixture does not contain Substances of Very High Concern (SVHC) at the SDS issue date.

**SECTION 3. Composition / information on ingredients****3.1 Substances**

See 'Composition on ingredients' in Section 3.2

**3.2 Mixtures**

1. CAS No 2. EC No 3. Index No 4. REACH No	%[weight]	Name	Classification according to regulation (EC) No 1272/2008 [CLP] and amendments	SCL / M-Factor	Nanoform Particle Characteristics
1. 77-86-1 2. 201-064-4 3. Not Available 4. Not Available	0.1 - 1	Tris (hydroxymethyl) aminomethane	Skin Corrosion/Irritation – Category 2 Serious Eye Damage/Eye Irritation – Category 2 Specific Target Toxicity – Single Exposure (Respiratory Tract Irritation – Category 3 H315, H319, H335 <sup>1</sup>	Not Available	Not Available
<b>Legend:</b>	2. Classification drawn from Regulation (EU) No 1272/2008 - Annex VI; 3. Classification drawn from C&L; * EU IOELVs available; [e] Substance identified as having endocrine disrupting properties				

**SECTION 4. First aid measures****4.1. Description of first aid measures**

<b>Eye Contact</b>	<p>If this product comes in contact with eyes:</p> <ul style="list-style-type: none"> <li>▶ Wash out immediately with water.</li> <li>▶ If irritation continues, seek medical attention.</li> <li>▶ Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.</li> </ul>
<b>Skin Contact</b>	<p>If skin or hair contact occurs:</p> <ul style="list-style-type: none"> <li>▶ Flush skin and hair with running water (and soap if available).</li> <li>▶ Seek medical attention in event of irritation.</li> </ul>
<b>Inhalation</b>	<ul style="list-style-type: none"> <li>▶ If fumes, aerosols or combustion products are inhaled remove from contaminated area.</li> <li>▶ Other measures are usually unnecessary.</li> </ul>
<b>Ingestion</b>	<ul style="list-style-type: none"> <li>▶ Immediately give a glass of water.</li> <li>▶ First aid is not generally required. If in doubt, contact a Poisons Information Centre or a doctor.</li> </ul>

**4.2 Most important symptoms and effects, both acute and delayed**

See Section 11

**4.3. Indication of any immediate medical attention and special treatment needed**

Treat symptomatically

**SECTION 5. Firefighting measures****5.1 Extinguishing media**

- ▶ There is no restriction on the type of extinguisher which may be used.
- ▶ Use extinguishing media suitable for surrounding area.

**5.2 Special hazards arising from the substrate or mixture**

<b>Fire Incompatibility</b>	None known
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**5.3. Advice for firefighters**

<b>Fire Fighting</b>	<ul style="list-style-type: none"> <li>▶ Use water delivered as a fine spray to control fire and cool adjacent area.</li> <li>▶ <b>Do not</b> approach containers suspected to be hot.</li> <li>▶ Cool fire exposed containers with water spray from a protected location.</li> <li>▶ If safe to do so, remove containers from path of fire.</li> <li>▶ Equipment should be thoroughly decontaminated after use.</li> </ul>
<b>Fire/Explosion Hazard</b>	<ul style="list-style-type: none"> <li>▶ Non-combustible.</li> <li>▶ Not considered a significant fire risk, however containers may burn.</li> </ul>

**SECTION 6. Accidental release measures****6.1 Personal precautions, protective equipment and emergency procedures**

See section 8

**6.2 Environmental precautions**

See section 12

**6.3 Methods and material for containment and cleaning up**

<b>Minor Spills</b>	<ul style="list-style-type: none"> <li>▶ Clean up all spills immediately.</li> <li>▶ Avoid breathing vapours and contact with skin and eyes.</li> <li>▶ Control personal contact with the substance, by using protective equipment.</li> <li>▶ Contain and absorb spill with sand, earth, inert material or vermiculite.</li> <li>▶ Wipe up.</li> <li>▶ Place in a suitable, labelled container for waste disposal.</li> </ul>
<b>Major Spills</b>	<ul style="list-style-type: none"> <li>▶ Clear area of personnel and move upwind.</li> <li>▶ Alert Fire Brigade and tell them location and nature of hazard.</li> <li>▶ Control personal contact with the substance, by using protective equipment.</li> <li>▶ Prevent spillage from entering drains, sewers or water courses.</li> <li>▶ Recover product wherever possible.</li> <li>▶ Put residues in labelled containers for disposal.</li> <li>▶ If contamination of drains or waterways occurs, advise emergency services.</li> </ul>

**6.4. Reference to other sections**

Personal Protective Equipment advice is contained in Section 8 of the SDS.

**SECTION 7. Handling and storage****7.1. Precautions for safe handling**

<b>Safe handling</b>	<ul style="list-style-type: none"> <li>▶ Limit all unnecessary personal contact.</li> <li>▶ Wear protective clothing when risk of exposure occurs.</li> <li>▶ Use in a well-ventilated area.</li> <li>▶ Avoid contact with incompatible materials.</li> <li>▶ When handling, <b>DO NOT</b> eat, drink or smoke.</li> <li>▶ Keep containers securely sealed when not in use.</li> <li>▶ Avoid physical damage to containers.</li> <li>▶ Always wash hands with soap and water after handling.</li> <li>▶ Work clothes should be laundered separately.</li> <li>▶ Use good occupational work practice.</li> <li>▶ Observe manufacturer's storage and handling recommendations contained within this SDS.</li> <li>▶ Atmosphere should be regularly checked against established exposure standards to ensure safe working conditions are maintained.</li> </ul>
<b>Fire and explosion protection</b>	See section 5
<b>Other information</b>	None known

**7.2. Conditions for safe storage, including any incompatibilities**

<b>Suitable container</b>	<ul style="list-style-type: none"> <li>▶ Polyethylene or polypropylene container.</li> <li>▶ Packing as recommended by manufacturer.</li> <li>▶ Check all containers are clearly labelled and free from leaks.</li> </ul>
<b>Storage incompatibility</b>	Avoid contamination of water, foodstuffs, feed or seed.
<b>Hazard categories in accordance with Regulation (EC) No 1272/2008</b>	Not available
<b>Qualifying quantity (tonnes) of dangerous substances as referred to in Article 3(10) for the application of</b>	Not available

**7.3. Specific end use(s)**

See section 1.2

**SECTION 8. Exposure controls / personal protection**

**8.1. Control parameters**

Ingredient	DNELs Exposure Pattern Worker			PNECs Compartment
Tris (hydroxymethyl) aminomethane	Dermal	166.7 mg/kg bw/day	(Systemic, Chronic)	300 mg/L (STP)
	Inhalation	117.5 mg/m <sup>3</sup>	(Systemic, Chronic)	
	Dermal	83.3 mg/kg bw/day	(Systemic, Chronic)	
	Inhalation	29 mg/m <sup>3</sup>	(Systemic, Chronic)	
	Oral	8.3 mg/kg bw/day	(Systemic, Chronic)	

\* Values for General Population

**Occupational Exposure Limits (OEL)**

**INGREDIENT DATA**

Source	Ingredient	Material name	TWA	STEL	Peak	Notes
Not Available	Not Available	Not Available	Not Available	Not Available	Not Available	Not Available

**Emergency Limits**

Ingredient	TEEL-1	TEEL-2	TEEL-3
Tris (hydroxymethyl) aminomethane	18 mg/m <sup>3</sup>	190 mg/m <sup>3</sup>	1,200 v

Ingredient	Original IDLH	Revised IDLH
Tris (hydroxymethyl) aminomethane	Not Available	Not Available

**Occupational Exposure Banding**

Ingredient	Occupational Exposure Band rating	Occupational Exposure Band Limit
Tris (hydroxymethyl) aminomethane	E	<= 0.01 mg/m <sup>3</sup>

**Notes;** Occupational exposure banding is a process of assigning chemicals into specific categories or bands based on a chemical's potency and the adverse health outcomes associated with exposure. The output of this process is an occupational exposure band (OEB), which corresponds to a range of exposure concentrations that are expected to protect worker health.

**8.2. Exposure controls**

**8.2.1 Appropriate engineering controls**

Engineering controls are used to remove a hazard or place a barrier between the worker and the hazard. Well-designed engineering controls can be highly effective in protecting workers and will typically be independent of worker interactions to provide this high level of protection.

The basic types of engineering controls are:

Process controls which involve changing the way a job activity or process is done to reduce the risk.

Enclosure and/or isolation of emission source which keeps a selected hazard "physically" away from the worker and ventilation that strategically "adds" and "removes" air in the work environment. Ventilation can remove or dilute an air contaminant if designed properly. The design of a ventilation system must match the particular process and chemical or contaminant in use.

Employers may need to use multiple types of controls to prevent employee overexposure.

General exhaust is adequate under normal operating conditions. If risk of overexposure exists, wear SAA approved respirator. Correct fit is essential to obtain adequate protection. Provide adequate ventilation in warehouse or closed storage areas. Air contaminants generated in the workplace possess varying 'escape' velocities which, in turn, determine the 'capture velocities' of fresh circulating air required to effectively remove the contaminant.

Type of contaminant	Air Speed
Solvent, vapours, degreasing etc. evaporating from tank (in still air)	0.25 – 0.5 m/s (50 – 100 f/min)
Aerosols, fumes from pouring operations, intermittent container filling, low speed conveyer transfers, welding, spray drift, plating acid fumes, pickling (released at low velocity into zone of active generation)	0.5 – 1 m/s (100 – 200 f/min)
Direct spray, spray painting in shallow booths, drum filling, conveyer loading, crusher debts, gas discharge (active generation into zone of rapid air motion)	1 – 2.5 m/s (200 – 500 f/min)
Grinding, abrasive blasting, tumbling, high speed generated dusts (released at high velocity into zone of very high rapid air motion)	w.5 – 10 m/s (500 – 200 f/min)

Within each range the appropriate value depends to:

Lower end of range	Upper end of range
1: Room air currents minimal of favourable to capture	1: Disturbing room air currents
2: Contaminants of low toxicity or of nuisance value only	2: Contaminants of high toxicity
3: Intermittent, low production	3: High Production, heavy use
4: Large hood or large air mass in motion	4: Small hood – local control only

Simple theory shows that air velocity falls rapidly with distance away from the opening of a simple extraction pipe. Velocity generally decreases with the square of distance from the extraction point (in simple cases). Therefore the air speed at the extraction point should be adjusted, accordingly, after reference to distance from the contaminating source. The air velocity at the extraction fan, for example, should be a minimum of 1-2 m/s (200-400 f/min) for extraction of solvents generated in a tank 2 meters distant from the extraction point. Other mechanical considerations, producing performance deficits within the extraction apparatus, make it essential that theoretical air velocities are multiplied by factors of 10 or more when extraction systems are installed or used.

**8.2.2. Personal protection**



**Eye and face protection**

- ▶ Safety glasses with side shields
- ▶ Chemical goggles.
- ▶ Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of lenses or restrictions on use, should be created for each workplace or task. This should include a review of lens absorption and adsorption

for the class of chemicals in use and an account of injury experience. Medical and first-aid personnel should be trained in their removal and suitable equipment should be readily available. In the event of chemical exposure, begin eye irrigation immediately and remove contact lens as soon as practicable. Lens should be removed at the first signs of eye redness or irritation - lens should be removed in a clean environment only after workers have washed hands thoroughly. [CDC NIOSH Current Intelligence Bulletin 59], [AS/NZS 1336 or national equivalent]

**Skin protection**

See Hand protection below

Wear general protective gloves, e.g. light weight rubber gloves.

The selection of suitable gloves does not only depend on the material, but also on further marks of quality which vary from manufacturer to manufacturer. Where the chemical is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

The exact break through time for substances has to be obtained from the manufacturer of the protective gloves and has to be observed when making a final choice.

Personal hygiene is a key element of effective hand care. Gloves must only be worn on clean hands. After using gloves, hands should be washed and dried thoroughly. Application of a non-perfumed moisturiser is recommended.

Suitability and durability of glove type is dependent on usage. Important factors in the selection of gloves include:

- frequency and duration of contact,
- chemical resistance of glove material,
- glove thickness and
- dexterity

Select gloves tested to a relevant standard (e.g. Europe EN 374, US F739, AS/NZS 2161.1 or national equivalent).

· When prolonged or frequently repeated contact may occur, a glove with a protection class of 5 or higher (breakthrough time greater than 240 minutes according to EN 374, AS/NZS 2161.10.1 or national equivalent) is recommended.

· When only brief contact is expected, a glove with a protection class of 3 or higher (breakthrough time greater than 60 minutes according to EN 374, AS/NZS 2161.10.1 or national equivalent) is recommended.

**Hand / feet protection**

Some glove polymer types are less affected by movement and this should be taken into account when considering gloves for long-term use.

· Contaminated gloves should be replaced.

As defined in ASTM F-739-96 in any application, gloves are rated as:

- Excellent when breakthrough time > 480 min
- Good when breakthrough time > 20 min
- Fair when breakthrough time < 20 min
- Poor when glove material degrades

For general applications, gloves with a thickness typically greater than 0.35 mm, are recommended.

It should be emphasised that glove thickness is not necessarily a good predictor of glove resistance to a specific chemical, as the permeation efficiency of the glove will be dependent on the exact composition of the glove material. Therefore, glove selection should also be based on consideration of the task requirements and knowledge of breakthrough times.

Glove thickness may also vary depending on the glove manufacturer, the glove type and the glove model. Therefore, the manufacturers technical data should always be taken into account to ensure selection of the most appropriate glove for the task.

Note: Depending on the activity being conducted, gloves of varying thickness may be required for specific tasks. For example:

- Thinner gloves (down to 0.1 mm or less) may be required where a high degree of manual dexterity is needed. However, these gloves are only likely to give short duration protection and would normally be just for single use applications, then disposed of.
- Thicker gloves (up to 3 mm or more) may be required where there is a mechanical (as well as a chemical) risk i.e. where there is abrasion or puncture potential

Gloves must only be worn on clean hands. After using gloves, hands should be washed and dried thoroughly. Application of a non-perfumed moisturiser is recommended.

**Body protection**

See Other protection below

**Other protection**

No special equipment needed when handling small quantities.

**OTHERWISE:**

- ▶ Overall.
- ▶ Barrier cream.
- ▶ Eyewash unit.

**8.2.3. Environmental exposure controls**

See section 12

**SECTION 9. Physical and chemical properties****9.1. Information on basic physical and chemical properties**

<b>Appearance</b>	Not Available		
<b>Physical state</b>	Liquid	<b>Relative density (Water = 1)</b>	Not Available
<b>Odour</b>	Not Available	<b>Partition coefficient n-octanol / water</b>	Not Available
<b>Odour threshold</b>	Not Available	<b>Auto-ignition temperature (°C)</b>	Not Available
<b>pH (as supplied)</b>	Not Available	<b>Decomposition temperature (°C)</b>	Not Available
<b>Melting point / freezing point (°C)</b>	Not Available	<b>Viscosity (cSt)</b>	Not Available
<b>Initial boiling point and boiling range (°C)</b>	Not Available	<b>Molecular weight (g/mol)</b>	Not Available
<b>Flash point (°C)</b>	Not Available	<b>Taste</b>	Not Available
<b>Evaporation rate</b>	Not Available	<b>Explosive properties</b>	Not Available
<b>Flammability</b>	Not Available	<b>Oxidising properties</b>	Not Available
<b>Upper Explosive Limit (%)</b>	Not Available	<b>Surface Tension (dyn/cm or mN/m)</b>	Not Available

Lower Explosive Limit (%)	Not Available	Volatile Component (%vol)	Not Available
Vapour pressure (kPa)	Not Available	Gas group	Not Available
Solubility in water	Immiscible	pH as a solution (1%)	Not Available
Vapour density (Air = 1)	Not Available	VOC g/L	Not Available
Nanoform Solubility	Not Available	Nanoform Particle Characteristics	Not Available
Particle Size	Not Available		

## 9.2. Other information

Not Available

## SECTION 10. Stability and reactivity

10.1.Reactivity	See section 7.2
10.2. Chemical stability	Product is considered stable and hazardous polymerisation will not occur.
10.3. Possibility of hazardous reactions	See section 7.2
10.4. Conditions to avoid	See section 7.2
10.5. Incompatible materials	See section 7.2
10.6. Hazardous decomposition products	See section 5.3

## SECTION 11. Toxicological information

### 11.1. Information on toxicological effects

Inhaled	The material is not thought to produce adverse health effects or irritation of the respiratory tract (as classified by EC Directives using animal models). Nevertheless, good hygiene practice requires that exposure be kept to a minimum and that suitable control measures be used in an occupational setting.
Ingestion	The material has <b>NOT</b> been classified by EC Directives or other classification systems as 'harmful by ingestion'. This is because of the lack of corroborating animal or human evidence.
Skin Contact	The material is not thought to produce adverse health effects or skin irritation following contact (as classified by EC Directives using animal models). Nevertheless, good hygiene practice requires that exposure be kept to a minimum and that suitable gloves be used in an occupational setting.
Eye	Although the liquid is not thought to be an irritant (as classified by EC Directives), direct contact with the eye may produce transient discomfort characterised by tearing or conjunctival redness (as with windburn).
Chronic	Long-term exposure to the product is not thought to produce chronic effects adverse to the health (as classified by EC Directives using animal models); nevertheless exposure by all routes should be minimised as a matter of course.

Elution Buffer	<b>TOXICITY</b>	<b>IRRITATION</b>
	Not Available	Not Available
Tris (hydroxymethyl) aminomethane	<b>TOXICITY</b>	<b>IRRITATION</b>
	Dermal (rat) LD50 > 5000 mg/kg <sup>1</sup> Oral (rat) LD50 > 5000 mg/kg <sup>1</sup>	Eye: no adverse effect observed (not irritating) <sup>1</sup> Skin: no adverse effect observed (not irritating) <sup>1</sup>
<b>Legend:</b>	1. Value obtained from Europe ECHA Registered Substances - Acute toxicity 2. Value obtained from manufacturer's SDS. Unless otherwise specified data extracted from RTECS - Register of Toxic Effect of chemical Substances	

Tris (hydroxymethyl) aminomethane	<p>Asthma-like symptoms may continue for months or even years after exposure to the material ends. This may be due to a non-allergic condition known as reactive airways dysfunction syndrome (RADS) which can occur after exposure to high levels of highly irritating compound. Main criteria for diagnosing RADS include the absence of previous airways disease in a non-atopic individual, with sudden onset of persistent asthma-like symptoms within minutes to hours of a documented exposure to the irritant. Other criteria for diagnosis of RADS include a reversible airflow pattern on lung function tests, moderate to severe bronchial hyperreactivity on methacholine challenge testing, and the lack of minimal lymphocytic inflammation, without eosinophilia. RADS (or asthma) following an irritating inhalation is an infrequent disorder with rates related to the concentration of and duration of exposure to the irritating substance. On the other hand, industrial bronchitis is a disorder that occurs as a result of exposure due to high concentrations of irritating substance (often particles) and is completely reversible after exposure ceases. The disorder is characterized by difficulty breathing, cough and mucus production.</p> <p>TRIS AMINO and its surrogate chemicals have very little, if any, toxicity. They are mildly irritating to eyes at moderate concentrations, and do not cause allergic skin reactions. Ingestion of relatively high dosages can cause liver changes. Patients with decreased liver function should not be given these substances over extended treatment periods. They have been known to have a harmful effect on the foetus if taken during pregnancy.</p>
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Acute Toxicity	✗
Skin Irritation/Corrosion	✗
Serious Eye Damage/Irritation	✗
Respiratory or Skin sensitisation	✗
Mutagenicity	✗

Carcinogenicity	✗
Reproductivity	✗
STOT - Single Exposure	✗
STOT - Repeated Exposure	✗
Aspiration Hazard	✗

**Legend:** ✗ – Data either not available or does not fill the criteria for classification  
 ✓ – Data available to make classification

## 11.2. Information on other hazards

### 1. Endocrine Disruption Properties

Not Available

### 2. Other Information

See Section 11.1

## SECTION 12. Ecological information

### 12.1 Toxicity

Elution Buffer	Endpoint	Test duration (hr)	Species	Value	Source
	Not available	Not available	Not available	Not available	Not available
Tris (hydroxymethyl) aminomethane	Endpoint	Test Duration (hr)	Species	Value	Source
	NOEC(ECx)	72	Algae or other aquatic plants	100 mg/L	2
	EC50	72	Algae or other aquatic plants	397 mg/L	2
	Ec50	48	Crustacea	> 980 mg/L	2
<b>Legend:</b>	Extracted from 1. IUCLID Toxicity Data 2. Europe ECHA Registered Substances - Ecotoxicological Information - Aquatic Toxicity 4. US EPA, Ecotox database - Aquatic Toxicity Data 5. ECETOC Aquatic Hazard Assessment Data 6. NITE (Japan) - Bioconcentration Data 7. METI (Japan) - Bioconcentration Data 8. Vendor Data				

### 12.2. Persistence and degradability

Ingredient	Persistence: Water/Soil	Persistence: Air
Tris (hydroxymethyl) aminomethane	LOW	LOW

### 12.3. Bio accumulative potential

Ingredient	Bioaccumulation
Tris (hydroxymethyl) aminomethane	LOW (LogKOW = -1.5606)

### 12.4. Mobility in soil

Ingredient	Mobility
Tris (hydroxymethyl) aminomethane	HIGH (KOC = 1)

### 12.5. Results of PBT and vPvB assessment

	P	B	T
Relevant available data	Not Available	Not Available	Not Available
PBT	✗	✗	✗
vPvB	✗	✗	✗
PBT Criteria fulfilled?	No		
vPvB	No		

### 12.6. Endocrine Disruption Properties

Not Available

### 12.7. Other adverse effects

Not Available

**SECTION 13. Disposal considerations**

**13.1. Waste treatment methods**

<b>Product / Packaging disposal</b>	<p>Legislation addressing waste disposal requirements may differ by country, state and/ or territory. Each user must refer to laws operating in their area. In some areas, certain wastes must be tracked.</p> <p>A Hierarchy of Controls seems to be common - the user should investigate:</p> <ul style="list-style-type: none"> <li>▶ Reduction</li> <li>▶ Reuse</li> <li>▶ Recycling</li> <li>▶ Disposal (if all else fails)</li> </ul> <p>This material may be recycled if unused, or if it has not been contaminated so as to make it unsuitable for its intended use. If it has been contaminated, it may be possible to reclaim the product by filtration, distillation or some other means. Shelf life considerations should also be applied in making decisions of this type. Note that properties of a material may change in use, and recycling or reuse may not always be appropriate.</p> <ul style="list-style-type: none"> <li>▶ <b>DO NOT</b> allow wash water from cleaning or process equipment to enter drains.</li> <li>▶ It may be necessary to collect all wash water for treatment before disposal.</li> <li>▶ In all cases disposal to sewer may be subject to local laws and regulations and these should be considered first.</li> <li>▶ Where in doubt contact the responsible authority.</li> <li>▶ Recycle wherever possible.</li> <li>▶ Consult manufacturer for recycling options or consult local or regional waste management authority for disposal if no suitable treatment or disposal facility can be identified.</li> <li>▶ Dispose of by: burial in a land-fill specifically licensed to accept chemical and / or pharmaceutical wastes or incineration in a licensed apparatus (after admixture with suitable combustible material).</li> </ul> <p>▶ Decontaminate empty containers. Observe all label safeguards until containers are cleaned and destroyed.</p>
<b>Waste treatment options</b>	Not Available
<b>Sewage disposal options</b>	Not Available

**SECTION 14 Transport information**

**Labels Required**

<b>Marine Pollutant</b>	NO
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**Land transport (ADR): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS**

14.1. <b>UN number</b>	Not Applicable	
14.2. <b>UN proper shipping name</b>	Not Applicable	
14.3. <b>Transport hazard class(es)</b>	Class	Not Applicable
	Sub risk	Not Applicable
14.4. <b>Packing group</b>	Not Applicable	
14.5. <b>Environmental hazard</b>	Not Applicable	
14.6. <b>Special precautions for user</b>	Hazard identification (Kemler)	Not Applicable
	Classification code	Not Applicable
	Hazard Label	Not Applicable
	Special provisions	Not Applicable
	Limited quantity	Not Applicable
	Tunnel Restriction Code	Not Applicable

**Air transport (ICAO-IATA / DGR): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS**

14.1. <b>UN number</b>	Not Applicable	
14.2. <b>UN proper shipping name</b>	Not Applicable	
14.3. <b>Transport hazard class(es)</b>	ICAO/IATA Class	Not Applicable
	ICAO / IATA Sub risk	Not Applicable
	ERG Code	Not Applicable
14.4. <b>Packing group</b>	Not Applicable	
14.5. <b>Environmental hazard</b>	Not Applicable	
14.6. <b>Special precautions for user</b>	Special provisions	Not Applicable
	Cargo Only Packing Instructions	Not Applicable
	Cargo Only Maximum Qty / Pack	Not Applicable
	Passenger and Cargo Packing Instructions	Not Applicable
	Passenger and Cargo Maximum Qty / Pack	Not Applicable
	Passenger and Cargo Limited Quantity Packing Instructions	Not Applicable
	Passenger and Cargo Limited Maximum Qty / Pack	Not Applicable

**Sea transport (IMDG-Code / GGVSee): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS**

14.1. UN number	Not Applicable	
14.2. UN proper shipping name	Not Applicable	
14.3. Transport hazard class(es)	IMDG Class	Not Applicable
	IMDG Sub risk	Not Applicable
14.4. Packing group	Not Applicable	
14.5. Environmental hazard	Not Applicable	
14.6. Special precautions for user	EMS Number	Not Applicable
	Special provisions	Not Applicable
	Limited Quantities	Not Applicable

**Inland waterways transport (ADN): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS**

14.1. UN number	Not Applicable	
14.2. UN proper shipping name	Not Applicable	
14.3. Transport hazard class(es)	Not applicable	Not Applicable
14.4. Packing group	Not applicable	
14.5. Environmental hazard	Not applicable	
14.6. Special precautions for user	Classification code	Not Applicable
	Special provisions	Not Applicable
	Limited quantity	Not Applicable
	Equipment required	Not Applicable
	Fire cones number	Not Applicable

**14.7. Transport in bulk according to Annex II of MARPOL and the IBC code**

Not Applicable

**14.8. Transport in bulk in accordance with MARPOL Annex V and the IMSBC Code**

Product name	Group
Tris (hydroxymethyl) aminomethane	Not Available

**14.9. Transport in bulk in accordance with the ICG Code**

Product name	Ship Type
Tris (hydroxymethyl) aminomethane	Not Available

**SECTION 15. Regulatory information****15.1. Safety, health and environmental regulations / legislation specific for the substance or mixture**

Tris (hydroxymethyl) aminomethane is found on the following regulator lists

Europe EC Inventory	FEI Equine Prohibited Substances List – Controlled Medication
European Union – European Inventory of Existing Commercial Chemical Substances (EINICS)	FEI Equine Prohibited Substances List 9ESPL)

This safety data sheet is in compliance with the following EU legislation and its adaptations - as far as applicable - : Directives 98/24/EC, - 92/85/EEC, - 94/33/EC, - 2008/98/EC, - 2010/75/EU; Commission Regulation (EU) 2020/878; Regulation (EC) No 1272/2008 as updated through ATPs.

**15.2. Chemical safety assessment**

No Chemical Safety Assessment has been carried out for this substance/mixture by the supplier.

**ECHA SUMMARY**

Ingredient	CAS number	Index No.	ECHA Dossier
Tris (hydroxymethyl) aminomethane	77-86-1	Not Available	Not Available
Harmonisation (C&L Inventory)	Hazard Class and Category Code(s)	Pictograms Signal Word Code(s)	Hazard Statement Code(s)
1	Skin Irrit. 2, Eye Irrit. 2 STOT SE 3	GHS07, Wng	H315, H319, H335
2	Skin Irrit. 2, Eye Irrit. 2A, STOT SE 3, Acute Tox 4, Acute Tox 4	GHS07, Wng	H312, H315, H319, H332, H335
Harmonisation Code	1 = The most prevalent classification 2 = The most severe classification		

**National Inventory Status**

National Inventory	Status
Australia - AIIC / Australia Non-Industrial Use	Yes
Canada - DSL	Yes
Canada - NDSL	No (Tris (hydroxymethyl) aminomethane )
China - IECSC	Yes
Europe - EINEC / ELINCS / NLP	Yes
Japan - ENCS	Yes
Korea - KECI	Yes
New Zealand - NZIoC	Yes
Philippines - PICCS	Yes
USA - TSCA	Yes
Taiwan - TCSI	Yes
Mexico - INSQ	Yes
Vietnam - NCI	Yes
Russia - FBEPH	Yes

**Legend:**  
Yes = All CAS declared ingredients are on the inventory  
No = One or more of the CAS listed ingredients are not on the inventory. These ingredients may be exempt or will require registration.

**SECTION 16. Other information****Full text Risk and Hazard codes**

H312	Harmful in contact with skin
H315	Causes skin irritation
H319	Causes serious eye irritation
H332	Harmful if inhaled
H335	May cause respiratory irritation

**Version Summary**

Version	Date of Update	Sections Updated
1	29/APR/2024	Initial version

**Other information**

Classification of the preparation and its individual components has drawn on official and authoritative sources as well as independent review by the Chemwatch Classification committee using available literature references.

The SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings. Risks may be determined by reference to Exposures Scenarios. Scale of use, frequency of use and current or available engineering controls must be considered.

For detailed advice on Personal Protective Equipment, refer to the following EU CEN Standards:

EN 166 Personal eye-protection

EN 340 Protective clothing

EN 374 Protective gloves against chemicals and micro-organisms

EN 13832 Footwear protecting against chemicals

EN 133 Respiratory protective devices

**Definitions and abbreviations**

ACGIH	American Conference of Governmental Industrial Hygienists
AIIC	Australian Inventory of Industrial Chemicals
BCF:	Bio Concentration Factors
BEI	Biological Exposure Index
DSL	Domestic Substances List
EINECS	European Inventory of Existing Commercial chemical Substances
ELINCS	European List of Notified Chemical Substances
ENCS	Existing and New Chemical Substances Inventory
ES	Exposure Standard
FBEPH	Russian Register of Potentially Hazardous Chemical and Biological Substances
IARC	International Agency for Research on Cancer
IECSC	Inventory of Existing Chemical Substance in China
IDLH	Immediately Dangerous to Life or Health Concentrations
INSQ	Inventario Nacional de Sustancias Químicas
KECI:	Korea Existing Chemicals Inventory
LOAEL	Lowest Observed Adverse Effect Level
LOD	Limit Of Detection
NCI	National Chemical Inventory
NDSL	Non-Domestic Substances List
NLP	No-Longer Polymers
NOAEL	No Observed Adverse Effect Level
NZIoC:	New Zealand Inventory of Chemicals
OSF	Odour Safety Factor
OTV	Odour Threshold Value
PC	Permissible Concentration
PC-STEL	Permissible Concentration Short Term Exposure Limit

PICCS	Philippine Inventory of Chemicals and Chemical Substances
STEL	Short Term Exposure Limit
TCSI	Taiwan Chemical Substance Inventory
TEEL	Temporary Emergency Exposure Limit
TLV	Threshold Limit Value
TSCA	Toxic Substances Control Act
TWA	Time Weighted Average

## Deckblatt zum Sicherheitsdatenblatt

Erstellt am 02.03.2026 Version 01.00

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### Produktidentifikation:

Handelsname	Elution Buffer
Verwendungszweck	Ausschliesslich und nur für den Laborgebrauch zu verwenden. Nur für Forschungszwecke geeignet, Diagnostikzwecke sind von der Verwendung ausgeschlossen.

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### Lieferant, der das Sicherheitsdatenblatt übermittelt:

INTEGRA Biosciences AG  
Tardisstrasse 201,  
7205 Zizers, Schweiz  
[www.integra-biosciences.com](http://www.integra-biosciences.com)  
Tel.: +41 (0)81 286 95 30  
[info-ch@integra-biosciences.com](mailto:info-ch@integra-biosciences.com)

**Nationale Notfallnummer: 145** (24h erreichbar, Tox Info Suisse, Zürich; für Anrufe aus der Schweiz, Auskünfte auf Deutsch, Französisch und Italienisch)

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### Informationen für die Verwender betreffend:

#### Abschnitt 7 – Handhabung und Lagerung

Allfällig relevante schweizerische Anforderungen des Arbeitnehmerschutzes und des Umweltschutzes betreffend die Handhabung und Lagerung sind zu berücksichtigen.

#### Abschnitt 8 – Begrenzung und Überwachung der Exposition / Persönliche Schutzausrüstung

Die im Sicherheitsdatenblatt angegebenen Grenzwerte basieren auf den einschlägigen EG-/EU-Vorschriften. Für den Arbeitnehmerschutz in der Schweiz sind zusätzlich die Vorgaben der SUVA zu berücksichtigen. Gegebenenfalls ist die persönliche Schutzausrüstung zu spezifizieren.

#### Abschnitt 13 – Hinweise zur Entsorgung

Hinweise zur Entsorgung sind gemäß der Technischen Verordnung über Abfälle (TVA), der Verordnung über den Verkehr mit Abfällen (VeVA) sowie der Verordnung des UVEK über Listen zum Verkehr mit Abfällen (LVA) zu berücksichtigen.

#### Abschnitt 15 – Rechtsvorschriften

Allfällig relevante schweizerische Vorschriften, z. B. betreffend Luftreinhalte-Verordnung, Störfallverordnung (Mengenschwellen), Abgabevorschriften, Verwendungsbeschränkungen oder -verbote sowie allfällige Zulassungen (z. B. Biozidprodukte), sind zu berücksichtigen.



Version No: 1

Issue date: 29/APR/2024

Revision date: Not Applicable

Safety Data Sheet (Conforms to Annex II of REACH (1907/2006) - Regulation 2020/878)

**SECTION 1. Identification of the substance / mixture and of the company / undertaking****1.1. Product Identifier**

Product name	Elution Buffer
Synonyms	Not Available
Other means of identification	Not Available

**1.2. Relevant identified uses of the substance or mixture and uses advised against**

Relevant identified uses	Laboratory use.
Uses advised against	Not Applicable

**1.3. Details of the manufacturer or supplier of the safety data sheet**

Registered company name	CleanNA
Address	Coenecoop 75, 2741 PH, Waddinxveen, The Netherlands
Telephone	+31 (0) 182 22 33 50
Fax	+31 (0) 182 22 33 98
Website	<a href="http://www.cleanna.com">www.cleanna.com</a>
Email	info@cleanna.com

**1.4. Emergency telephone number**

Emergency telephone numbers	112 (European emergency number)
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**SECTION 2. Hazards identification****2.1. Classification of the substance or mixture**

Classification according to regulation (EC) No 1272/2008 [CLP] and amendments	Not Applicable
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**2.2. Label elements**

Hazard pictogram(s)	Not Applicable
Signal word	Not Applicable

**Hazard statement(s)**

Not Applicable

**Supplementary statement(s)**

Not Applicable

**Precautionary statement(s) Prevention**

Not Applicable

**Precautionary statement(s) Response**

Not Applicable

**Precautionary statement(s) Storage**

Not Applicable

**Precautionary statement(s) Disposal**

Not Applicable

**2.3. Other hazards**

REACH – Art. 57-59: The mixture does not contain Substances of Very High Concern (SVHC) at the SDS issue date.

**SECTION 3. Composition / information on ingredients****3.1 Substances**

See 'Composition on ingredients' in Section 3.2

**3.2 Mixtures**

1. CAS No 2. EC No 3. Index No 4. REACH No	%[weight]	Name	Classification according to regulation (EC) No 1272/2008 [CLP] and amendments	SCL / M-Factor	Nanoform Particle Characteristics
1. 77-86-1 2. 201-064-4 3. Not Available 4. Not Available	0.1 - 1	Tris (hydroxymethyl) aminomethane	Skin Corrosion/Irritation – Category 2 Serious Eye Damage/Eye Irritation – Category 2 Specific Target Toxicity – Single Exposure (Respiratory Tract Irritation – Category 3 H315, H319, H335 <sup>1</sup>	Not Available	Not Available
<b>Legend:</b>	2. Classification drawn from Regulation (EU) No 1272/2008 - Annex VI; 3. Classification drawn from C&L; * EU IOELVs available; [e] Substance identified as having endocrine disrupting properties				

**SECTION 4. First aid measures****4.1. Description of first aid measures**

<b>Eye Contact</b>	If this product comes in contact with eyes: ▶ Wash out immediately with water. ▶ If irritation continues, seek medical attention. ▶ Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.
<b>Skin Contact</b>	If skin or hair contact occurs: ▶ Flush skin and hair with running water (and soap if available). ▶ Seek medical attention in event of irritation.
<b>Inhalation</b>	▶ If fumes, aerosols or combustion products are inhaled remove from contaminated area. ▶ Other measures are usually unnecessary.
<b>Ingestion</b>	▶ Immediately give a glass of water. ▶ First aid is not generally required. If in doubt, contact a Poisons Information Centre or a doctor.

**4.2 Most important symptoms and effects, both acute and delayed**

See Section 11

**4.3. Indication of any immediate medical attention and special treatment needed**

Treat symptomatically

**SECTION 5. Firefighting measures****5.1 Extinguishing media**

- ▶ There is no restriction on the type of extinguisher which may be used.
- ▶ Use extinguishing media suitable for surrounding area.

**5.2 Special hazards arising from the substrate or mixture**

<b>Fire Incompatibility</b>	None known
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**5.3. Advice for firefighters**

<b>Fire Fighting</b>	▶ Use water delivered as a fine spray to control fire and cool adjacent area. ▶ <b>Do not</b> approach containers suspected to be hot. ▶ Cool fire exposed containers with water spray from a protected location. ▶ If safe to do so, remove containers from path of fire. ▶ Equipment should be thoroughly decontaminated after use.
<b>Fire/Explosion Hazard</b>	▶ Non-combustible. ▶ Not considered a significant fire risk, however containers may burn.

**SECTION 6. Accidental release measures****6.1 Personal precautions, protective equipment and emergency procedures**

See section 8

**6.2 Environmental precautions**

See section 12

**6.3 Methods and material for containment and cleaning up**

<b>Minor Spills</b>	<ul style="list-style-type: none"> <li>▶ Clean up all spills immediately.</li> <li>▶ Avoid breathing vapours and contact with skin and eyes.</li> <li>▶ Control personal contact with the substance, by using protective equipment.</li> <li>▶ Contain and absorb spill with sand, earth, inert material or vermiculite.</li> <li>▶ Wipe up.</li> <li>▶ Place in a suitable, labelled container for waste disposal.</li> </ul>
<b>Major Spills</b>	<ul style="list-style-type: none"> <li>▶ Clear area of personnel and move upwind.</li> <li>▶ Alert Fire Brigade and tell them location and nature of hazard.</li> <li>▶ Control personal contact with the substance, by using protective equipment.</li> <li>▶ Prevent spillage from entering drains, sewers or water courses.</li> <li>▶ Recover product wherever possible.</li> <li>▶ Put residues in labelled containers for disposal.</li> <li>▶ If contamination of drains or waterways occurs, advise emergency services.</li> </ul>

**6.4. Reference to other sections**

Personal Protective Equipment advice is contained in Section 8 of the SDS.

**SECTION 7. Handling and storage****7.1. Precautions for safe handling**

<b>Safe handling</b>	<ul style="list-style-type: none"> <li>▶ Limit all unnecessary personal contact.</li> <li>▶ Wear protective clothing when risk of exposure occurs.</li> <li>▶ Use in a well-ventilated area.</li> <li>▶ Avoid contact with incompatible materials.</li> <li>▶ When handling, <b>DO NOT</b> eat, drink or smoke.</li> <li>▶ Keep containers securely sealed when not in use.</li> <li>▶ Avoid physical damage to containers.</li> <li>▶ Always wash hands with soap and water after handling.</li> <li>▶ Work clothes should be laundered separately.</li> <li>▶ Use good occupational work practice.</li> <li>▶ Observe manufacturer's storage and handling recommendations contained within this SDS.</li> <li>▶ Atmosphere should be regularly checked against established exposure standards to ensure safe working conditions are maintained.</li> </ul>
<b>Fire and explosion protection</b>	See section 5
<b>Other information</b>	None known

**7.2. Conditions for safe storage, including any incompatibilities**

<b>Suitable container</b>	<ul style="list-style-type: none"> <li>▶ Polyethylene or polypropylene container.</li> <li>▶ Packing as recommended by manufacturer.</li> <li>▶ Check all containers are clearly labelled and free from leaks.</li> </ul>
<b>Storage incompatibility</b>	Avoid contamination of water, foodstuffs, feed or seed.
<b>Hazard categories in accordance with Regulation (EC) No 1272/2008</b>	Not available
<b>Qualifying quantity (tonnes) of dangerous substances as referred to in Article 3(10) for the application of</b>	Not available

**7.3. Specific end use(s)**

See section 1.2

**SECTION 8. Exposure controls / personal protection**

**8.1. Control parameters**

Ingredient	DNELs Exposure Pattern Worker			PNECs Compartment
Tris (hydroxymethyl) aminomethane	Dermal	166.7 mg/kg bw/day	(Systemic, Chronic)	300 mg/L (STP)
	Inhalation	117.5 mg/m <sup>3</sup>	(Systemic, Chronic)	
	Dermal	83.3 mg/kg bw/day	(Systemic, Chronic)	
	Inhalation	29 mg/m <sup>3</sup>	(Systemic, Chronic)	
	Oral	8.3 mg/kg bw/day	(Systemic, Chronic)	

\* Values for General Population

**Occupational Exposure Limits (OEL)**

**INGREDIENT DATA**

Source	Ingredient	Material name	TWA	STEL	Peak	Notes
Not Available	Not Available	Not Available	Not Available	Not Available	Not Available	Not Available

**Emergency Limits**

Ingredient	TEEL-1	TEEL-2	TEEL-3
Tris (hydroxymethyl) aminomethane	18 mg/m <sup>3</sup>	190 mg/m <sup>3</sup>	1,200 v

Ingredient	Original IDLH	Revised IDLH
Tris (hydroxymethyl) aminomethane	Not Available	Not Available

**Occupational Exposure Banding**

Ingredient	Occupational Exposure Band rating	Occupational Exposure Band Limit
Tris (hydroxymethyl) aminomethane	E	<= 0.01 mg/m <sup>3</sup>

**Notes;** Occupational exposure banding is a process of assigning chemicals into specific categories or bands based on a chemical's potency and the adverse health outcomes associated with exposure. The output of this process is an occupational exposure band (OEB), which corresponds to a range of exposure concentrations that are expected to protect worker health.

**8.2. Exposure controls**

**8.2.1 Appropriate engineering controls**

Engineering controls are used to remove a hazard or place a barrier between the worker and the hazard. Well-designed engineering controls can be highly effective in protecting workers and will typically be independent of worker interactions to provide this high level of protection.

The basic types of engineering controls are:

Process controls which involve changing the way a job activity or process is done to reduce the risk.

Enclosure and/or isolation of emission source which keeps a selected hazard "physically" away from the worker and ventilation that strategically "adds" and "removes" air in the work environment. Ventilation can remove or dilute an air contaminant if designed properly. The design of a ventilation system must match the particular process and chemical or contaminant in use.

Employers may need to use multiple types of controls to prevent employee overexposure.

General exhaust is adequate under normal operating conditions. If risk of overexposure exists, wear SAA approved respirator. Correct fit is essential to obtain adequate protection. Provide adequate ventilation in warehouse or closed storage areas. Air contaminants generated in the workplace possess varying 'escape' velocities which, in turn, determine the 'capture velocities' of fresh circulating air required to effectively remove the contaminant.

Type of contaminant	Air Speed
Solvent, vapours, degreasing etc. evaporating from tank (in still air)	0.25 – 0.5 m/s (50 – 100 f/min)
Aerosols, fumes from pouring operations, intermittent container filling, low speed conveyer transfers, welding, spray drift, plating acid fumes, pickling (released at low velocity into zone of active generation)	0.5 – 1 m/s (100 – 200 f/min)
Direct spray, spray painting in shallow booths, drum filling, conveyer loading, crusher debts, gas discharge (active generation into zone of rapid air motion)	1 – 2.5 m/s (200 – 500 f/min)
Grinding, abrasive blasting, tumbling, high speed generated dusts (released at high velocity into zone of very high rapid air motion)	w.5 – 10 m/s (500 – 200 f/min)

Within each range the appropriate value depends to:

Lower end of range	Upper end of range
1: Room air currents minimal of favourable to capture	1: Disturbing room air currents
2: Contaminants of low toxicity or of nuisance value only	2: Contaminants of high toxicity
3: Intermittent, low production	3: High Production, heavy use
4: Large hood or large air mass in motion	4: Small hood – local control only

Simple theory shows that air velocity falls rapidly with distance away from the opening of a simple extraction pipe. Velocity generally decreases with the square of distance from the extraction point (in simple cases). Therefore the air speed at the extraction point should be adjusted, accordingly, after reference to distance from the contaminating source. The air velocity at the extraction fan, for example, should be a minimum of 1-2 m/s (200-400 f/min) for extraction of solvents generated in a tank 2 meters distant from the extraction point. Other mechanical considerations, producing performance deficits within the extraction apparatus, make it essential that theoretical air velocities are multiplied by factors of 10 or more when extraction systems are installed or used.

**8.2.2. Personal protection**



**Eye and face protection**

- ▶ Safety glasses with side shields
- ▶ Chemical goggles.
- ▶ Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of lenses or restrictions on use, should be created for each workplace or task. This should include a review of lens absorption and adsorption

for the class of chemicals in use and an account of injury experience. Medical and first-aid personnel should be trained in their removal and suitable equipment should be readily available. In the event of chemical exposure, begin eye irrigation immediately and remove contact lens as soon as practicable. Lens should be removed at the first signs of eye redness or irritation - lens should be removed in a clean environment only after workers have washed hands thoroughly. [CDC NIOSH Current Intelligence Bulletin 59], [AS/NZS 1336 or national equivalent]

**Skin protection**

See Hand protection below

Wear general protective gloves, e.g. light weight rubber gloves.

The selection of suitable gloves does not only depend on the material, but also on further marks of quality which vary from manufacturer to manufacturer. Where the chemical is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

The exact break through time for substances has to be obtained from the manufacturer of the protective gloves and has to be observed when making a final choice.

Personal hygiene is a key element of effective hand care. Gloves must only be worn on clean hands. After using gloves, hands should be washed and dried thoroughly. Application of a non-perfumed moisturiser is recommended.

Suitability and durability of glove type is dependent on usage. Important factors in the selection of gloves include:

- frequency and duration of contact,
- chemical resistance of glove material,
- glove thickness and
- dexterity

Select gloves tested to a relevant standard (e.g. Europe EN 374, US F739, AS/NZS 2161.1 or national equivalent).

· When prolonged or frequently repeated contact may occur, a glove with a protection class of 5 or higher (breakthrough time greater than 240 minutes according to EN 374, AS/NZS 2161.10.1 or national equivalent) is recommended.

· When only brief contact is expected, a glove with a protection class of 3 or higher (breakthrough time greater than 60 minutes according to EN 374, AS/NZS 2161.10.1 or national equivalent) is recommended.

**Hand / feet protection**

Some glove polymer types are less affected by movement and this should be taken into account when considering gloves for long-term use.

· Contaminated gloves should be replaced.

As defined in ASTM F-739-96 in any application, gloves are rated as:

- Excellent when breakthrough time > 480 min
- Good when breakthrough time > 20 min
- Fair when breakthrough time < 20 min
- Poor when glove material degrades

For general applications, gloves with a thickness typically greater than 0.35 mm, are recommended.

It should be emphasised that glove thickness is not necessarily a good predictor of glove resistance to a specific chemical, as the permeation efficiency of the glove will be dependent on the exact composition of the glove material. Therefore, glove selection should also be based on consideration of the task requirements and knowledge of breakthrough times.

Glove thickness may also vary depending on the glove manufacturer, the glove type and the glove model. Therefore, the manufacturers technical data should always be taken into account to ensure selection of the most appropriate glove for the task.

Note: Depending on the activity being conducted, gloves of varying thickness may be required for specific tasks. For example:

- Thinner gloves (down to 0.1 mm or less) may be required where a high degree of manual dexterity is needed. However, these gloves are only likely to give short duration protection and would normally be just for single use applications, then disposed of.
- Thicker gloves (up to 3 mm or more) may be required where there is a mechanical (as well as a chemical) risk i.e. where there is abrasion or puncture potential

Gloves must only be worn on clean hands. After using gloves, hands should be washed and dried thoroughly. Application of a non-perfumed moisturiser is recommended.

**Body protection**

See Other protection below

**Other protection**

No special equipment needed when handling small quantities.

**OTHERWISE:**

- ▶ Overall.
- ▶ Barrier cream.
- ▶ Eyewash unit.

**8.2.3. Environmental exposure controls**

See section 12

**SECTION 9. Physical and chemical properties****9.1. Information on basic physical and chemical properties**

<b>Appearance</b>	Not Available		
<b>Physical state</b>	Liquid	<b>Relative density (Water = 1)</b>	Not Available
<b>Odour</b>	Not Available	<b>Partition coefficient n-octanol / water</b>	Not Available
<b>Odour threshold</b>	Not Available	<b>Auto-ignition temperature (°C)</b>	Not Available
<b>pH (as supplied)</b>	Not Available	<b>Decomposition temperature (°C)</b>	Not Available
<b>Melting point / freezing point (°C)</b>	Not Available	<b>Viscosity (cSt)</b>	Not Available
<b>Initial boiling point and boiling range (°C)</b>	Not Available	<b>Molecular weight (g/mol)</b>	Not Available
<b>Flash point (°C)</b>	Not Available	<b>Taste</b>	Not Available
<b>Evaporation rate</b>	Not Available	<b>Explosive properties</b>	Not Available
<b>Flammability</b>	Not Available	<b>Oxidising properties</b>	Not Available
<b>Upper Explosive Limit (%)</b>	Not Available	<b>Surface Tension (dyn/cm or mN/m)</b>	Not Available

Lower Explosive Limit (%)	Not Available	Volatile Component (%vol)	Not Available
Vapour pressure (kPa)	Not Available	Gas group	Not Available
Solubility in water	Immiscible	pH as a solution (1%)	Not Available
Vapour density (Air = 1)	Not Available	VOC g/L	Not Available
Nanoform Solubility	Not Available	Nanoform Particle Characteristics	Not Available
Particle Size	Not Available		

## 9.2. Other information

Not Available

## SECTION 10. Stability and reactivity

10.1.Reactivity	See section 7.2
10.2. Chemical stability	Product is considered stable and hazardous polymerisation will not occur.
10.3. Possibility of hazardous reactions	See section 7.2
10.4. Conditions to avoid	See section 7.2
10.5. Incompatible materials	See section 7.2
10.6. Hazardous decomposition products	See section 5.3

## SECTION 11. Toxicological information

### 11.1. Information on toxicological effects

Inhaled	The material is not thought to produce adverse health effects or irritation of the respiratory tract (as classified by EC Directives using animal models). Nevertheless, good hygiene practice requires that exposure be kept to a minimum and that suitable control measures be used in an occupational setting.
Ingestion	The material has <b>NOT</b> been classified by EC Directives or other classification systems as 'harmful by ingestion'. This is because of the lack of corroborating animal or human evidence.
Skin Contact	The material is not thought to produce adverse health effects or skin irritation following contact (as classified by EC Directives using animal models). Nevertheless, good hygiene practice requires that exposure be kept to a minimum and that suitable gloves be used in an occupational setting.
Eye	Although the liquid is not thought to be an irritant (as classified by EC Directives), direct contact with the eye may produce transient discomfort characterised by tearing or conjunctival redness (as with windburn).
Chronic	Long-term exposure to the product is not thought to produce chronic effects adverse to the health (as classified by EC Directives using animal models); nevertheless exposure by all routes should be minimised as a matter of course.

Elution Buffer	<b>TOXICITY</b>	<b>IRRITATION</b>
	Not Available	Not Available
Tris (hydroxymethyl) aminomethane	<b>TOXICITY</b>	<b>IRRITATION</b>
	Dermal (rat) LD50 > 5000 mg/kg <sup>1</sup> Oral (rat) LD50 > 5000 mg/kg <sup>1</sup>	Eye: no adverse effect observed (not irritating) <sup>1</sup> Skin: no adverse effect observed (not irritating) <sup>1</sup>
<b>Legend:</b>	1. Value obtained from Europe ECHA Registered Substances - Acute toxicity 2. Value obtained from manufacturer's SDS. Unless otherwise specified data extracted from RTECS - Register of Toxic Effect of chemical Substances	

Tris (hydroxymethyl) aminomethane	<p>Asthma-like symptoms may continue for months or even years after exposure to the material ends. This may be due to a non-allergic condition known as reactive airways dysfunction syndrome (RADS) which can occur after exposure to high levels of highly irritating compound. Main criteria for diagnosing RADS include the absence of previous airways disease in a non-atopic individual, with sudden onset of persistent asthma-like symptoms within minutes to hours of a documented exposure to the irritant. Other criteria for diagnosis of RADS include a reversible airflow pattern on lung function tests, moderate to severe bronchial hyperreactivity on methacholine challenge testing, and the lack of minimal lymphocytic inflammation, without eosinophilia. RADS (or asthma) following an irritating inhalation is an infrequent disorder with rates related to the concentration of and duration of exposure to the irritating substance. On the other hand, industrial bronchitis is a disorder that occurs as a result of exposure due to high concentrations of irritating substance (often particles) and is completely reversible after exposure ceases. The disorder is characterized by difficulty breathing, cough and mucus production.</p> <p>TRIS AMINO and its surrogate chemicals have very little, if any, toxicity. They are mildly irritating to eyes at moderate concentrations, and do not cause allergic skin reactions. Ingestion of relatively high dosages can cause liver changes. Patients with decreased liver function should not be given these substances over extended treatment periods. They have been known to have a harmful effect on the foetus if taken during pregnancy.</p>
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Acute Toxicity	✗
Skin Irritation/Corrosion	✗
Serious Eye Damage/Irritation	✗
Respiratory or Skin sensitisation	✗
Mutagenicity	✗

Carcinogenicity	✗
Reproductivity	✗
STOT - Single Exposure	✗
STOT - Repeated Exposure	✗
Aspiration Hazard	✗

**Legend:** ✗ – Data either not available or does not fill the criteria for classification  
 ✓ – Data available to make classification

## 11.2. Information on other hazards

### 1. Endocrine Disruption Properties

Not Available

### 2. Other Information

See Section 11.1

## SECTION 12. Ecological information

### 12.1 Toxicity

Elution Buffer	Endpoint	Test duration (hr)	Species	Value	Source
	Not available	Not available	Not available	Not available	Not available
Tris (hydroxymethyl) aminomethane	Endpoint	Test Duration (hr)	Species	Value	Source
	NOEC(ECx)	72	Algae or other aquatic plants	100 mg/L	2
	EC50	72	Algae or other aquatic plants	397 mg/L	2
	Ec50	48	Crustacea	> 980 mg/L	2
<b>Legend:</b>	Extracted from 1. IUCLID Toxicity Data 2. Europe ECHA Registered Substances - Ecotoxicological Information - Aquatic Toxicity 4. US EPA, Ecotox database - Aquatic Toxicity Data 5. ECETOC Aquatic Hazard Assessment Data 6. NITE (Japan) - Bioconcentration Data 7. METI (Japan) - Bioconcentration Data 8. Vendor Data				

### 12.2. Persistence and degradability

Ingredient	Persistence: Water/Soil	Persistence: Air
Tris (hydroxymethyl) aminomethane	LOW	LOW

### 12.3. Bio accumulative potential

Ingredient	Bioaccumulation
Tris (hydroxymethyl) aminomethane	LOW (LogKOW = -1.5606)

### 12.4. Mobility in soil

Ingredient	Mobility
Tris (hydroxymethyl) aminomethane	HIGH (KOC = 1)

### 12.5. Results of PBT and vPvB assessment

	P	B	T
Relevant available data	Not Available	Not Available	Not Available
PBT	✗	✗	✗
vPvB	✗	✗	✗
PBT Criteria fulfilled?	No		
vPvB	No		

### 12.6. Endocrine Disruption Properties

Not Available

### 12.7. Other adverse effects

Not Available

**SECTION 13. Disposal considerations**

**13.1. Waste treatment methods**

<b>Product / Packaging disposal</b>	<p>Legislation addressing waste disposal requirements may differ by country, state and/ or territory. Each user must refer to laws operating in their area. In some areas, certain wastes must be tracked.</p> <p>A Hierarchy of Controls seems to be common - the user should investigate:</p> <ul style="list-style-type: none"> <li>▶ Reduction</li> <li>▶ Reuse</li> <li>▶ Recycling</li> <li>▶ Disposal (if all else fails)</li> </ul> <p>This material may be recycled if unused, or if it has not been contaminated so as to make it unsuitable for its intended use. If it has been contaminated, it may be possible to reclaim the product by filtration, distillation or some other means. Shelf life considerations should also be applied in making decisions of this type. Note that properties of a material may change in use, and recycling or reuse may not always be appropriate.</p> <ul style="list-style-type: none"> <li>▶ <b>DO NOT</b> allow wash water from cleaning or process equipment to enter drains.</li> <li>▶ It may be necessary to collect all wash water for treatment before disposal.</li> <li>▶ In all cases disposal to sewer may be subject to local laws and regulations and these should be considered first.</li> <li>▶ Where in doubt contact the responsible authority.</li> <li>▶ Recycle wherever possible.</li> <li>▶ Consult manufacturer for recycling options or consult local or regional waste management authority for disposal if no suitable treatment or disposal facility can be identified.</li> <li>▶ Dispose of by: burial in a land-fill specifically licensed to accept chemical and / or pharmaceutical wastes or incineration in a licensed apparatus (after admixture with suitable combustible material).</li> </ul> <p>▶ Decontaminate empty containers. Observe all label safeguards until containers are cleaned and destroyed.</p>
<b>Waste treatment options</b>	Not Available
<b>Sewage disposal options</b>	Not Available

**SECTION 14 Transport information**

**Labels Required**

<b>Marine Pollutant</b>	NO
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**Land transport (ADR): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS**

14.1. <b>UN number</b>	Not Applicable	
14.2. <b>UN proper shipping name</b>	Not Applicable	
14.3. <b>Transport hazard class(es)</b>	Class	Not Applicable
	Sub risk	Not Applicable
14.4. <b>Packing group</b>	Not Applicable	
14.5. <b>Environmental hazard</b>	Not Applicable	
14.6. <b>Special precautions for user</b>	Hazard identification (Kemler)	Not Applicable
	Classification code	Not Applicable
	Hazard Label	Not Applicable
	Special provisions	Not Applicable
	Limited quantity	Not Applicable
	Tunnel Restriction Code	Not Applicable

**Air transport (ICAO-IATA / DGR): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS**

14.1. <b>UN number</b>	Not Applicable	
14.2. <b>UN proper shipping name</b>	Not Applicable	
14.3. <b>Transport hazard class(es)</b>	ICAO/IATA Class	Not Applicable
	ICAO / IATA Sub risk	Not Applicable
	ERG Code	Not Applicable
14.4. <b>Packing group</b>	Not Applicable	
14.5. <b>Environmental hazard</b>	Not Applicable	
14.6. <b>Special precautions for user</b>	Special provisions	Not Applicable
	Cargo Only Packing Instructions	Not Applicable
	Cargo Only Maximum Qty / Pack	Not Applicable
	Passenger and Cargo Packing Instructions	Not Applicable
	Passenger and Cargo Maximum Qty / Pack	Not Applicable
	Passenger and Cargo Limited Quantity Packing Instructions	Not Applicable
	Passenger and Cargo Limited Maximum Qty / Pack	Not Applicable

**Sea transport (IMDG-Code / GGVSee): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS**

14.1. UN number	Not Applicable	
14.2. UN proper shipping name	Not Applicable	
14.3. Transport hazard class(es)	IMDG Class	Not Applicable
	IMDG Sub risk	Not Applicable
14.4. Packing group	Not Applicable	
14.5. Environmental hazard	Not Applicable	
14.6. Special precautions for user	EMS Number	Not Applicable
	Special provisions	Not Applicable
	Limited Quantities	Not Applicable

**Inland waterways transport (ADN): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS**

14.1. UN number	Not Applicable	
14.2. UN proper shipping name	Not Applicable	
14.3. Transport hazard class(es)	Not applicable	Not Applicable
14.4. Packing group	Not applicable	
14.5. Environmental hazard	Not applicable	
14.6. Special precautions for user	Classification code	Not Applicable
	Special provisions	Not Applicable
	Limited quantity	Not Applicable
	Equipment required	Not Applicable
	Fire cones number	Not Applicable

**14.7. Transport in bulk according to Annex II of MARPOL and the IBC code**

Not Applicable

**14.8. Transport in bulk in accordance with MARPOL Annex V and the IMSBC Code**

Product name	Group
Tris (hydroxymethyl) aminomethane	Not Available

**14.9. Transport in bulk in accordance with the ICG Code**

Product name	Ship Type
Tris (hydroxymethyl) aminomethane	Not Available

**SECTION 15. Regulatory information****15.1. Safety, health and environmental regulations / legislation specific for the substance or mixture****Tris (hydroxymethyl) aminomethane is found on the following regulator lists**

Europe EC Inventory	FEI Equine Prohibited Substances List – Controlled Medication
European Union – European Inventory of Existing Commercial Chemical Substances (EINICS)	FEI Equine Prohibited Substances List 9ESPL)

This safety data sheet is in compliance with the following EU legislation and its adaptations - as far as applicable - : Directives 98/24/EC, - 92/85/EEC, - 94/33/EC, - 2008/98/EC, - 2010/75/EU; Commission Regulation (EU) 2020/878; Regulation (EC) No 1272/2008 as updated through ATPs.

**15.2. Chemical safety assessment**

No Chemical Safety Assessment has been carried out for this substance/mixture by the supplier.

**ECHA SUMMARY**

Ingredient	CAS number	Index No.	ECHA Dossier
Tris (hydroxymethyl) aminomethane	77-86-1	Not Available	Not Available
Harmonisation (C&L Inventory)	Hazard Class and Category Code(s)	Pictograms Signal Word Code(s)	Hazard Statement Code(s)
1	Skin Irrit. 2, Eye Irrit. 2 STOT SE 3	GHS07, Wng	H315, H319, H335
2	Skin Irrit. 2, Eye Irrit. 2A, STOT SE 3, Acute Tox 4, Acute Tox 4	GHS07, Wng	H312, H315, H319, H332, H335
Harmonisation Code	1 = The most prevalent classification 2 = The most severe classification		

**National Inventory Status**

National Inventory	Status
Australia - AIIC / Australia Non-Industrial Use	Yes
Canada - DSL	Yes
Canada - NDSL	No (Tris (hydroxymethyl) aminomethane )
China - IECSC	Yes
Europe - EINEC / ELINCS / NLP	Yes
Japan - ENCS	Yes
Korea - KECI	Yes
New Zealand - NZIoC	Yes
Philippines - PICCS	Yes
USA - TSCA	Yes
Taiwan - TCSI	Yes
Mexico - INSQ	Yes
Vietnam - NCI	Yes
Russia - FBEPH	Yes

**Legend:**  
Yes = All CAS declared ingredients are on the inventory  
No = One or more of the CAS listed ingredients are not on the inventory. These ingredients may be exempt or will require registration.

**SECTION 16. Other information****Full text Risk and Hazard codes**

H312	Harmful in contact with skin
H315	Causes skin irritation
H319	Causes serious eye irritation
H332	Harmful if inhaled
H335	May cause respiratory irritation

**Version Summary**

Version	Date of Update	Sections Updated
1	29/APR/2024	Initial version

**Other information**

Classification of the preparation and its individual components has drawn on official and authoritative sources as well as independent review by the Chemwatch Classification committee using available literature references.

The SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings. Risks may be determined by reference to Exposures Scenarios. Scale of use, frequency of use and current or available engineering controls must be considered.

For detailed advice on Personal Protective Equipment, refer to the following EU CEN Standards:

EN 166 Personal eye-protection

EN 340 Protective clothing

EN 374 Protective gloves against chemicals and micro-organisms

EN 13832 Footwear protecting against chemicals

EN 133 Respiratory protective devices

**Definitions and abbreviations**

ACGIH	American Conference of Governmental Industrial Hygienists
AIIC	Australian Inventory of Industrial Chemicals
BCF:	Bio Concentration Factors
BEI	Biological Exposure Index
DSL	Domestic Substances List
EINECS	European Inventory of Existing Commercial chemical Substances
ELINCS	European List of Notified Chemical Substances
ENCS	Existing and New Chemical Substances Inventory
ES	Exposure Standard
FBEPH	Russian Register of Potentially Hazardous Chemical and Biological Substances
IARC	International Agency for Research on Cancer
IECSC	Inventory of Existing Chemical Substance in China
IDLH	Immediately Dangerous to Life or Health Concentrations
INSQ	Inventario Nacional de Sustancias Químicas
KECI:	Korea Existing Chemicals Inventory
LOAEL	Lowest Observed Adverse Effect Level
LOD	Limit Of Detection
NCI	National Chemical Inventory
NDSL	Non-Domestic Substances List
NLP	No-Longer Polymers
NOAEL	No Observed Adverse Effect Level
NZIoC:	New Zealand Inventory of Chemicals
OSF	Odour Safety Factor
OTV	Odour Threshold Value
PC	Permissible Concentration
PC-STEL	Permissible Concentration Short Term Exposure Limit

PICCS	Philippine Inventory of Chemicals and Chemical Substances
STEL	Short Term Exposure Limit
TCSI	Taiwan Chemical Substance Inventory
TEEL	Temporary Emergency Exposure Limit
TLV	Threshold Limit Value
TSCA	Toxic Substances Control Act
TWA	Time Weighted Average

## Deckblatt zum Sicherheitsdatenblatt

Erstellt am 02.03.2026 Version 01.00

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### Produktidentifikation:

Handelsname GH Wash  
Verwendungszweck Ausschliesslich und nur für den Laborgebrauch zu verwenden. Nur für Forschungszwecke geeignet, Diagnostikzwecke sind von der Verwendung ausgeschlossen.

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### Lieferant, der das Sicherheitsdatenblatt übermittelt:

INTEGRA Biosciences AG  
Tardisstrasse 201,  
7205 Zizers, Schweiz  
www.integra-biosciences.com  
Tel.: +41 (0)81 286 95 30  
info-ch@integra-biosciences.com

**Nationale Notfallnummer: 145** (24h erreichbar, Tox Info Suisse, Zürich; für Anrufe aus der Schweiz, Auskünfte auf Deutsch, Französisch und Italienisch)

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### Informationen für die Verwender betreffend:

#### Abschnitt 7 – Handhabung und Lagerung

Allfällig relevante schweizerische Anforderungen des Arbeitnehmerschutzes und des Umweltschutzes betreffend die Handhabung und Lagerung sind zu berücksichtigen.

#### Abschnitt 8 – Begrenzung und Überwachung der Exposition / Persönliche Schutzausrüstung

Die im Sicherheitsdatenblatt angegebenen Grenzwerte basieren auf den einschlägigen EG-/EU-Vorschriften. Für den Arbeitnehmerschutz in der Schweiz sind zusätzlich die Vorgaben der SUVA zu berücksichtigen. Gegebenenfalls ist die persönliche Schutzausrüstung zu spezifizieren.

#### Abschnitt 13 – Hinweise zur Entsorgung

Hinweise zur Entsorgung sind gemäß der Technischen Verordnung über Abfälle (TVA), der Verordnung über den Verkehr mit Abfällen (VeVA) sowie der Verordnung des UVEK über Listen zum Verkehr mit Abfällen (LVA) zu berücksichtigen.

#### Abschnitt 15 – Rechtsvorschriften

Allfällig relevante schweizerische Vorschriften, z. B. betreffend Luftreinhalte-Verordnung, Störfallverordnung (Mengenschwellen), Abgabevorschriften, Verwendungsbeschränkungen oder -verbote sowie allfällige Zulassungen (z. B. Biozidprodukte), sind zu berücksichtigen.



Version No: 1

Issue date: 15/MAY/2025

Revised: NONE

Safety Data Sheet (Conforms to Annex II of REACH (1907/2006) - Regulation 2020/878)

## SECTION 1. Identification of the substance / mixture and of the company / undertaking

### 1.1. Product Identifier

Product name	GH Wash
Synonyms	Not Available
Other means of identification	Not Available

### 1.2. Relevant identified uses of the substance or mixture and uses advised against

Relevant identified uses	Laboratory use.
Uses advised against	Not Applicable

### 1.3. Details of the manufacturer or supplier of the safety data sheet

Registered company name	CleanNA
Address	Coenecoop 75, 2741 PH, Waddinxveen, The Netherlands
Telephone	+31 (0) 182 22 33 50
Fax	+31 (0) 182 22 33 98
Website	<a href="http://www.cleanna.com">www.cleanna.com</a>
Email	<a href="mailto:info@cleanna.com">info@cleanna.com</a>

### 1.4. Emergency telephone number


Emergency telephone numbers	112 (European emergency number)
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## SECTION 2. Hazards identification

### 2.1. Classification of the substance or mixture

Classification according to regulation (EC) No 1272/2008 [CLP] and amendments [1]	Not Applicable
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### 2.2. Label elements

Hazard pictogram(s)	 GHS07
Signal word	Warning

### Hazard statement(s)

H302 + H332	Harmful if swallowed or inhaled
H315	Causes skin irritation
H319	Causes serious eye irritation
H373	May cause damage to organs through prolonged or repeated exposure

### Supplementary statement(s)

Supplementary statement(s)	Not Applicable
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**Precautionary statement(s) Prevention**

<b>P261</b>	Avoid breathing dust / fume / gas / mist / vapours / spray
<b>P264</b>	Wash skin thoroughly after handling
<b>P301+ P312</b>	IF SWALLOWED: Call doctor or Poisons Information Centre if feeling unwell
<b>P302 + P352</b>	IF ON SKIN: Wash with plenty of water
<b>P304 + P340 + P312</b>	IF INHALED: remove person to fresh air and keep comfortable for breathing. Call doctor or Poisons Information Center if feeling unwell
<b>P305 + P351 + P338</b>	IF IN EYES: rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing

**Precautionary statement(s) Response**

<b>P101</b>	If medical advice is needed have product container or label at hand
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**Precautionary statement(s) Storage**

	Not Applicable
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**Precautionary statement(s) Disposal**

<b>P501</b>	Dispose of contents / container to an approved waste disposal plant
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**2.3. Other hazards**

REACH - Art.57-59: The mixture does not contain Substances of Very High Concern (SVHC) at the SDS print date.

**SECTION 3. Composition / information on ingredients****3.1 Substances**

See 'Composition on ingredients' in Section 3.2

**3.2 Mixtures**

1. CAS No 2. EC No 3. Index No 4. REACH No	% [weight]	Name	Classification according to regulation (EC) No 1272/2008 [CLP] and amendments	SCL / M-Factor	Nanoform Particle Characteristics
1.50-01-1 2.200-002-3 3.6-7-148-00-0 4. Not Available	0.1 - 75 %	Guanidine (hydrochloride)	Acute Toxicity - Category 4 Skin Irritation - Category 2 Eye irritation - Category 2 H302; H315; H319; H332; <sup>[1]</sup>	Not Available	Not Available
<b>Legend</b>	<sup>1</sup> Classification drawn from Regulation (EU) No 1272/2008 - Annex VI				

**SECTION 4. First aid measures****4.1. Description of first aid measures**

<b>Eye Contact</b>	<ul style="list-style-type: none"> <li>- Immediately flush with water for at least 15 minutes</li> <li>- Remove contact lenses.</li> <li>- Consult a doctor in event of irritation</li> </ul>
<b>Skin Contact</b>	<ul style="list-style-type: none"> <li>- Immediately flush skin with water for at least 15 minutes.</li> <li>- Remove contaminated clothing and shoes. Wash before reuse.</li> <li>- Consult a doctor in event of irritation</li> </ul>
<b>Inhalation</b>	<ul style="list-style-type: none"> <li>- If inhaled remove from contaminated area into fresh air.</li> <li>- Consult a doctor in event of irritation or breathing difficulties</li> </ul>
<b>Ingestion</b>	<ul style="list-style-type: none"> <li>- Rinse mouth with water. Do <b>NOT</b> induce vomiting unless directed by medical personnel</li> <li>- Consult a doctor or a Poison Information Center when in doubt</li> </ul>

**4.2 Most important symptoms and effects, both acute and delayed**

See Section 11

**4.3. Indication of any immediate medical attention and special treatment needed**

Treat symptomatically

## SECTION 5. Firefighting measures

### 5.1 Extinguishing media

- powder
- CO2
- Use extinguishing media suitable for surrounding area

Contain gases / vapours / mists with water spray

### 5.2 Special hazards arising from the substrate or mixture

Fire Incompatibility	None known
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### 5.3. Advice for firefighters

Fire Fighting	<ul style="list-style-type: none"> <li>- Wear self-contained breathing apparatus</li> <li>- Contain escaping vapours with water</li> <li>- Prevent, by any means available, spillage from entering drains or water courses.</li> <li>- Use firefighting procedures suitable for surrounding area.</li> <li>- <b>DO NOT</b> approach containers suspected to be hot.</li> <li>- Cool fire exposed containers with water spray from a protected location.</li> <li>- If safe to do so, remove containers from path of fire.</li> <li>- Equipment should be thoroughly decontaminated after use.</li> </ul>
Fire/Explosion Hazard	<ul style="list-style-type: none"> <li>- Combustible.</li> <li>- Not considered a significant fire risk, however containers may burn</li> <li>- May emit nitrogen oxides (NOx)</li> <li>- May emit carbon oxides</li> <li>- May emit sodium oxides</li> <li>- May emit hydrogen chloride gas</li> </ul>

## SECTION 6. Accidental release measures

### 6.1 Personal precautions, protective equipment and emergency procedures

See section 8

### 6.2 Environmental precautions

See section 12

### 6.3 Methods and material for containment and cleaning up

Minor Spills	<ul style="list-style-type: none"> <li>- Clean up all spills immediately.</li> <li>- Avoid breathing vapours and contact with skin and eyes.</li> <li>- Control personal contact with the substance by using protective equipment.</li> <li>- Contain and absorb spill with sand, earth, inert material or vermiculite.</li> <li>- Wipe / sweep up.</li> <li>- Place in a suitable, labelled container for waste disposal.</li> </ul>
Major Spills	<ul style="list-style-type: none"> <li>- Clear area of personnel and move upwind.</li> <li>- Alert Fire Brigade and tell them location and nature of hazard.</li> <li>- Control personal contact with the substance by using protective equipment</li> <li>- Prevent, by any means available, spillage from entering drains or water courses.</li> <li>- Recover product wherever possible.</li> <li>- Collect residue and seal in labelled drums for disposal.</li> <li>- Wash area and prevent runoff into drains.</li> <li>- If contamination of drains or waterways occurs, advise emergency services.</li> </ul>

### 6.4. Reference to other sections

Personal Protective Equipment advice is contained in Section 8 of the SDS.

## SECTION 7. Handling and storage

### 7.1. Precautions for safe handling

Safe handling	<ul style="list-style-type: none"> <li>- Avoid all personal contact, including inhalation.</li> <li>- Wear protective clothing when risk of exposure occurs.</li> <li>- Use in a well-ventilated area.</li> <li>- Prevent formation of aerosols / dust</li> <li>- Work under hood</li> <li>- Do NOT inhale mixture</li> <li>- Prevent concentration in hollows and sumps.</li> <li>- <b>DO NOT</b> enter confined spaces until atmosphere has been checked.</li> <li>- <b>DO NOT</b> allow material to contact humans, exposed food or food utensils.</li> <li>- When handling, <b>DO NOT</b> eat, drink or smoke.</li> <li>- Keep containers securely sealed when not in use.</li> <li>- Avoid physical damage to containers.</li> <li>- Always wash hands with soap and water after handling.</li> <li>- Work clothes should be laundered separately.</li> <li>- Launder contaminated clothing before re-use.</li> <li>- Use good occupational work practice.</li> <li>- Observe manufacturer's storage and handling recommendations contained within this SDS.</li> </ul>
Fire and explosion protection	See section 5
Other information	None known

**7.2. Conditions for safe storage, including any incompatibilities**

<b>Suitable container</b>	<ul style="list-style-type: none"> <li>- Polyethylene or polypropylene container.</li> <li>- Check all containers are clearly labelled and free from leaks.</li> </ul>
<b>Storage incompatibility</b>	None known
<b>Hazard categories in accordance with Regulation (EC) No 1272/2008</b>	Not Available
<b>Qualifying quantity (tonnes) of dangerous substances as referred to in Article 3(10) for the application of</b>	Not Available

**7.3. Specific end use(s)**

See section 1.2

**SECTION 8. Exposure controls / personal protection**

**8.1. Control parameters**

<b>Ingredient</b>	<b>DNELs Exposure Pattern Worker</b>	<b>PNECs Compartment</b>
Guanidine (hydrochloride)	Not Available	Not Available

\* Values for General Population

**Occupational Exposure Limits (OEL)**

**INGREDIENT DATA**

<b>Source</b>	<b>Ingredient</b>	<b>Material name</b>	<b>TWA</b>	<b>STEL</b>	<b>Peak</b>	<b>Notes</b>
Not available	Not Available	Not Available	Not Available	Not Available	Not Available	Not Available

**Emergency Limits**

<b>Ingredient</b>	<b>TEEL-1</b>	<b>TEEL-2</b>	<b>TEEL-3</b>
Guanidine (hydrochloride)	Not Available	Not Available	Not Available

<b>Ingredient</b>	<b>Original IDLH</b>	<b>Revised IDLH</b>
Guanidine (hydrochloride)	Not Available	Not Available

**8.2. Exposure controls**

Engineering controls are used to remove a hazard or place a barrier between the worker and the hazard. Well-designed engineering controls can be highly effective in protecting workers and will typically be independent of worker interactions to provide this high level of protection.

The basic types of engineering controls are:

- Process controls which involve changing the way a job activity or process is done to reduce the risk.
- Enclosure and/or isolation of emission source which keeps a selected hazard "physically" away from the worker and ventilation that strategically "adds" and "removes" air in the work environment. Ventilation can remove or dilute an air contaminant if designed properly. The design of a ventilation system must match the particular process and chemical or contaminant in use.
- Employers may need to use multiple types of controls to prevent employee overexposure.

General exhaust is adequate under normal operating conditions. If risk of overexposure exists, wear SAA approved respirator. Correct fit is essential to obtain adequate protection. Provide adequate ventilation in warehouse or closed storage areas. Air contaminants generated in the workplace possess varying "escape" velocities which, in turn, determine the "capture velocities" of fresh circulating air required to effectively remove the contaminant.


- Use in a fume hood where applicable.
- Ensure laboratory is equipped with safety shower and eye wash station.

**8.2.1. Appropriate engineering controls**

<b>Type of contaminant</b>	<b>Air Speed</b>
solvent, vapours, degreasing etc., evaporating from tank (in still air)	0.25 – 0.50m/s (50 – 100 f/min)
aerosols, fumes from pouring operations, intermittent container filling, low speed conveyer transfers, welding, spray drift, plating acid fumes, pickling (released at low velocity into zone of active generation)	0.50 - 1 m/s (100 – 200 f/min)
direct spray, spray painting in shallow booths, drum filling, conveyer loading, crusher dusts, gas discharge (active generation into zone of rapid air motion)	1 - 2.50 m/s (200 - 500 f/min)
grinding, abrasive blasting, tumbling, high speed wheel generated dusts (released at high initial velocity into zone of very high rapid air motion).	2.50 -10 m/s (500 – 2000 f/min)

Within each range the appropriate value depends on:

<b>Lower end of range</b>	<b>Upper end of range</b>
1: Room air currents minimal or favourable to capture	1: Disturbing room air currents
2: Contaminants of low toxicity or of nuisance value only	2: Contaminants of high toxicity
3: Intermittent, low production.	3: High production, heavy use
4: Large hood or large air mass in motion	4: Small hood - local control only

	<p>Simple theory shows that air velocity falls rapidly with distance away from the opening of a simple extraction pipe. Velocity generally decreases with the square of distance from the extraction point (in simple cases). Therefore the air speed at the extraction point should be adjusted, accordingly, after reference to distance from the contaminating source. The air velocity at the extraction fan, for example, should be a minimum of 1-2 m/s (200-400 f/min.) for extraction of solvents generated in a tank 2 meters distant from the extraction point. Other mechanical considerations, producing performance deficits within the extraction apparatus, make it essential that theoretical air velocities are multiplied by factors of 10 or more when extraction systems are installed or used.</p>
<b>8.2.2. Personal protection</b>	
<b>Eye and face protection</b>	<ul style="list-style-type: none"> <li>- Safety glasses with side shields</li> <li>- Chemical goggles</li> </ul> <p>Contact lenses may pose a special hazard. Soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of lenses or restrictions on use, should be created for each workplace or task. This should include a review of lens absorption and adsorption for the class of chemicals in use and an account of injury experience. Medical and first-aid personnel should be trained in their removal and suitable equipment should be readily available. In the event of chemical exposure, begin eye irrigation immediately and remove contact lenses as soon as practicable. Lens should be removed at first signs of eye redness or irritation. Lens should be removed in a clean environment only after workers have washed their hands thoroughly. [ CDC NIOSH Current Intelligence Bulletin 59], [AS/NZS 1336 or national equivalent ]</p>
<b>Skin protection</b>	See Hand protection below
<b>Hand / feet protection</b>	<ul style="list-style-type: none"> <li>- Wear chemical protective gloves, e.g. PVC</li> <li>- Wear safety footwear or safety gumboots, e.g. Rubber</li> </ul> <p>The selection of suitable gloves does not only depend on the material, but also on further marks of quality which vary from manufacturer to manufacturer. Where the chemical is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.</p> <p>The exact break through time for substances has to be obtained from the manufacturer of the protective gloves and has to be observed when making a final choice.</p> <p>Personal hygiene is a key element of effective hand care. Gloves must only be worn on clean hands. After using gloves, hands should be washed and dried thoroughly. Application of a non-perfumed moisturiser is recommended.</p> <p>Suitability and durability of glove type is dependent on usage. Important factors in the selection of gloves include:</p> <ul style="list-style-type: none"> <li>· frequency and duration of contact,</li> <li>· chemical resistance of glove material,</li> <li>· glove thickness and</li> <li>· dexterity</li> </ul> <p>Select gloves tested to a relevant standard (e.g. Europe EN 374, US F739, AS/NZS 2161.1 or national equivalent).</p> <ul style="list-style-type: none"> <li>- When prolonged or frequently repeated contact may occur, a glove with a protection class of 5 or higher (breakthrough time greater than 240 minutes according to EN 374, AS/NZS 2161.10.1 or national equivalent) is recommended.</li> <li>- When only brief contact is expected, a glove with a protection class of 3 or higher (breakthrough time greater than 60 minutes according to EN 374, AS/NZS 2161.10.1 or national equivalent) is recommended.</li> <li>- Some glove polymer types are less affected by movement and this should be taken into account when considering gloves for long-term use.</li> <li>- Contaminated gloves should be replaced.</li> </ul> <p>As defined in ASTM F-739-96 in any application, gloves are rated as:</p> <ul style="list-style-type: none"> <li>- Excellent when breakthrough time &gt; 480 min</li> <li>- Good when breakthrough time &gt; 20 min</li> <li>- Fair when breakthrough time &lt; 20 min</li> <li>- Poor when glove material degrades</li> </ul> <p>For general applications, gloves with a thickness typically greater than 0.35 mm, are recommended.</p> <p>It should be emphasised that glove thickness is not necessarily a good predictor of glove resistance to a specific chemical, as the permeation efficiency of the glove will be dependent on the exact composition of the glove material. Therefore, glove selection should also be based on consideration of the task requirements and knowledge of breakthrough times.</p> <p>Glove thickness may also vary depending on the glove manufacturer, the glove type and the glove model. Therefore, the manufacturers technical data should always be taken into account to ensure selection of the most appropriate glove for the task.</p> <p>Note: Depending on the activity being conducted, gloves of varying thickness may be required for specific tasks. For example:</p> <ul style="list-style-type: none"> <li>- Thinner gloves (down to 0.1 mm or less) may be required where a high degree of manual dexterity is needed. However, these gloves are only likely to give short duration protection and would normally be just for single use applications, then disposed of.</li> <li>- Thicker gloves (up to 3 mm or more) may be required where there is a mechanical (as well as a chemical) risk i.e. where there is abrasion or puncture potential</li> </ul> <p>Use nitrile rubber, NBR gloves Recommended thickness =&gt; 0.11 mm Value for permeation: Level =&gt; 480 min</p>
<b>Body protection</b>	See Other protection below

<b>Other protection</b>	<p>No special equipment is needed when handling small quantities.</p> <p><b>Otherwise:</b></p> <ul style="list-style-type: none"> <li>- Overalls</li> <li>- Barrier cream</li> <li>- Eyewash unit</li> </ul>
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### 8.2.3. Environmental exposure controls

See section 12

## SECTION 9. Physical and chemical properties

### 9.1. Information on basic physical and chemical properties

<b>Appearance</b>	Colourless		
<b>Physical state</b>	Liquid	<b>Relative density (Water = 1)</b>	Not Available
<b>Odour</b>	Not Available	<b>Partition coefficient n-octanol / water</b>	Not Available
<b>Odour threshold</b>	Not Available	<b>Auto-ignition temperature (°C)</b>	Not Available
<b>pH (as supplied)</b>	Not Available	<b>Decomposition temperature (°C)</b>	Not Available
<b>Melting point / freezing point (°C)</b>	Not Available	<b>Viscosity (cSt)</b>	Not Available
<b>Initial boiling point and boiling range (°C)</b>	Not Available	<b>Molecular weight (g/mol)</b>	Not Available
<b>Flash point (°C)</b>	Not Available	<b>Taste</b>	Not Available
<b>Evaporation rate</b>	Not Available	<b>Explosive properties</b>	Not Available
<b>Flammability</b>	Not Available	<b>Oxidizing properties</b>	Not Available
<b>Upper Explosive Limit (%)</b>	Not Available	<b>Surface Tension (dyn/cm or mN/m)</b>	Not Available
<b>Lower Explosive Limit (%)</b>	Not Available	<b>Volatile Component (%vol)</b>	Not Available
<b>Vapour pressure (kPa)</b>	Not Available	<b>Gas group</b>	Not Available
<b>Solubility in water</b>	Not Applicable	<b>pH as a solution (1%)</b>	Not Available
<b>Vapour density (Air = 1)</b>	Not Available	<b>VOC g/L</b>	Not Available
<b>Nanoform Solubility</b>	Not Available	<b>Nanoform Particle Characteristics</b>	Not Available
<b>Particle Size</b>	Not Available		

### 9.2. Other information

Not Available

## SECTION 10. Stability and reactivity

<b>10.1. Reactivity</b>	See section 7.2
<b>10.2. Chemical stability</b>	Product is considered stable under recommended storage conditions
<b>10.3. Possibility of hazardous reactions</b>	See section 7.2
<b>10.4. Conditions to avoid</b>	See section 7.2
<b>10.5. Incompatible materials</b>	See section 7.2
<b>10.6. Hazardous decomposition products</b>	See section 5.3

**SECTION 11. Toxicological information****11.1. Information on toxicological effects**

<b>Inhaled</b>	The material is not thought to produce either adverse health effects or irritation of the respiratory tract following inhalation (as classified by EC Directives using animal models). Nevertheless, good hygiene practice requires that exposure be kept to a minimum and that suitable control measures be used in an occupational setting.
<b>Ingestion</b>	The material has NOT been classified by EC Directives or other classification systems as 'harmful by ingestion'. This is because of the lack of corroborating animal or human evidence.
<b>Skin Contact</b>	The material is not thought to produce either adverse health effects or irritation of the respiratory tract following inhalation (as classified by EC Directives using animal models). Nevertheless, good hygiene practice requires that exposure be kept to a minimum and that suitable control Measures be used in an occupational setting.
<b>Eye</b>	Although the liquid is not thought to be an irritant (as classified by EC Directives), direct contact with the eye may produce transient discomfort characterized by tearing or conjunctival redness (as with windburn).
<b>Chronic</b>	Long-term exposure to the product is not thought to produce chronic effects adverse to the health (as classified by EC Directives using animal models); nevertheless exposure by all routes should be minimised as a matter of course.

GH Wash	TOXICITY		IRRITATION	
		Not Available		Not Available
Guanidine (hydrochloride)	TOXICITY		IRRITATION	
	Oral (Rat) LD50:	773,6 mg/kg	Not Available	
	Inhalation (Rat) LC50	3,181 mg/L	Not Available	

**Legend:**  
1. Value obtained from Europe ECHA Registered Substances - Acute toxicity  
2. Value obtained from RTECS - Register of Toxic Effect of chemical Substances

Guanidine (hydrochloride)	Not Available
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<b>Acute Toxicity</b>	✓	<b>Carcinogenicity</b>	✗
<b>Skin Irritation/Corrosion</b>	✓	<b>Reproductivity</b>	✗
<b>Serious Eye Damage/Irritation</b>	✓	<b>STOT - Single Exposure</b>	✓
<b>Respiratory or Skin sensitisation</b>	✗	<b>STOT - Repeated Exposure</b>	✓
<b>Mutagenicity</b>	✗	<b>Aspiration Hazard</b>	✗
		<b>Legend:</b>	✗ Data either not available or does not fill the criteria for classification
			✓ Data available to make classification

**11.2. Information on other hazards****11.2.1 Endocrine Disruption Properties**

Not Available

**11.2.2 Other information**

See section 11.1

**SECTION 12. Ecological information****12.1 Toxicity**

GH Wash	Endpoint	Test duration (hr)	Species	Value	Source
GH Wash	Not Available	Not Available	Not Available	Not Available	Not Available
Guanidine (hydrochloride)	Endpoint	Test duration (hr)	Species	Value	Source
Guanidine (hydrochloride)	NOEC	72	Algae or other aquatic plants	6,3 mg/	7
	EC50	72	Algae or other aquatic plants	33,5 mg/L	7

**Legend:**

Extracted from:  
 1. IUCLID Toxicity Data  
 2. Europe ECHA Registered Substances - Ecotoxicological Information - Aquatic Toxicity  
 3. US EPA, Ecotox database - Aquatic Toxicity Data  
 4. ECETOC Aquatic Hazard Assessment Data  
 5. NITE (Japan) - Bioconcentration Data  
 6. METI (Japan) - Bioconcentration Data  
 7. Vendor Data

**12.2. Persistence and degradability**

Ingredient	Persistence: Water/Soil	Persistence: Air
Guanidine (hydrochloride)	Not Available	Not Available

**12.3. Bioaccumulative potential**

Ingredient	Bioaccumulation
Guanidine (hydrochloride)	Not Available

**12.4. Mobility in soil**

Ingredient	Mobility
Guanidine (hydrochloride)	Not Available

**12.5. Results of PBT and vPvB assessment**

	P	B	T
Relevant available data	Not Available	Not Available	Not Available
PBT	✘	✘	✘
vPvB	✘	✘	✘
PBT Criteria fulfilled?	No		
vPvB	No		

**12.6. Endocrine Disruption Properties**

Not Available

**12.7. Other adverse effects**

Not Available

**SECTION 13. Disposal considerations**

**13.1. Waste treatment methods**

<b>Product / Packaging disposal</b>	<p>Legislation addressing waste disposal requirements may differ by country, state and/ or territory. Each user must refer to laws operating in their area. In some areas, certain wastes must be tracked.</p> <p>A Hierarchy of Controls seems to be common - the user should investigate:</p> <ul style="list-style-type: none"> <li>- Reduction</li> <li>- Reuse</li> <li>- Recycling</li> <li>- Disposal (if all else fails)</li> </ul> <p>This material may be recycled if unused, or if it has not been contaminated so as to make it unsuitable for its intended use. If it has been contaminated, it may be possible to reclaim the product by filtration, distillation or some other means. Shelf life considerations should also be applied in making decisions of this type.</p> <p>Note that properties of a material may change in use, and recycling or reuse may not always be appropriate.</p> <ul style="list-style-type: none"> <li>- <b>DO NOT</b> allow wash water from cleaning or process equipment to enter drains.</li> <li>- It may be necessary to collect all wash water for treatment before disposal.</li> <li>- In all cases disposal to sewer may be subject to local laws and regulations and these should be considered first.</li> <li>- Where in doubt contact the responsible authority.</li> <li>- Recycle wherever possible.</li> <li>- Consult manufacturer for recycling options or consult local or regional waste management authority for disposal if no suitable treatment or disposal facility can be identified.</li> <li>- Dispose of by: burial in a land-fill specifically licensed to accept chemical and / or pharmaceutical wastes or incineration in a licensed apparatus (after admixture with suitable combustible material).</li> <li>- Decontaminate empty containers. Observe all label requirements safeguards until containers are cleaned and destroyed</li> </ul>
	<p><b>Waste treatment options</b> Not Available</p> <p><b>Sewage disposal options</b> Not Available</p>

**SECTION 14. Transport information**

**Labels Required**

<b>Marine Pollutant</b>	NO
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**Land transport (ADR): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS**

14.1. <b>UN number</b>	Not Applicable
14.2. <b>UN proper shipping name</b>	Not Applicable
14.3. <b>Transport hazard class(es)</b>	Class Not Applicable
	Sub risk Not Applicable
14.4. <b>Packing group</b>	Not Applicable
14.5. <b>Environmental hazard</b>	Not Applicable
14.6. <b>Special precautions for user</b>	Hazard identification (Kemler) Not Applicable
	Classification code Not Applicable
	Hazard Label Not Applicable
	Special provisions Not Applicable
	Limited quantity Not Applicable
	Tunnel Restriction Code Not Applicable

**Air transport (ICAO-IATA / DGR): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS**

14.1. <b>UN number</b>	Not Applicable
14.2. <b>UN proper shipping name</b>	Not Applicable
14.3. <b>Transport hazard class(es)</b>	ICAO/IATA Class Not Applicable
	ICAO / IATA Sub risk Not Applicable
	ERG Code Not Applicable
14.4. <b>Packing group</b>	Not Applicable
14.5. <b>Environmental hazard</b>	Not Applicable
14.6. <b>Special precautions for user</b>	Special provisions Not Applicable
	Cargo Only Packing Instructions Not Applicable
	Cargo Only Maximum Qty / Pack Not Applicable
	Passenger and Cargo Packing Instructions Not Applicable
	Passenger and Cargo Maximum Qty / Pack Not Applicable
	Passenger and Cargo Limited Quantity Packing Instructions Not Applicable
	Passenger and Cargo Limited Maximum Qty / Pack Not Applicable

**Sea transport (IMDG-Code / GGVSee): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS**

14.1. UN number	Not Applicable	
14.2. UN proper shipping name	Not Applicable	
14.3. Transport hazard class(es)	IMDG Class	Not Applicable
	IMDG Sub risk	Not Applicable
14.4. Packing group	Not Applicable	
14.5. Environmental hazard	Not Applicable	
14.6. Special precautions for user	EMS Number	Not Applicable
	Special provisions	Not Applicable
	Limited Quantities	Not Applicable

**Inland waterways transport (ADN): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS**

14.1. UN number	Not Applicable	
14.2. UN proper shipping name	Not Applicable	
14.3. Transport hazard class(es)	Not Applicable	Not Applicable
14.4. Packing group	Not Applicable	
14.5. Environmental hazard	Not Applicable	
14.6. Special precautions for user	Classification code	Not Applicable
	Special provisions	Not Applicable
	Limited quantity	Not Applicable
	Equipment required	Not Applicable
	Fire cones number	Not Applicable

**14.7. Transport in bulk according to Annex II of MARPOL and the IBC code**

Not Applicable

**SECTION 15. Regulatory information****15.1. Safety, health and environmental regulations / legislation specific for the substance or mixture**

This safety data sheet is in compliance with the following EU legislation and its adaptations - as far as applicable - : Directives 98/24/EC, - 92/85/EEC, - 94/33/EC, - 2008/98/EC, - 2010/75/EU; Commission Regulation (EU) 2020/878; Regulation (EC) No 1272/2008 as updated through ATPs.

**Information according to 2012/18/EU (Seveso III):**

Seveso Category	Not Available
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**15.2. Chemical safety assessment**

No Chemical Safety Assessment has been carried out for this substance/mixture by the supplier.

**ECHA SUMMARY**

Not Available

**National Inventory Status**

National Inventory	Status
Australia - AIIC / Australia Non-Industrial Use	Yes
Canada - DSL	Yes
Canada - NDSL	Yes
China - IECSC	Yes
Europe - EINEC / ELINCS / NLP	Yes
Japan - ENCS	Yes
Korea - KECL	Yes
New Zealand - NZIoC	Yes
Philippines - PICCS	Yes
USA - TSCA	Yes
Taiwan - TCSI	Yes
Mexico - INSQ	Yes
Vietnam - NCI	Yes
Russia - FBEPH	Yes
<b>Legend:</b>	Yes = All CAS declared ingredients are on the inventory No = One or more of the CAS listed ingredients are not on the inventory. These ingredients may be exempt or will require registration.

**SECTION 16. Other information****Full text Risk and Hazard codes**

<b>H302</b>	Harmful if swallowed
<b>H315</b>	Causes skin irritation
<b>H319</b>	Causes serious eye irritation
<b>H332</b>	Harmful if inhaled
<b>H335</b>	May cause respiratory irritation
<b>H373</b>	May cause damage to organs through prolonged or repeated exposure.

**Version Summary**

Version	Date of Update	Sections Updated
1	15/MAY/2025	Initial version

**Other information**

The SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings. Risks may be determined by reference to Exposures Scenarios. Scale of use, frequency of use and current or available engineering controls must be considered. For detailed advice on Personal Protective Equipment, refer to the following EU CEN Standards:

EN 166	Personal Eye protection
EN 340	Protective Clothing
EN 374	Protective Gloves against chemicals and micro-organisms
EN 13832	Footwear protecting against chemicals
EN 133	Respiratory protective devices

**Definitions and abbreviations**

Abbreviation	Definition
ACGIH	American Conference of Governmental Industrial Hygienists
AIIC	Australian Inventory of Industrial Chemicals
BCF	BioConcentration Factors
BEI	Biological Exposure Index
DSL	Domestic Substances List
EINECS	European Inventory of Existing Commercial chemical Substances
ENCS	Existing and New Chemicals Substances Inventory
ELINCS	European List of Notified Chemical Substances
ES	Exposure Standard
FBEPH	Russian Register of Potentially Hazardous Chemical and Biological Substances
IARC	International Agency for Research on cancer
IDLH	Immediately Dangerous to Life or Health Concentrations
IECSC	Inventory of Existing Chemical Substances in China
INSQ	Inventario Nacional de Sustancias Quimicas
KECI	Korea Existing Chemicals Inventory
LOAEL	Lowest Observed Adverse Effect Level
LOD	Limit Of Detection
NCI	National Chemical Inventory
NDSL	Non-Domestic Substances List
NLP	No-Longer Polymers
NOAEL	No Observed Adverse Effect Level
NZIoC	New Zealand Inventory of Chemicals
OSF	Odour Safety Factor
OTV	Odour Threshold Value
PC	Permissible Concentration
PICCS	Philippine Inventory of Chemicals and Chemical Substances
STEL	Short Term Exposure Limit
TCSI	Taiwan Chemical Substance Inventory
TEEL	Temporary Emergency Exposure Limit
TLV	Threshold Limit Value
TSCA	Toxic Substances Control Act
TWA	Time Weighted Average

## Deckblatt zum Sicherheitsdatenblatt

Erstellt am 02.03.2026 Version 01.00

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### Produktidentifikation:

Handelsname LG Lysis  
Verwendungszweck Ausschliesslich und nur für den Laborgebrauch zu verwenden. Nur für Forschungszwecke geeignet, Diagnostikzwecke sind von der Verwendung ausgeschlossen.

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### Lieferant, der das Sicherheitsdatenblatt übermittelt:

INTEGRA Biosciences AG  
Tardisstrasse 201,  
7205 Zizers, Schweiz  
www.integra-biosciences.com  
Tel.: +41 (0)81 286 95 30  
info-ch@integra-biosciences.com

**Nationale Notfallnummer: 145** (24h erreichbar, Tox Info Suisse, Zürich; für Anrufe aus der Schweiz, Auskünfte auf Deutsch, Französisch und Italienisch)

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### Informationen für die Verwender betreffend:

#### Abschnitt 7 – Handhabung und Lagerung

Allfällig relevante schweizerische Anforderungen des Arbeitnehmerschutzes und des Umweltschutzes betreffend die Handhabung und Lagerung sind zu berücksichtigen.

#### Abschnitt 8 – Begrenzung und Überwachung der Exposition / Persönliche Schutzausrüstung

Die im Sicherheitsdatenblatt angegebenen Grenzwerte basieren auf den einschlägigen EG-/EU-Vorschriften. Für den Arbeitnehmerschutz in der Schweiz sind zusätzlich die Vorgaben der SUVA zu berücksichtigen. Gegebenenfalls ist die persönliche Schutzausrüstung zu spezifizieren.

#### Abschnitt 13 – Hinweise zur Entsorgung

Hinweise zur Entsorgung sind gemäß der Technischen Verordnung über Abfälle (TVA), der Verordnung über den Verkehr mit Abfällen (VeVA) sowie der Verordnung des UVEK über Listen zum Verkehr mit Abfällen (LVA) zu berücksichtigen.

#### Abschnitt 15 – Rechtsvorschriften

Allfällig relevante schweizerische Vorschriften, z. B. betreffend Luftreinhalte-Verordnung, Störfallverordnung (Mengenschwellen), Abgabevorschriften, Verwendungsbeschränkungen oder -verbote sowie allfällige Zulassungen (z. B. Biozidprodukte), sind zu berücksichtigen.



Version No: 1

Issue date: 26/AUG/2025

Revision date: Not Applicable

Safety Data Sheet (Conforms to Annex II of REACH (1907/2006) - Regulation 2020/878)

**SECTION 1. Identification of the substance / mixture and of the company / undertaking****1.1. Product Identifier**

Product name	LG Lysis
Synonyms	Not Available
Other means of identification	Not Available

**1.2. Relevant identified uses of the substance or mixture and uses advised against**

Relevant identified uses	Laboratory use.
Uses advised against	Not Applicable

**1.3. Details of the manufacturer or supplier of the safety data sheet**

Registered company name	CleanNA
Address	Coenecoop 75, 2741 PH, Waddinxveen, The Netherlands
Telephone	+31 (0) 182 22 33 50
Fax	+31 (0) 182 22 33 98
Website	<a href="http://www.cleanna.com">www.cleanna.com</a>
Email	<a href="mailto:info@cleanna.com">info@cleanna.com</a>

**1.4. Emergency telephone number**

Emergency telephone numbers	112 (European emergency number)
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**SECTION 2. Hazards identification****2.1. Classification of the substance or mixture**

Classification according to regulation (EC) No 1272/2008 [CLP] and amendments	Not Applicable
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**2.2. Label elements**

Hazard pictogram(s)	Not Applicable
Signal word	Not Applicable

**Hazard statement(s)**

	Not Applicable
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**Supplementary statement(s)**

	Not Applicable
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**Precautionary statement(s) Prevention**

	Not Applicable
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**Precautionary statement(s) Response**

	Not Applicable
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**Precautionary statement(s) Storage**

	Not Applicable
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**Precautionary statement(s) Disposal**

Not Applicable

**2.3. Other hazards**

Cumulative effects may result following exposure \*

REACH – Art. 57-59: The mixture does not contain Substances of Very High Concern (SVHC) at the SDS issue date.

**SECTION 3. Composition / information on ingredients**

**3.1 Substances**

See 'Composition on ingredients' in Section 3.2

**3.2 Mixtures**

1. CAS No 2. EC No 3. Index No 4. REACH No	%[weight]	Name	Classification according to regulation (EC) No 1272/2008 [CLP] and amendments	SCL / M-Factor	Nanoform Particle Characteristics
1. Not Available 2. Not Available 3. Not Available 4. Not Available	Not Applicable	Not Applicable	Not Applicable	Not Available	Not Available
<b>Legend:</b> 2. Classification drawn from Regulation (EU) No 1272/2008 - Annex VI; 3. Classification drawn from C&L; * EU IOELVs available; [e] Substance identified as having endocrine disrupting properties					

**SECTION 4. First aid measures**

**4.1. Description of first aid measures**

<b>Eye Contact</b>	If this product comes in contact with eyes: <ul style="list-style-type: none"> <li>- Wash out immediately with water</li> <li>- If irritation continues seek medical attention</li> <li>- Removal of contact lenses after an eye injury should only be undertaken by skilled personnel</li> </ul>
<b>Skin Contact</b>	If skin contact occurs: <ul style="list-style-type: none"> <li>- Immediately remove all contaminated clothing including footwear</li> <li>- Flush skin and hair with running water (and soap if available)</li> <li>- Seek medical attention in case of irritation</li> </ul>
<b>Inhalation</b>	<ul style="list-style-type: none"> <li>- If fumes or combustion products are inhaled remove from contaminated area.</li> <li>- Other measures are usually unnecessary.</li> </ul>
<b>Ingestion</b>	<ul style="list-style-type: none"> <li>- Immediately give a glass of water</li> <li>- First aid is no generally required. If in doubt, contact a POISONS INFORMATION CENTER or a doctor</li> </ul>

**4.2 Most important symptoms and effects, both acute and delayed**

See Section 11

**4.3. Indication of any immediate medical attention and special treatment needed**

Treat symptomatically

**SECTION 5. Firefighting measures**

**5.1 Extinguishing media**

- There is no restriction on the type of extinguisher which may be used.
- Use extinguishing media suitable for surrounding area.

**5.2 Special hazards arising from the substrate or mixture**

<b>Fire Incompatibility</b>	None known.
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**5.3. Advice for firefighters**

<b>Fire Fighting</b>	<ul style="list-style-type: none"> <li>- Alert Fire Brigade and tell them location and nature of hazard</li> <li>- Wear breathing apparatus plus protective gloves in the event of a fire</li> <li>- Prevent, by any means available, spillage from entering drains or water courses</li> <li>- Use firefighting procedures suitable for surrounding area</li> <li>- <b>DO NOT</b> approach container suspected to be hot</li> <li>- Cool fire exposed containers with water spray from a protected location</li> <li>- If safe to do so, remove containers from path of fire</li> <li>- Equipment should be thoroughly decontaminated after use</li> </ul>
<b>Fire/Explosion Hazard</b>	<ul style="list-style-type: none"> <li>- Non Combustible</li> <li>- Not considered a significant fire risk, however containers may burn</li> </ul> <p>May emit corrosive fumes</p>

**SECTION 6. Accidental release measures**

**6.1 Personal precautions, protective equipment and emergency procedures**

See section 8

**6.2 Environmental precautions**

See section 12

**6.3 Methods and material for containment and cleaning up**

<b>Minor Spills</b>	<ul style="list-style-type: none"> <li>- Clean up all spills immediately.</li> <li>- Avoid breathing vapours and contact with skin and eyes.</li> <li>- Control personal contact with the substance, by using protective equipment.</li> <li>- Contain and absorb spill with sand, earth, inert material or vermiculite</li> <li>- Wipe up.</li> <li>- Place in a suitable, labelled container for waste disposal.</li> </ul>
<b>Major Spills</b>	<p>Moderate hazard</p> <ul style="list-style-type: none"> <li>- Clear area of personnel and move upwind.</li> <li>- Alert Fire Brigade and tell them location and nature of hazard</li> <li>- Wear breathing apparatus plus protective gloves</li> <li>- Prevent, by any means available, spillage from entering drains or water course</li> <li>- Stop leak if safe to do so</li> <li>- Contain spill with sand, earth or vermiculite</li> <li>- Collect recoverable product into labelled containers for recycling</li> <li>- Neutralize / decontaminate residue (see section 13 for specific agent)</li> <li>- Collect solid residues and seal in labelled drums for disposal</li> <li>- Wash area and prevent runoff into drains</li> <li>- After clean-up operations decontaminate and launder all protective clothing and equipment before storing and reuse</li> <li>- If contamination of drains or waterways occurs, advise emergency services</li> </ul>

**6.4. Reference to other sections**

Personal Protective Equipment advice is contained in Section 8 of the SDS.

**SECTION 7. Handling and storage**

**7.1. Precautions for safe handling**

<b>Safe handling</b>	<ul style="list-style-type: none"> <li>- Avoid all personal contact including inhalation</li> <li>- Wear protective clothing when risk of exposure occurs</li> <li>- Use in a well-ventilated area</li> <li>- Avoid contact with moisture</li> <li>- Avoid contact with incompatible materials</li> <li>- When handling <b>DO NOT</b> eat, drink or smoke</li> <li>- Keep containers securely sealed when not in use</li> <li>- Avoid physical damage to containers</li> <li>- Always wash hands with soap and water after handling</li> <li>- Work clothes should be laundered separately. Launder contaminated clothing before reuse</li> <li>- Use good occupational work practice</li> <li>- Observe manufacturer's storage and handling recommendations contained within this SDS</li> <li>- Atmosphere should be regularly against established exposure standards to ensure working conditions are maintained</li> <li>- <b>DO NOT</b> allow clothing wet with material to stay in contact with skin</li> </ul>
<b>Fire and explosion protection</b>	See section 5
<b>Other information</b>	None known

**7.2. Conditions for safe storage, including any incompatibilities**

<b>Suitable container</b>	<ul style="list-style-type: none"> <li>- Polyethylene or polypropylene container</li> <li>- Packaging as recommended by manufacturer</li> <li>- Check all containers are clearly labelled and free from leaks</li> </ul>
<b>Storage incompatibility</b>	None known
<b>Hazard categories in accordance with Regulation (EC) No 1272/2008</b>	Not available
<b>Qualifying quantity (tonnes) of dangerous substances as referred to in Article 3(10) for the application of</b>	Not available

**7.3. Specific end use(s)**

See section 1.2

**SECTION 8. Exposure controls / personal protection**

**8.1. Control parameters**

Ingredient	DNELs Exposure Pattern Worker	PNECs Compartment
Not Available	Not Available	Not Available

\* Values for General Population

**Occupational Exposure Limits (OEL)**

**INGREDIENT DATA**

Source	Ingredient	Material name	TWA	STEL	Peak	Notes
Not Available	Not Available	Not Available	Not Available	Not Available	Not Available	Not Available

**Emergency Limits**

Ingredient	TEEL-1	TEEL-2	TEEL-3
LG Lysis	Not Available	Not Available	Not Available

Ingredient	Original IDLH	Revised IDLH
LG Lysis	Not Available	Not Available

**8.2. Exposure controls**

**8.2.1 Appropriate engineering controls**

**8.2.2. Personal protection**

**Eye and face protection**

**Skin protection**

**Hand / feet protection**

Engineering controls are used to remove a hazard or place a barrier between the worker and the hazard. Well-designed engineering controls can be highly effective in protecting workers and will typically be independent of worker interactions to provide this high level of protection. The basic types of engineering controls are:

Process controls which involve changing the way a job activity or process is done to reduce the risk.

Enclosure and/or isolation of emission source which keeps a selected hazard "physically" away from the worker and ventilation that strategically "adds" and "removes" air in the work environment. Ventilation can remove or dilute an air contaminant if designed properly. The design of a ventilation system must match the particular process and chemical or contaminant in use.

Employers may need to use multiple types of controls to prevent employee overexposure.

General exhaust is adequate under normal operating conditions. If risk of overexposure exists, wear SAA approved respirator. Correct fit is essential to obtain adequate protection. Provide adequate ventilation in warehouse or closed storage areas. Air contaminants generated in the workplace possess varying "escape" velocities which, in turn, determine the "capture velocities" of fresh circulating air required to effectively remove the contaminant.

Type of contaminant	Air Speed
Solvent, vapours, degreasing etc. evaporating from tank (in still air)	0.25 – 0.5 m/s (50 – 100 f/min)
Aerosols, fumes from pouring operations, intermittent container filling, low speed conveyer transfers, welding, spray drift, plating acid fumes, pickling (released at low velocity into zone of active generation)	0.5 – 1 m/s (100 – 200 f/min)
Direct spray, spray painting in shallow booths, drum filling, conveyer loading, crusher debts, gas discharge (active generation into zone of rapid air motion)	1 – 2.5 m/s (200 – 500 f/min)
Grinding, abrasive blasting, tumbling, high speed generated dusts (released at high velocity into zone of very high rapid air motion)	2.5 – 10 m/s (500 – 200 f/min)

Within each range the appropriate value depends to:

Lower end of range	Upper end of range
1: Room air currents minimal of favourable to capture	1: Disturbing room air currents
2: Contaminants of low toxicity or of nuisance value only	2: Contaminants of high toxicity
3: Intermittent, low production	3: High Production, heavy use
4: Large hood or large air mass in motion	4: Small hood – local control only

Simple theory shows that air velocity falls rapidly with distance away from the opening of a simple extraction pipe. Velocity generally decreases with the square of distance from the extraction point (in simple cases). Therefore the air speed at the extraction point should be adjusted, accordingly, after reference to distance from the contaminating source. The air velocity at the extraction fan, for example, should be a minimum of 1-2 m/s (200-400 f/min) for extraction of solvents generated in a tank 2 meters distant from the extraction point. Other mechanical considerations, producing performance deficits within the extraction apparatus, make it essential that theoretical air velocities are multiplied by factors of 10 or more when extraction systems are installed or used.



- Chemical goggles.
  - Safety glasses with side shields
  - Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of lenses or restrictions on use, should be created for each workplace or task. This should include a review of lens absorption and adsorption for the class of chemicals in use and an account of injury experience. Medical and first-aid personnel should be trained in their removal and suitable equipment should be readily available. In the event of chemical exposure, begin eye irrigation immediately and remove contact lens as soon as practicable. Lens should be removed at the first signs of eye redness or irritation - lens should be removed in a clean environment only after workers have washed hands thoroughly.
- [CDC NIOSH Current Intelligence Bulletin 59], [AS/NZS 1336 or national equivalent]

- See Hand protection below
- Wear chemical protective gloves, e.g. PVC
  - Wear safety footwear/gumboots, e.g. Rubber

The selection of suitable gloves does not only depend on the material, but also on further marks of quality which vary from manufacturer to manufacturer. Where the chemical is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

The exact break through time for substances has to be obtained from the manufacturer of the protective gloves and has to be observed when making a final choice.

Personal hygiene is a key element of effective hand care. Gloves must only be worn on clean hands. After using gloves, hands should be washed and dried thoroughly. Application of a non-perfumed moisturiser is recommended.

Suitability and durability of glove type is dependent on usage. Important factors in the selection of gloves include:

- frequency and duration of contact,
- chemical resistance of glove material,
- glove thickness and
- dexterity

Select gloves tested to a relevant standard (e.g. Europe EN 374, US F739, AS/NZS 2161.1 or national equivalent).

- When prolonged or frequently repeated contact may occur, a glove with a protection class of 5 or higher (breakthrough time greater than 240 minutes according to EN 374, AS/NZS 2161.10.1 or national equivalent) is recommended.
- When only brief contact is expected, a glove with a protection class of 3 or higher (breakthrough time greater than 60 minutes according to EN 374, AS/NZS 2161.10.1 or national equivalent) is recommended.
- Some glove polymer types are less affected by movement and this should be taken into account when considering gloves for long-term use.
- Contaminated gloves should be replaced.

As defined in ASTM F-739-96 in any application, gloves are rated as:

- Excellent when breakthrough time > 480 min
- Good when breakthrough time > 20 min
- Fair when breakthrough time < 20 min
- Poor when glove material degrades

For general applications, gloves with a thickness typically greater than 0.35 mm, are recommended.

It should be emphasised that glove thickness is not necessarily a good predictor of glove resistance to a specific chemical, as the permeation efficiency of the glove will be dependent on the exact composition of the glove material. Therefore, glove selection should also be based on consideration of the task requirements and knowledge of breakthrough times.

Glove thickness may also vary depending on the glove manufacturer, the glove type and the glove model. Therefore, the manufacturers technical data should always be taken into account to ensure selection of the most appropriate glove for the task.

Note: Depending on the activity being conducted, gloves of varying thickness may be required for specific tasks. For example:

- Thinner gloves (down to 0.1 mm or less) may be required where a high degree of manual dexterity is needed. However, these gloves are only likely to give short duration protection and would normally be just for single use applications, then disposed of.
- Thicker gloves (up to 3 mm or more) may be required where there is a mechanical (as well as a chemical) risk i.e. where there is abrasion or puncture potential

Gloves must only be worn on clean hands. After using gloves, hands should be washed and dried thoroughly. Application of a non-perfumed moisturiser is recommended.

**Body protection** See Other protection below

- Other protection**
- Overalls
  - PVC apron
  - Barrier cream
  - Skin cleansing cream
  - Eye wash unit

**Respiratory protection**

**GLOVE SELECTION INDEX**

Glove selection is based on a modified presentation of the “Forsberg Clothing Performance Index”

The effect(s) of the following substance(s) are taken into account in the **computer-generated** selection: LG Lysis

Material	Performance Index
NATURAL RUBBER	A
NATUREL + NEOPRENE	A
NITRILE	A

A: Best selection                      B: Satisfactory, may degrade after 4 hours continuous immersion                      C: Poor to dangerous choice for other than short term immersion

**NOTE:** As a series of factors will influence the actual performance of the glove, a final solution must be based on detailed observation.

**8.2.3. Environmental exposure controls**

See section 12

**SECTION 9. Physical and chemical properties****9.1. Information on basic physical and chemical properties**

<b>Appearance</b>	Not Available		
<b>Physical state</b>	Liquid	<b>Relative density (Water = 1)</b>	Not Available
<b>Odour</b>	Not Available	<b>Partition coefficient n-octanol / water</b>	Not Available
<b>Odour threshold</b>	Not Available	<b>Auto-ignition temperature (°C)</b>	Not Available
<b>pH (as supplied)</b>	Not Available	<b>Decomposition temperature (°C)</b>	Not Available
<b>Melting point / freezing point (°C)</b>	Not Available	<b>Viscosity (cSt)</b>	Not Available
<b>Initial boiling point and boiling range (°C)</b>	Not Available	<b>Molecular weight (g/mol)</b>	Not Available
<b>Flash point (°C)</b>	Not Available	<b>Taste</b>	Not Available
<b>Evaporation rate</b>	Not Available	<b>Explosive properties</b>	Not Available
<b>Flammability</b>	Not Available	<b>Oxidising properties</b>	Not Available
<b>Upper Explosive Limit (%)</b>	Not Available	<b>Surface Tension (dyn/cm or mN/m)</b>	Not Available
<b>Lower Explosive Limit (%)</b>	Not Available	<b>Volatile Component (%vol)</b>	Not Available
<b>Vapour pressure (kPa)</b>	Not Available	<b>Gas group</b>	Not Available
<b>Solubility in water</b>	Immiscible	<b>pH as a solution (1%)</b>	Not Available
<b>Vapour density (Air = 1)</b>	Not Available	<b>VOC g/L</b>	Not Available
<b>Nanoform Solubility</b>	Not Available	<b>Nanoform Particle Characteristics</b>	Not Available
<b>Particle Size</b>	Not Available		

**9.2. Other information**

Not Available

**SECTION 10. Stability and reactivity**

<b>10.1.Reactivity</b>	See section 7.2
<b>10.2. Chemical stability</b>	<ul style="list-style-type: none"> <li>- Unstable in presence of incompatible materials</li> <li>- Product is considered stable</li> <li>- Hazardous polymerisation will not occur</li> </ul>
<b>10.3. Possibility of hazardous reactions</b>	See section 7.2
<b>10.4. Conditions to avoid</b>	See section 7.2
<b>10.5. Incompatible materials</b>	See section 7.2
<b>10.6. Hazardous decomposition products</b>	See section 5.3

**SECTION 11. Toxicological information**

**11.1. Information on toxicological effects**

<b>Inhaled</b>	The material is not thought to produce adverse health effects or irritation of the respiratory tract (as classified by EC Directives using animal models). Nevertheless, adverse systemic effects have been produced following exposure of animals by at least on other route and good hygiene practice requires that exposure be kept to a minimum and that suitable control measures be used in an occupational setting.	
<b>Ingestion</b>	The material has <b>NOT</b> been classified by ED Directives or other classification systems as "harmful by ingestion". This is because of the lack of corroborating animal or human evidence.	
<b>Skin Contact</b>	Skin contact is not thought to have harmful health effects (as classified under EC Directives) the material may still produce health damage following entry through wounds, lesions or abrasions. There is some evidence to suggest that this material can cause inflammation of the skin on contact in some persons	
<b>Eye</b>	Although the liquid is not thought to be irritant (as classified by EC Directives) direct contact with the eye may produce transient discomfort characterised by tearing or conjunctival redness (as with windburn)	
<b>Chronic</b>	Long-term exposure to the product is not thought to produce chronic effects adverse to the health (as classified by EC Directives using animal models). Nevertheless exposure by all routes should be minimized as a matter of course.	
<b>LG Lysis</b>	<b>TOXICITY</b>	<b>IRRITATION</b>
	Not Available	Not Available
<b>Legend:</b>	1. Value obtained from Europe ECHA Registered Substances - Acute toxicity 2. Value obtained from manufacturer's SDS. Unless otherwise specified data extracted from RTECS - Register of Toxic Effect of chemical Substances	

<b>LG Lysis</b>	<p>The following information refers to contact allergens as a group and may not be specific to this product.</p> <p>Contact allergies quickly manifest themselves as contact eczema, more rarely as urticaria or Quincke's oedema. The pathogenesis of contact eczema involves a cell-mediated (T lymphocytes) immune reaction of the delayed type. Other allergic skin reactions, e.g. contact urticaria, involve antibody-mediated immune reactions. The significance of the contact allergen is not simply determined by its sensitization potential. The distribution of the substance and the opportunities for contact with it are equally important. A weakly sensitizing substance which is widely distributed can be a more important allergen than one with stronger sensitizing potential with which few individuals come into contact. From a clinical point of view, substances are noteworthy if they produce an allergic test reaction in more than 1% of the persons tested.</p>
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Acute Toxicity	✗
Skin Irritation/Corrosion	✗
Serious Eye Damage/Irritation	✗
Respiratory or Skin sensitisation	✗
Mutagenicity	✗

Carcinogenicity	✗
Reproductivity	✗
STOT - Single Exposure	✗
STOT - Repeated Exposure	✗
Aspiration Hazard	✗

**Legend:** ✗ – Data either not available or does not fill the criteria for classification  
 ✓ – Data available to make classification

**11.2. Information on other hazards**

**11.2.1 Endocrine Disruption Properties**

Not Available

**11.2.2 Other Information**

See Section 11.1

**SECTION 12. Ecological information**

**12.1 Toxicity**

	Endpoint	Test duration (hr)	Species	Value	Source
<b>LG Lysis</b>	Not available	Not available	Not available	Not available	Not available
<b>Legend:</b>	Extracted from 1. IUCLID Toxicity Data 2. Europe ECHA Registered Substances - Ecotoxicological Information - Aquatic Toxicity 4. US EPA, Ecotox database - Aquatic Toxicity Data 5. ECETOC Aquatic Hazard Assessment Data 6. NITE (Japan) - Bioconcentration Data 7. METI (Japan) - Bioconcentration Data 8. Vendor Data				

**12.2. Persistence and degradability**

Ingredient	Persistence: Water/Soil	Persistence: Air
	No data available	No data available

**12.3. Bio accumulative potential**

Ingredient	Bioaccumulation
	No data available

12.4. Mobility in soil

Ingredient	Mobility
	No data available

12.5. Results of PBT and vPvB assessment

	P	B	T
Relevant available data	Not Available	Not Available	Not Available
PBT	✗	✗	✗
vPvB	✗	✗	✗
PBT Criteria fulfilled?	No		
vPvB	No		

12.6. Endocrine Disruption Properties

Not Available

12.7. Other adverse effects

One or more ingredients within this SDS has the potential of causing ozone depletion and/or photochemical ozone creation

SECTION 13. Disposal considerations

13.1. Waste treatment methods

	<p>Legislation addressing waste disposal requirements may differ by country, state and/ or territory. Each user must refer to laws operating in their area. In some areas, certain wastes must be tracked.</p> <p>A hierarchy of Controls seems to be common - the user should investigate:</p> <ul style="list-style-type: none"> <li>- Reduction</li> <li>- Reuse</li> <li>- Recycling</li> <li>- Disposal (if all else fails)</li> </ul> <p>This material may be recycled if unused, or if it has not been contaminated so as to make it unsuitable for its intended use. If it has been contaminated, it may be possible to reclaim the product by filtration, distillation or some other means. Shelf life considerations should also be applied in making decisions of this type. Note that properties of a material may change in use, and recycling or reuse may not always be appropriate.</p>
Product / Packaging disposal	<ul style="list-style-type: none"> <li>- <b>DO NOT</b> allow wash water from cleaning or process equipment to enter drains.</li> <li>- It may be necessary to collect all wash water for treatment before disposal.</li> <li>- In all cases disposal to sewer may be subject to local laws and regulations and these should be considered first.</li> <li>- Where in doubt contact the responsible authority.</li> <li>- Recycle wherever possible or consult manufacturer for recycling options.</li> <li>- Consult State Land Waste Authority for disposal.</li> <li>- Dispose of by: burial in a land-fill specifically licensed to accept chemical and / or pharmaceutical wastes or incineration in a licensed apparatus (after admixture with suitable combustible material)</li> <li>- Decontaminate empty containers. Observe all label safeguards until containers are cleaned and destroyed</li> </ul>
Waste treatment options	Not Available
Sewage disposal options	Not Available

SECTION 14 Transport information

Labels Required

Marine Pollutant	NO
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Land transport (ADR): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

14.1. UN number	Not Applicable	
14.2. UN proper shipping name	Not Applicable	
14.3. Transport hazard class(es)	Class	Not Applicable
	Sub risk	Not Applicable
14.4. Packing group	Not Applicable	
14.5. Environmental hazard	Not Applicable	
14.6. Special precautions for user	Hazard identification (Kemler)	Not Applicable
	Classification code	Not Applicable
	Hazard Label	Not Applicable
	Special provisions	Not Applicable
	Limited quantity	Not Applicable
	Tunnel Restriction Code	Not Applicable

**Air transport (ICAO-IATA / DGR): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS**

14.1. UN number	Not Applicable	
14.2. UN proper shipping name	Not Applicable	
14.3. Transport hazard class(es)	ICAO/IATA Class	Not Applicable
	ICAO / IATA Sub risk	Not Applicable
	ERG Code	Not Applicable
14.4. Packing group	Not Applicable	
14.5. Environmental hazard	Not Applicable	
14.6. Special precautions for user	Special provisions	Not Applicable
	Cargo Only Packing Instructions	Not Applicable
	Cargo Only Maximum Qty / Pack	Not Applicable
	Passenger and Cargo Packing Instructions	Not Applicable
	Passenger and Cargo Maximum Qty / Pack	Not Applicable
	Passenger and Cargo Limited Quantity Packing Instructions	Not Applicable
	Passenger and Cargo Limited Maximum Qty / Pack	Not Applicable

**Sea transport (IMDG-Code / GGVSee): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS**

14.1. UN number	Not Applicable	
14.2. UN proper shipping name	Not Applicable	
14.3. Transport hazard class(es)	IMDG Class	Not Applicable
	IMDG Sub risk	Not Applicable
14.4. Packing group	Not Applicable	
14.5. Environmental hazard	Not Applicable	
14.6. Special precautions for user	EMS Number	Not Applicable
	Special provisions	Not Applicable
	Limited Quantities	Not Applicable

**Inland waterways transport (ADN): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS**

14.1. UN number	Not Applicable	
14.2. UN proper shipping name	Not Applicable	
14.3. Transport hazard class(es)	Not applicable	Not Applicable
14.4. Packing group	Not applicable	
14.5. Environmental hazard	Not applicable	
14.6 Special precautions for user	Classification code	Not Applicable
	Special provisions	Not Applicable
	Limited quantity	Not Applicable
	Equipment required	Not Applicable
	Fire cones number	Not Applicable

**14.7. Transport in bulk according to Annex II of MARPOL and the IBC code**

Not Applicable

**14.8. Transport in bulk in accordance with MARPOL Annex V and the IMSBC Code**

Product name	Group
	Not Available

**14.9. Transport in bulk in accordance with the ICG Code**

Product name	Ship Type
	Not Available

**SECTION 15. Regulatory information****15.1. Safety, health and environmental regulations / legislation specific for the substance or mixture**

This safety data sheet is in compliance with the following EU legislation and its adaptations - as far as applicable - : Directives 98/24/EC, - 92/85/EEC, - 94/33/EC, - 2008/98/EC, - 2010/75/EU; Commission Regulation (EU) 2020/878; Regulation (EC) No 1272/2008 as updated through ATPs.

**Information according to 2012/18/EU (Seveso III):**

Seveso Category	Status
	Not Available

**15.2. Chemical safety assessment**

No Chemical Safety Assessment has been carried out for this substance/mixture by the supplier.

**National Inventory Status**

National Inventory	Status
Australia - AIIIC / Australia Non-Industrial Use	Not Available
Canada - DSL	Not Available
Canada - NDSL	Not Available
China - IECSC	Not Available
Europe - EINEC / ELINCS / NLP	Not Available
Japan - ENCS	Not Available
Korea - KECI	Not Available
New Zealand - NZIoC	Not Available
Philippines - PICCS	Not Available
USA - TSCA	Not Available
Taiwan - TCSI	Not Available
Mexico - INSQ	Not Available
Vietnam - NCI	Not Available
Russia - FBEPH	Not Available

**Legend:**

Yes = All CAS declared ingredients are on the inventory

No = One or more of the CAS listed ingredients are not on the inventory. These ingredients may be exempt or will require registration.

**SECTION 16. Other information****Full text Risk and Hazard codes**

	Not applicable
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**Version Summary**

Version	Date of Update	Sections Updated
1	26/AUG/2025	Initial version

**Other information**

The SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings. Risks may be determined by reference to Exposures Scenarios. Scale of use, frequency of use and current or available engineering controls must be considered.

For detailed advice on Personal Protective Equipment, refer to the following EU CEN Standards:

EN 166 Personal eye-protection

EN 340 Protective clothing

EN 374 Protective gloves against chemicals and micro-organisms

EN 13832 Footwear protecting against chemicals

EN 133 Respiratory protective devices

**Definitions and abbreviations**

ACGIH	American Conference of Governmental Industrial Hygienists
AIIC	Australian Inventory of Industrial Chemicals
BCF:	Bio Concentration Factors
BEI	Biological Exposure Index
DSL	Domestic Substances List
EINECS	European Inventory of Existing Commercial chemical Substances
ELINCS	European List of Notified Chemical Substances
ENCS	Existing and New Chemical Substances Inventory
ES	Exposure Standard
FBEPH	Russian Register of Potentially Hazardous Chemical and Biological Substances
IARC	International Agency for Research on Cancer
IECSC	Inventory of Existing Chemical Substance in China
IDLH	Immediately Dangerous to Life or Health Concentrations
INSQ	Inventario Nacional de Sustancias Químicas
KECI:	Korea Existing Chemicals Inventory
LOAEL	Lowest Observed Adverse Effect Level
LOD	Limit Of Detection
NCI	National Chemical Inventory
NDSL	Non-Domestic Substances List
NLP	No-Longer Polymers
NOAEL	No Observed Adverse Effect Level
NZIoC:	New Zealand Inventory of Chemicals
OSF	Odour Safety Factor
OTV	Odour Threshold Value
PC	Permissible Concentration
PC-STEL	Permissible Concentration Short Term Exposure Limit
PICCS	Philippine Inventory of Chemicals and Chemical Substances
STEL	Short Term Exposure Limit
TCSI	Taiwan Chemical Substance Inventory
TEEL	Temporary Emergency Exposure Limit
TLV	Threshold Limit Value
TSCA	Toxic Substances Control Act
TWA	Time Weighted Average

## Deckblatt zum Sicherheitsdatenblatt

Erstellt am 02.03.2026 Version 01.00

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### Produktidentifikation:

Handelsname	Proteinase K
Verwendungszweck	Ausschliesslich und nur für den Laborgebrauch zu verwenden. Nur für Forschungszwecke geeignet, Diagnostikzwecke sind von der Verwendung ausgeschlossen.

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### Lieferant, der das Sicherheitsdatenblatt übermittelt:

INTEGRA Biosciences AG  
Tardisstrasse 201,  
7205 Zizers, Schweiz  
[www.integra-biosciences.com](http://www.integra-biosciences.com)  
Tel.: +41 (0)81 286 95 30  
[info-ch@integra-biosciences.com](mailto:info-ch@integra-biosciences.com)

**Nationale Notfallnummer: 145** (24h erreichbar, Tox Info Suisse, Zürich; für Anrufe aus der Schweiz, Auskünfte auf Deutsch, Französisch und Italienisch)

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### Informationen für die Verwender betreffend:

#### Abschnitt 7 – Handhabung und Lagerung

Allfällig relevante schweizerische Anforderungen des Arbeitnehmerschutzes und des Umweltschutzes betreffend die Handhabung und Lagerung sind zu berücksichtigen.

#### Abschnitt 8 – Begrenzung und Überwachung der Exposition / Persönliche Schutzausrüstung

Die im Sicherheitsdatenblatt angegebenen Grenzwerte basieren auf den einschlägigen EG-/EU-Vorschriften. Für den Arbeitnehmerschutz in der Schweiz sind zusätzlich die Vorgaben der SUVA zu berücksichtigen. Gegebenenfalls ist die persönliche Schutzausrüstung zu spezifizieren.

#### Abschnitt 13 – Hinweise zur Entsorgung

Hinweise zur Entsorgung sind gemäß der Technischen Verordnung über Abfälle (TVA), der Verordnung über den Verkehr mit Abfällen (VeVA) sowie der Verordnung des UVEK über Listen zum Verkehr mit Abfällen (LVA) zu berücksichtigen.

#### Abschnitt 15 – Rechtsvorschriften

Allfällig relevante schweizerische Vorschriften, z. B. betreffend Luftreinhalte-Verordnung, Störfallverordnung (Mengenschwellen), Abgabevorschriften, Verwendungsbeschränkungen oder -verbote sowie allfällige Zulassungen (z. B. Biozidprodukte), sind zu berücksichtigen.



Version No: 1

Issue date: 29/APR/2024

Revision date: Not Applicable

Safety Data Sheet (Conforms to Annex II of REACH (1907/2006) - Regulation 2020/878)

## SECTION 1. Identification of the substance / mixture and of the company / undertaking

### 1.1. Product Identifier

Product name	Proteinase K
Synonyms	Not Available
Other means of identification	Not Available

### 1.2. Relevant identified uses of the substance or mixture and uses advised against

Relevant identified uses	Laboratory use.
Uses advised against	Not Applicable

### 1.3. Details of the manufacturer or supplier of the safety data sheet

Registered company name	CleanNA
Address	Coenecoop 75, 2741 PH, Waddinxveen, The Netherlands
Telephone	+31 (0) 182 22 33 50
Fax	+31 (0) 182 22 33 98
Website	<a href="http://www.cleanna.com">www.cleanna.com</a>
Email	<a href="mailto:info@cleanna.com">info@cleanna.com</a>

### 1.4. Emergency telephone number

Emergency telephone numbers	112 (European emergency number)
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## SECTION 2. Hazards identification

### 2.1. Classification of the substance or mixture

Classification according to regulation (EC) No 1272/2008 [CLP] and amendments	H334 – Sensitisation (Respiratory) – Category 1
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### 2.2. Label elements

Hazard pictogram(s)	A red diamond-shaped pictogram with a black silhouette of a person's head and shoulders, with a white starburst on the chest, indicating a health hazard.
Signal word	<b>Danger</b>

### Hazard statement(s)

H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
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### Supplementary statement(s)

Not Applicable

### Precautionary statement(s) Prevention

P261	Avoid breathing mist / vapours / spray
P284	(In case of inadequate ventilation) wear respiratory protection.

### Precautionary statement(s) Response

P304 + P340	IF INHALED: remove person to fresh air and keep comfortable for breathing.
P342 + P311	Id experiencing respiratory symptoms

**Precautionary statement(s) Storage**

Not Applicable

**Precautionary statement(s) Disposal**

<b>P501</b>	Dispose of contents/container to authorised hazardous or special waste collection point in accordance with any local regulation.
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**2.3. Other hazards**

Cumulative effects may results following exposure \*.  
Possible skin sensitizer \*

REACH – Art. 57-59: The mixture does not contain Substances of Very High Concern (SVHC) at the SDS issue date.

**SECTION 3. Composition / information on ingredients****3.1 Substances**

See 'Composition on ingredients' in Section 3.2

**3.2 Mixtures**

1. CAS No 2. EC No 3. Index No 4. REACH No	%[weight]	Name	Classification according to regulation (EC) No 1272/2008 [CLP] and amendments	SCL / M-Factor	Nanoform Particle Characteristics
1. 39450-01-6 2. 254-457-8 3. Not Available 4. Not Available	2 - 4	<u>Proteinase K</u>	Skin Corrosion/Irritation – Category 2 Serious Eye Damage / Eye Irritation – Category 2 Sensitisation (Respiratory) – Category 1 Specific Target Organ Toxicity – Single Exposure (Respiratory Tract Irritation) – Cat. 3 H315, H319, H334, H335	Not Available	Not Available
<b>Legend:</b>	2. Classification drawn from Regulation (EU) No 1272/2008 - Annex VI; 3. Classification drawn from C&L; * EU IOELVs available; [e] Substance identified as having endocrine disrupting properties				

**SECTION 4. First aid measures****4.1. Description of first aid measures**

<b>Eye Contact</b>	<p>If this product comes in contact with eyes:</p> <ul style="list-style-type: none"> <li>▶ Wash out immediately with water.</li> <li>▶ If irritation continues, seek medical attention.</li> <li>▶ Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.</li> </ul>
<b>Skin Contact</b>	<p>If skin contact occurs:</p> <ul style="list-style-type: none"> <li>▶ Immediately remove all contaminated clothing, including footwear.</li> <li>▶ Flush skin and hair with running water (and soap if available).</li> <li>▶ Seek medical attention in event of irritation.</li> </ul>
<b>Inhalation</b>	<ul style="list-style-type: none"> <li>▶ If fumes, aerosols or combustion products are inhaled remove from contaminated area.</li> <li>▶ Other measures are usually unnecessary.</li> </ul>
<b>Ingestion</b>	<ul style="list-style-type: none"> <li>▶ Immediately give a glass of water.</li> <li>▶ First aid is not generally required. If in doubt, contact a Poisons Information Centre or a doctor.</li> </ul>

**4.2 Most important symptoms and effects, both acute and delayed**

See Section 11

**4.3. Indication of any immediate medical attention and special treatment needed**

Treat symptomatically

**SECTION 5. Firefighting measures****5.1 Extinguishing media**

- ▶ There is no restriction on the type of extinguisher which may be used.
- ▶ Use extinguishing media suitable for surrounding area.

**5.2 Special hazards arising from the substrate or mixture**

<b>Fire Incompatibility</b>	None known
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**5.3. Advice for firefighters**

<b>Fire Fighting</b>	<ul style="list-style-type: none"> <li>▶ Alert Fire Brigade and tell them location and nature of hazard.</li> <li>▶ Wear breathing apparatus plus protective gloves in the event of a fire.</li> <li>▶ Prevent, by any means available, spillage from entering drains or water courses.</li> <li>▶ Use firefighting procedures suitable for surrounding area.</li> <li>▶ <b>DO NOT</b> approach containers suspected to be hot.</li> <li>▶ Cool fire exposed containers with water spray from a protected location.</li> <li>▶ If safe to do so, remove containers from path of fire.</li> <li>▶ Equipment should be thoroughly decontaminated after use.</li> </ul>
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<b>Fire/Explosion Hazard</b>	<ul style="list-style-type: none"> <li>▶ Non combustible.</li> <li>▶ Not considered a significant fire risk, however containers may burn.</li> </ul> <p>Decomposition may produce toxic fumes of:</p> <ul style="list-style-type: none"> <li>,</li> <li>hydrogen cyanide</li> <li>,</li> <li>nitrogen oxides (NOx)</li> </ul> <p>May emit poisonous fumes. May emit corrosive fumes.</p>
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## SECTION 6. Accidental release measures

### 6.1 Personal precautions, protective equipment and emergency procedures

See section 8

### 6.2 Environmental precautions

See section 12

### 6.3 Methods and material for containment and cleaning up

<b>Minor Spills</b>	<ul style="list-style-type: none"> <li>▶ Clean up all spills immediately.</li> <li>▶ Avoid breathing vapours and contact with skin and eyes.</li> <li>▶ Control personal contact with the substance, by using protective equipment.</li> <li>▶ Contain and absorb spill with sand, earth, inert material or vermiculite.</li> <li>▶ Wipe up.</li> <li>▶ Place in a suitable, labelled container for waste disposal.</li> </ul>
<b>Major Spills</b>	<p>Moderate hazard.</p> <ul style="list-style-type: none"> <li>▶ Clear area of personnel and move upwind.</li> <li>▶ Alert Fire Brigade and tell them location and nature of hazard.</li> <li>▶ Wear breathing apparatus plus protective gloves.</li> <li>▶ Prevent, by any means available, spillage from entering drains or water course.</li> <li>▶ Stop leak if safe to do so.</li> <li>▶ Contain spill with sand, earth or vermiculite.</li> <li>▶ Collect recoverable product into labelled containers for recycling.</li> <li>▶ Neutralise/decontaminate residue (see Section 13 for specific agent).</li> <li>▶ Collect solid residues and seal in labelled drums for disposal.</li> <li>▶ Wash area and prevent runoff into drains.</li> <li>▶ After cleanup operations, decontaminate and launder all protective clothing and equipment before storing and re-using. ▶ If contamination of drains or waterways occurs, advise emergency services.</li> </ul>

### 6.4. Reference to other sections

Personal Protective Equipment advice is contained in Section 8 of the SDS.

## SECTION 7. Handling and storage

### 7.1. Precautions for safe handling

<b>Safe handling</b>	<ul style="list-style-type: none"> <li>▶ Avoid all personal contact, including inhalation.</li> <li>▶ Wear protective clothing when risk of exposure occurs.</li> <li>▶ Use in a well-ventilated area.</li> <li>▶ Prevent concentration in hollows and sumps.</li> <li>▶ <b>DO NOT</b> enter confined spaces until atmosphere has been checked.</li> <li>▶ Avoid smoking, naked lights or ignition sources.</li> <li>▶ Avoid contact with incompatible materials.</li> <li>▶ When handling, <b>DO NOT</b> eat, drink or smoke.</li> <li>▶ Keep containers securely sealed when not in use.</li> <li>▶ Avoid physical damage to containers.</li> <li>▶ Always wash hands with soap and water after handling.</li> <li>▶ Work clothes should be laundered separately.</li> <li>▶ Use good occupational work practice.</li> <li>▶ Observe manufacturer's storage and handling recommendations contained within this SDS.</li> <li>▶ Atmosphere should be regularly checked against established exposure standards to ensure safe working conditions.</li> <li>▶ <b>DO NOT</b> allow clothing wet with material to stay in contact with skin</li> </ul>
<b>Fire and explosion protection</b>	See section 5
<b>Other information</b>	None known

## 7.2. Conditions for safe storage, including any incompatibilities

<b>Suitable container</b>	<ul style="list-style-type: none"> <li>▶ Polyethylene or polypropylene container.</li> <li>▶ Packing as recommended by manufacturer.</li> <li>▶ Check all containers are clearly labelled and free from leaks.</li> </ul>
<b>Storage incompatibility</b>	It is suggested that crystalline proteins are explosive as evidenced by the easily induced shattering of microcrystals. This may be a consequence of the implosive collapse of a metastable ordering of molecules (Bretherick's Handbook of Reactive Chemical Hazards). A study was performed to obtain quantitative data on the nature and yields of oxidation products formed by a prototypic oxidant system (HO• /O2) on small peptides, including Val-Gly-Val-Ala-Pro-Gly. Study results indicated that hydroperoxide formation occurred nonrandomly (Pro > Val > Ala > Gly) and that the formation of hydroperoxide was inversely related to carbonyl yields (both peptide-bound and released). Multiple alcohols were generated at both side-chain and backbone sites. Summation of the product concentrations provided clear evidence for the occurrence of chain reactions in peptides exposed to HO• /O2, with the overall product yields exceeding that of the initial HO• generated.
<b>Hazard categories in accordance with Regulation (EC) No 1272/2008</b>	Not available
<b>Qualifying quantity (tonnes) of dangerous substances as referred to in Article 3(10) for the application of</b>	Not available

## 7.3. Specific end use(s)

See section 1.2

## SECTION 8. Exposure controls / personal protection

## 8.1. Control parameters

Ingredient	DNELs Exposure Pattern Worker	PNECs Compartment
Not Available	Not Available	Not Available

\* Values for General Population

## Occupational Exposure Limits (OEL)

## INGREDIENT DATA

Source	Ingredient	Material name	TWA	STEL	Peak	Notes
Not Available	Not Available	Not Available	Not Available	Not Available	Not Available	Not Available

## Emergency Limits

Ingredient	TEEL-1	TEEL-2	TEEL-3
Proteinase K	Not Available	Not Available	Not Available

Ingredient	Original IDLH	Revised IDLH
Proteinase K	Not Available	Not Available

## Occupational Exposure Branding

Ingredient	Occupational Exposure Brand Rating	Occupational Exposure Band Limit
Proteinase K	E	<= 0.01 mg/m <sup>3</sup>

**Notes:** Occupational exposure banding is a process of assigning chemicals into specific categories or bands based on a chemical's potency and the adverse health outcomes associated with exposure. The output of this process is an occupational exposure band (OEB), which corresponds to a range of exposure concentrations that are expected to protect worker health.

## 8.2. Exposure controls

## 8.2.1 Appropriate engineering controls

Engineering controls are used to remove a hazard or place a barrier between the worker and the hazard. Well-designed engineering controls can be highly effective in protecting workers and will typically be independent of worker interactions to provide this high level of protection.

The basic types of engineering controls are:

Process controls which involve changing the way a job activity or process is done to reduce the risk.

Enclosure and/or isolation of emission source which keeps a selected hazard "physically" away from the worker and ventilation that strategically "adds" and "removes" air in the work environment. Ventilation can remove or dilute an air contaminant if designed properly. The design of a ventilation system must match the particular process and chemical or contaminant in use.

Employers may need to use multiple types of controls to prevent employee overexposure.

Local exhaust ventilation usually required. If risk of overexposure exists, wear approved respirator. Correct fit is essential to obtain adequate protection. Supplied-air type respirator may be required in special circumstances. Correct fit is essential to ensure adequate protection.

An approved self-contained breathing apparatus (SCBA) may be required in some situations.

Provide adequate ventilation in warehouse or closed storage area. Air contaminants generated in the workplace possess varying "escape" velocities which, in turn, determine the "capture velocities" of fresh circulating air required to effectively remove

Type of contaminant	Air Speed
Solvent, vapours, degreasing etc. evaporating from tank (in still air)	0.25 – 0.5 m/s (50 – 100 f/min)
Aerosols, fumes from pouring operations, intermittent container filling, low speed conveyer transfers, welding, spray drift, plating acid fumes, pickling (released at low velocity into zone of active generation)	0.5 – 1 m/s (100 – 200 f/min)
Direct spray, spray painting in shallow booths, drum filling, conveyer loading, crusher debts, gas discharge (active generation into zone of rapid air motion)	1 – 2.5 m/s (200 – 500 f/min)
Grinding, abrasive blasting, tumbling, high speed generated dusts (released at high velocity into zone of very high rapid air motion)	w.5 – 10 m/s (500 – 200 f/min)

Within each range the appropriate value depends to:

Lower end of range

- 1: Room air currents minimal of favourable to capture
- 2: Contaminants of low toxicity or of nuisance value only
- 3: Intermittent, low production
- 4: Large hood or large air mass in motion

Upper end of range

- 1: Disturbing room air currents
- 2: Contaminants of high toxicity
- 3: High Production, heavy use
- 4: Small hood – local control only

Simple theory shows that air velocity falls rapidly with distance away from the opening of a simple extraction pipe. Velocity generally decreases with the square of distance from the extraction point (in simple cases). Therefore the air speed at the extraction point should be adjusted, accordingly, after reference to distance from the contaminating source. The air velocity at the extraction fan, for example, should be a minimum of 1-2 m/s (200-400 f/min) for extraction of solvents generated in a tank 2 meters distant from the extraction point. Other mechanical considerations, producing performance deficits within the extraction apparatus, make it essential that theoretical air velocities are multiplied by factors of 10 or more when extraction systems are installed or used.

### 8.2.2. Personal protection



#### Eye and face protection

- ▶ Safety glasses with side shields. ▶  
Chemical goggles.

- ▶ Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of lenses or restrictions on use, should be created for each workplace or task. This should include a review of lens absorption and adsorption for the class of chemicals in use and an account of injury experience. Medical and first-aid personnel should be trained in their removal and suitable equipment should be readily available. In the event of chemical exposure, begin eye irrigation immediately and remove contact lens as soon as practicable. Lens should be removed at the first signs of eye redness or irritation - lens should be removed in a clean environment only after workers have washed hands thoroughly. [CDC NIOSH Current Intelligence Bulletin 59], [AS/NZS 1336 or national equivalent]

#### Skin protection

See Hand protection below

- ▶ Wear chemical protective gloves, e.g. PVC.
- ▶ Wear safety footwear or safety gumboots, e.g. Rubber

The selection of suitable gloves does not only depend on the material, but also on further marks of quality which vary from manufacturer to manufacturer. Where the chemical is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

The exact break through time for substances has to be obtained from the manufacturer of the protective gloves and has to be observed when making a final choice.

Personal hygiene is a key element of effective hand care. Gloves must only be worn on clean hands. After using gloves, hands should be washed and dried thoroughly. Application of a non-perfumed moisturiser is recommended.

Suitability and durability of glove type is dependent on usage. Important factors in the selection of gloves include:

- frequency and duration of contact,
- chemical resistance of glove material,
- glove thickness and
- dexterity

Select gloves tested to a relevant standard (e.g. Europe EN 374, US F739, AS/NZS 2161.1 or national equivalent).

- When prolonged or frequently repeated contact may occur, a glove with a protection class of 5 or higher (breakthrough time greater than 240 minutes according to EN 374, AS/NZS 2161.10.1 or national equivalent) is recommended.
- When only brief contact is expected, a glove with a protection class of 3 or higher (breakthrough time greater than 60 minutes according to EN 374, AS/NZS 2161.10.1 or national equivalent) is recommended.
- Some glove polymer types are less affected by movement and this should be taken into account when considering gloves for long-term use.
- Contaminated gloves should be replaced.
- As defined in ASTM F-739-96 in any application, gloves are rated as:
  - Excellent when breakthrough time > 480 min
  - Good when breakthrough time > 20 min
  - Fair when breakthrough time < 20 min
  - Poor when glove material degrades

For general applications, gloves with a thickness typically greater than 0.35 mm, are recommended.

It should be emphasised that glove thickness is not necessarily a good predictor of glove resistance to a specific chemical, as the permeation efficiency of the glove will be dependent on the exact composition of the glove material. Therefore, glove selection should also be based on consideration of the task requirements and knowledge of breakthrough times.

Glove thickness may also vary depending on the glove manufacturer, the glove type and the glove model. Therefore, the manufacturers technical data should always be taken into account to ensure selection of the most appropriate glove for the task.

Note: Depending on the activity being conducted, gloves of varying thickness may be required for specific tasks. For example:

- Thinner gloves (down to 0.1 mm or less) may be required where a high degree of manual dexterity is needed. However, these gloves are only likely to give short duration protection and would normally be just for single use applications, then disposed of.
- Thicker gloves (up to 3 mm or more) may be required where there is a mechanical (as well as a chemical) risk i.e. where there is abrasion or puncture potential
- Gloves must only be worn on clean hands. After using gloves, hands should be washed and dried thoroughly. Application of a non-perfumed moisturiser is recommended.

#### Hand / feet protection

#### Body protection

See Other protection below

#### Other protection

- ▶ Overalls.
- ▶ P.V.C apron.
- ▶ Barrier cream.
- ▶ Skin cleansing cream.
- ▶ Eye wash unit.

### 8.2.3. Environmental exposure controls

See section 12

**SECTION 9. Physical and chemical properties****9.1. Information on basic physical and chemical properties**

<b>Appearance</b>	Not Available		
<b>Physical state</b>	Liquid	<b>Relative density (Water = 1)</b>	Not Available
<b>Odour</b>	Not Available	<b>Partition coefficient n-octanol / water</b>	Not Available
<b>Odour threshold</b>	Not Available	<b>Auto-ignition temperature (°C)</b>	Not Available
<b>pH (as supplied)</b>	Not Available	<b>Decomposition temperature (°C)</b>	Not Available
<b>Melting point / freezing point (°C)</b>	Not Available	<b>Viscosity (cSt)</b>	Not Available
<b>Initial boiling point and boiling range (°C)</b>	Not Available	<b>Molecular weight (g/mol)</b>	Not Available
<b>Flash point (°C)</b>	Not Available	<b>Taste</b>	Not Available
<b>Evaporation rate</b>	Not Available	<b>Explosive properties</b>	Not Available
<b>Flammability</b>	Not Available	<b>Oxidising properties</b>	Not Available
<b>Upper Explosive Limit (%)</b>	Not Available	<b>Surface Tension (dyn/cm or mN/m)</b>	Not Available
<b>Lower Explosive Limit (%)</b>	Not Available	<b>Volatile Component (%vol)</b>	Not Available
<b>Vapour pressure (kPa)</b>	Not Available	<b>Gas group</b>	Not Available
<b>Solubility in water</b>	Not Applicable	<b>pH as a solution (1%)</b>	Not Available
<b>Vapour density (Air = 1)</b>	Not Available	<b>VOC g/L</b>	Not Available
<b>Nanoform Solubility</b>	Not Available	<b>Nanoform Particle Characteristics</b>	Not Available
<b>Particle Size</b>	Not Available		

**9.2. Other information**

Not Available

**SECTION 10. Stability and reactivity**

<b>10.1.Reactivity</b>	See section 7.2
<b>10.2. Chemical stability</b>	<ul style="list-style-type: none"> <li>▶ Unstable in the presence of incompatible materials.</li> <li>▶ Product is considered stable.</li> <li>▶ Hazardous polymerisation will not occur.</li> </ul>
<b>10.3. Possibility of hazardous reactions</b>	See section 7.2
<b>10.4. Conditions to avoid</b>	See section 7.2
<b>10.5. Incompatible materials</b>	See section 7.2
<b>10.6. Hazardous decomposition products</b>	See section 5.3

**SECTION 11. Toxicological information****11.1. Information on toxicological effects**

<b>Inhaled</b>	The material is not thought to produce adverse health effects or irritation of the respiratory tract (as classified by EC Directives using animal models). Nevertheless, good hygiene practice requires that exposure be kept to a minimum and that suitable control measures be used in an occupational setting.
<b>Ingestion</b>	The material has <b>NOT</b> been classified by EC Directives or other classification systems as "harmful by ingestion". This is because of the lack of corroborating animal or human evidence.
<b>Skin Contact</b>	<p>Skin contact is not thought to have harmful health effects (as classified under EC Directives); the material may still produce health damage following entry through wounds, lesions or abrasions.</p> <p>There is some evidence to suggest that this material can cause inflammation of the skin on contact in some persons.</p> <p>Open cuts, abraded or irritated skin should not be exposed to this material</p> <p>Entry into the blood-stream, through, for example, cuts, abrasions or lesions, may produce systemic injury with harmful effects. Examine the skin prior to the use of the material and ensure that any external damage is suitably protected.</p>

<b>Eye</b>	Although the liquid is not thought to be an irritant (as classified by EC Directives), direct contact with the eye may produce transient discomfort characterised by tearing or conjunctival redness (as with windburn).	
<b>Chronic</b>	<p>Inhaling this product is more likely to cause a sensitisation reaction in some persons compared to the general population. Dusts produced by proteins can sometimes sensitise workers like other foreign bodies. Symptoms include asthma appearing soon after exposure, with wheezing, narrowing of the airways and breathing difficulties.</p> <p>Respiratory sensitisation may result in allergic/asthma like responses; from coughing and minor breathing difficulties to bronchitis with wheezing, gasping.</p> <p>Dusts produced by enzymes can attack the respiratory system. Allergic asthma produced after exposure causes spasm, cough and wheezing.</p>	
<b>Proteinase K</b>	<b>TOXICITY</b> Not Available	<b>IRRITATION</b> Not Available
<b>Legend:</b>	1. Value obtained from Europe ECHA Registered Substances - Acute toxicity 2. Value obtained from manufacturer's SDS. Unless otherwise specified data extracted from RTECS - Register of Toxic Effect of chemical Substances	

<b>Proteinase K</b>	<p>Asthma-like symptoms may continue for months or even years after exposure to the material ends. This may be due to a non-allergic condition known as reactive airways dysfunction syndrome (RADS) which can occur after exposure to high levels of highly irritating compound. Main criteria for diagnosing RADS include the absence of previous airways disease in a non-atopic individual, with sudden onset of persistent asthma-like symptoms within minutes to hours of a documented exposure to the irritant. Other criteria for diagnosis of RADS include a reversible airflow pattern on lung function tests, moderate to severe bronchial hyperreactivity on methacholine challenge testing, and the lack of minimal lymphocytic inflammation, without eosinophilia. RADS (or asthma) following an irritating inhalation is an infrequent disorder with rates related to the concentration of and duration of exposure to the irritating substance. On the other hand, industrial bronchitis is a disorder that occurs as a result of exposure due to high concentrations of irritating substance (often particles) and is completely reversible after exposure ceases. The disorder is characterized by difficulty breathing, cough and mucus production.</p> <p>No significant acute toxicological data identified in literature search.</p> <p>Allergic reactions involving the respiratory tract are usually due to interactions between IgE antibodies and allergens and occur rapidly. Allergic potential of the allergen and period of exposure often determine the severity of symptoms. Some people may be genetically more prone than others, and exposure to other irritants may aggravate symptoms. Allergy causing activity is due to interactions with proteins. Attention should be paid to atopic diathesis, characterised by increased susceptibility to nasal inflammation, asthma and eczema.</p> <p>Exogenous allergic alveolitis is induced essentially by allergen specific immune-complexes of the IgG type; cell-mediated reactions (T lymphocytes) may be involved. Such allergy is of the delayed type with onset up to four hours following exposure.</p>
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<b>Acute Toxicity</b>	✗	<b>Carcinogenicity</b>	✗
<b>Skin Irritation/Corrosion</b>	✗	<b>Reproductivity</b>	✗
<b>Serious Eye Damage/Irritation</b>	✗	<b>STOT - Single Exposure</b>	✗
<b>Respiratory or Skin sensitisation</b>	✓	<b>STOT - Repeated Exposure</b>	✗
<b>Mutagenicity</b>	✗	<b>Aspiration Hazard</b>	✗

**Legend:** ✗ – Data either not available or does not fill the criteria for classification  
 ✓ – Data available to make classification

## 11.2. Information on other hazards

### 1. Endocrine Disruption Properties

Not Available

### 2. Other Information

See Section 11.1

## SECTION 12. Ecological information

### 12.1 Toxicity

	Endpoint	Test duration (hr)	Species	Value	Source
<b>Proteinase K</b>	Not available	Not available	Not available	Not available	Not available
<b>Legend:</b>	Extracted from 1. IUCLID Toxicity Data 2. Europe ECHA Registered Substances - Ecotoxicological Information - Aquatic Toxicity 4. US EPA, Ecotox database - Aquatic Toxicity Data 5. ECETOC Aquatic Hazard Assessment Data 6. NITE (Japan) - Bioconcentration Data 7. METI (Japan) - Bioconcentration Data 8. Vendor Data				

Proteins are generally easily biodegradable.  
**DO NOT** discharge into sewer or waterways.

### 12.2. Persistence and degradability

Ingredient	Persistence: Water/Soil	Persistence: Air
	No data available	No data available

### 12.3. Bio accumulative potential

Ingredient	Bioaccumulation
	No data available

**12.4. Mobility in soil**

Ingredient	Mobility
	No data available

**12.5. Results of PBT and vPvB assessment**

	P	B	T	
Relevant available data	Not Available	Not Available	Not Available	
PBT	✘	✘	✘	
vPvB	✘	✘	✘	
PBT Criteria fulfilled?				No
vPvB				No

**12.6. Endocrine Disruption Properties**

Not Available

**12.7. Other adverse effects**

Not Available

**SECTION 13. Disposal considerations****13.1. Waste treatment methods**

<b>Product / Packaging disposal</b>	<ul style="list-style-type: none"> <li>▶ Containers may still present a chemical hazard/ danger when empty.</li> <li>▶ Return to supplier for reuse/ recycling if possible.</li> </ul> <p>Otherwise:</p> <ul style="list-style-type: none"> <li>▶ If container can not be cleaned sufficiently well to ensure that residuals do not remain or if the container cannot be used to store the same product, then puncture containers, to prevent re-use, and bury at an authorised landfill.</li> <li>▶ Where possible retain label warnings and SDS and observe all notices pertaining to the product.</li> </ul> <p>Legislation addressing waste disposal requirements may differ by country, state and/ or territory. Each user must refer to laws operating in their area. In some areas, certain wastes must be tracked.</p> <p>A Hierarchy of Controls seems to be common - the user should investigate:</p> <ul style="list-style-type: none"> <li>▶ Reduction</li> <li>▶ Reuse</li> <li>▶ Recycling</li> <li>▶ Disposal (if all else fails)</li> </ul> <p>This material may be recycled if unused, or if it has not been contaminated so as to make it unsuitable for its intended use. If it has been contaminated, it may be possible to reclaim the product by filtration, distillation or some other means. Shelf life considerations should also be applied in making decisions of this type. Note that properties of a material may change in use, and recycling or reuse may not always be appropriate.</p> <ul style="list-style-type: none"> <li>▶ <b>DO NOT</b> allow wash water from cleaning or process equipment to enter drains.</li> <li>▶ It may be necessary to collect all wash water for treatment before disposal.</li> <li>▶ In all cases disposal to sewer may be subject to local laws and regulations and these should be considered first.</li> <li>▶ Where in doubt contact the responsible authority.</li> <li>▶ Recycle wherever possible or consult manufacturer for recycling options.</li> <li>▶ Consult State Land Waste Authority for disposal.</li> <li>▶ Bury or incinerate residue at an approved site.</li> <li>▶ Recycle containers if possible, or dispose of in an authorised landfill.</li> </ul>
<b>Waste treatment options</b>	Not Available
<b>Sewage disposal options</b>	Not Available

**SECTION 14 Transport information****Labels Required**

<b>Marine Pollutant</b>	NO
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**Land transport (ADR): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS**

14.1. <b>UN number</b>	Not Applicable	
14.2. <b>UN proper shipping name</b>	Not Applicable	
14.3. <b>Transport hazard class(es)</b>	Class	Not Applicable
	Sub risk	Not Applicable
14.4. <b>Packing group</b>	Not Applicable	
14.5. <b>Environmental hazard</b>	Not Applicable	
14.6. <b>Special precautions for user</b>	Hazard identification (Kemler)	Not Applicable
	Classification code	Not Applicable
	Hazard Label	Not Applicable
	Special provisions	Not Applicable
	Limited quantity	Not Applicable
	Tunnel Restriction Code	Not Applicable

**Air transport (ICAO-IATA / DGR): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS**

14.1. <b>UN number</b>	Not Applicable	
14.2. <b>UN proper shipping name</b>	Not Applicable	
14.3. <b>Transport hazard class(es)</b>	ICAO/IATA Class	Not Applicable
	ICAO / IATA Sub risk	Not Applicable
	ERG Code	Not Applicable
14.4. <b>Packing group</b>	Not Applicable	
14.5. <b>Environmental hazard</b>	Not Applicable	
14.6. <b>Special precautions for user</b>	Special provisions	Not Applicable
	Cargo Only Packing Instructions	Not Applicable
	Cargo Only Maximum Qty / Pack	Not Applicable
	Passenger and Cargo Packing Instructions	Not Applicable
	Passenger and Cargo Maximum Qty / Pack	Not Applicable
	Passenger and Cargo Limited Quantity Packing Instructions	Not Applicable
	Passenger and Cargo Limited Maximum Qty / Pack	Not Applicable

**Sea transport (IMDG-Code / GGVSee): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS**

14.1. <b>UN number</b>	Not Applicable	
14.2. <b>UN proper shipping name</b>	Not Applicable	
14.3. <b>Transport hazard class(es)</b>	IMDG Class	Not Applicable
	IMDG Sub risk	Not Applicable
14.4. <b>Packing group</b>	Not Applicable	
14.5. <b>Environmental hazard</b>	Not Applicable	
14.6. <b>Special precautions for user</b>	EMS Number	Not Applicable
	Special provisions	Not Applicable
	Limited Quantities	Not Applicable

**Inland waterways transport (ADN): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS**

14.1. UN number	Not Applicable	
14.2. UN proper shipping name	Not Applicable	
14.3. Transport hazard class(es)	Not applicable	Not Applicable
14.4. Packing group	Not applicable	
14.5. Environmental hazard	Not applicable	
14.6 Special precautions for user	Classification code	Not Applicable
	Special provisions	Not Applicable
	Limited quantity	Not Applicable
	Equipment required	Not Applicable
	Fire cones number	Not Applicable

**14.7. Transport in bulk according to Annex II of MARPOL and the IBC code**

Not Applicable

**14.8. Transport in bulk in accordance with MARPOL Annex V and the IMSBC Code**

Product name	Group
Proteinase K	Not Available

**14.9. Transport in bulk in accordance with the ICG Code**

Product name	Ship Type
Proteinase K	Not Available

**SECTION 15. Regulatory information****15.1. Safety, health and environmental regulations / legislation specific for the substance or mixture**

Proteinase K is found on the following regulatory lists

## Europe EC Inventory

European Union - European Inventory of Existing Commercial Chemical Substances (EINECS)

This safety data sheet is in compliance with the following EU legislation and its adaptations - as far as applicable - : Directives 98/24/EC, - 92/85/EEC, - 94/33/EC, - 2008/98/EC, - 2010/75/EU; Commission Regulation (EU) 2020/878; Regulation (EC) No 1272/2008 as updated through ATPs.

**15.2. Chemical safety assessment**

No Chemical Safety Assessment has been carried out for this substance/mixture by the supplier.

**ECHA SUMMARY**

Ingredient	CAS number	Index No	ECHA Dossier
Proteinase K	39450-01-6	Not Available	Not Available

Harmonization (C&L Inventory)	Hazard Class and Category Code(s)	Pictograms Signal Word Code(s)	Hazard Statement Code(s)
1	Skin Irrit. 2, Eye Irrit. 2, Resp. Sens. 1	GHS08; Dgr	H315; H319; H334
2	Skin Irrit. 2, Eye Irrit. Resp. Sens. 1, Skin Sens. 1, STOT SE 3	GHS08; Dgr,	H315; H319; H334; H317; H335

Harmonization Code 1 = The most prevalent classification. Harmonization Code 2 = The most severe classification.

**National Inventory Status**

National Inventory	Status
Australia - AIIIC/ Australia Non-Industrial Use	No (proteinase K)
Canada - DSL	No (proteinase K)
Canada - NDSL	No (proteinase K)
China - IECSC	Yes
Europe - EINEC / ELINCS / NLP	Yes
Japan - ENCS	No (proteinase K)
Korea - KECI	No (proteinase K)
New Zealand - NZIoC	Yes
Philippines - PICCS	No (proteinase K)
USA - TSCA	No (proteinase K)
Taiwan - TCSI	Yes
Mexico - INSQ	No (proteinase K)
Vietnam - NCI	No (proteinase K)
Russia - FBEPH	No (proteinase K)

**Legend:**

Yes = All CAS declared ingredients are on the inventory

No = One or more of the CAS listed ingredients are not on the inventory. These ingredients may be exempt or will require registration.

**SECTION 16. Other information****Full text Risk and Hazard codes**

<b>H315</b>	Causes skin irritation
<b>H317</b>	May cause an allergic skin reaction
<b>H319</b>	Causes serious eye irritation
<b>H335</b>	May cause respiratory irritation

**Version Summary**

<b>Version</b>	<b>Date of Update</b>	<b>Sections Updated</b>
1	29/APR/2024	Initial version

**Other information**

Classification of the preparation and its individual components has drawn on official and authoritative sources as well as independent review by the Chemwatch Classification committee using available literature references.

The SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings. Risks may be determined by reference to Exposures Scenarios. Scale of use, frequency of use and current or available engineering controls must be considered.

For detailed advice on Personal Protective Equipment, refer to the following EU CEN Standards:

EN 166 Personal eye-protection

EN 340 Protective clothing

EN 374 Protective gloves against chemicals and micro-organisms

EN 13832 Footwear protecting against chemicals

EN 133 Respiratory protective devices

**Definitions and abbreviations**

ACGIH	American Conference of Governmental Industrial Hygienists
AIIC	Australian Inventory of Industrial Chemicals
BCF:	Bio Concentration Factors
BEI	Biological Exposure Index
DSL	Domestic Substances List
EINECS	European Inventory of Existing Commercial chemical Substances
ELINCS	European List of Notified Chemical Substances
ENCS	Existing and New Chemical Substances Inventory
ES	Exposure Standard
FBEPH	Russian Register of Potentially Hazardous Chemical and Biological Substances
IARC	International Agency for Research on Cancer
IECSC	Inventory of Existing Chemical Substance in China
IDLH	Immediately Dangerous to Life or Health Concentrations
INSQ	Inventario Nacional de Sustancias Químicas
KECI:	Korea Existing Chemicals Inventory
LOAEL	Lowest Observed Adverse Effect Level
LOD	Limit Of Detection
NCI	National Chemical Inventory
NDSL	Non-Domestic Substances List
NLP	No-Longer Polymers
NOAEL	No Observed Adverse Effect Level
NZIoC:	New Zealand Inventory of Chemicals
OSF	Odour Safety Factor
OTV	Odour Threshold Value
PC	Permissible Concentration
PC-STEL	Permissible Concentration Short Term Exposure Limit
PICCS	Philippine Inventory of Chemicals and Chemical Substances
STEL	Short Term Exposure Limit
TCSI	Taiwan Chemical Substance Inventory
TEEL	Temporary Emergency Exposure Limit
TLV	Threshold Limit Value
TSCA	Toxic Substances Control Act
TWA	Time Weighted Average

## Deckblatt zum Sicherheitsdatenblatt

Erstellt am 02.03.2026 Version 01.00

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### Produktidentifikation:

Handelsname	TB Wash
Verwendungszweck	Ausschliesslich und nur für den Laborgebrauch zu verwenden. Nur für Forschungszwecke geeignet, Diagnostikzwecke sind von der Verwendung ausgeschlossen.

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### Lieferant, der das Sicherheitsdatenblatt übermittelt:

INTEGRA Biosciences AG  
Tardisstrasse 201,  
7205 Zizers, Schweiz  
[www.integra-biosciences.com](http://www.integra-biosciences.com)  
Tel.: +41 (0)81 286 95 30  
[info-ch@integra-biosciences.com](mailto:info-ch@integra-biosciences.com)

**Nationale Notfallnummer: 145** (24h erreichbar, Tox Info Suisse, Zürich; für Anrufe aus der Schweiz, Auskünfte auf Deutsch, Französisch und Italienisch)

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### Informationen für die Verwender betreffend:

#### Abschnitt 7 – Handhabung und Lagerung

Allfällig relevante schweizerische Anforderungen des Arbeitnehmerschutzes und des Umweltschutzes betreffend die Handhabung und Lagerung sind zu berücksichtigen.

#### Abschnitt 8 – Begrenzung und Überwachung der Exposition / Persönliche Schutzausrüstung

Die im Sicherheitsdatenblatt angegebenen Grenzwerte basieren auf den einschlägigen EG-/EU-Vorschriften. Für den Arbeitnehmerschutz in der Schweiz sind zusätzlich die Vorgaben der SUVA zu berücksichtigen. Gegebenenfalls ist die persönliche Schutzausrüstung zu spezifizieren.

#### Abschnitt 13 – Hinweise zur Entsorgung

Hinweise zur Entsorgung sind gemäß der Technischen Verordnung über Abfälle (TVA), der Verordnung über den Verkehr mit Abfällen (VeVA) sowie der Verordnung des UVEK über Listen zum Verkehr mit Abfällen (LVA) zu berücksichtigen.

#### Abschnitt 15 – Rechtsvorschriften

Allfällig relevante schweizerische Vorschriften, z. B. betreffend Luftreinhalte-Verordnung, Störfallverordnung (Mengenschwellen), Abgabevorschriften, Verwendungsbeschränkungen oder -verbote sowie allfällige Zulassungen (z. B. Biozidprodukte), sind zu berücksichtigen.



Version No: 1

Issue date: 21/AUG/2025

Revision date: Not Applicable

Safety Data Sheet (Conforms to Annex II of REACH (1907/2006) - Regulation 2020/878)

## SECTION 1. Identification of the substance / mixture and of the company / undertaking

### 1.1. Product Identifier

Product name	TB Wash
Synonyms	Not Available
Other means of identification	Not Available

### 1.2. Relevant identified uses of the substance or mixture and uses advised against

Relevant identified uses	Laboratory use.
Uses advised against	Not Applicable

### 1.3. Details of the manufacturer or supplier of the safety data sheet

Registered company name	CleanNA
Address	Coenecoop 75, 2741 PH, Waddinxveen, The Netherlands
Telephone	+31 (0) 182 22 33 50
Fax	+31 (0) 182 22 33 98
Website	<a href="http://www.cleanna.com">www.cleanna.com</a>
Email	<a href="mailto:info@cleanna.com">info@cleanna.com</a>

### 1.4. Emergency telephone number

Emergency telephone numbers	112 (European emergency number)
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## SECTION 2. Hazards identification

### 2.1. Classification of the substance or mixture

Classification according to regulation (EC) No 1272/2008 [CLP] and amendments	Not Applicable
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### 2.2. Label elements

Hazard pictogram(s)	Not Applicable
Signal word	Not Applicable

#### Hazard statement(s)

Not Applicable

#### Supplementary statement(s)

Not Applicable

#### Precautionary statement(s) Prevention

Not Applicable

#### Precautionary statement(s) Response

Not Applicable

#### Precautionary statement(s) Storage

Not Applicable

#### Precautionary statement(s) Disposal

Not Applicable

### 2.3. Other hazards

REACH – Art. 57-59: The mixture does not contain Substances of Very High Concern (SVHC) at the SDS issue date.

## SECTION 3. Composition / information on ingredients

### 3.1 Substances

See 'Composition on ingredients' in Section 3.2

### 3.2 Mixtures

1. CAS No 2. EC No 3. Index No 4. REACH No	%[weight]	Name	Classification according to regulation (EC) No 1272/2008 [CLP] and amendments	SCL / M-Factor	Nanoform Particle Characteristics
1. 77-86-1 2. 201-064-4 3. Not Available 4. Not Available	0.1 - 1	Tris (hydroxymethyl) aminomethane	Skin Corrosion/Irritation – Category 2 Serious Eye Damage/Eye Irritation – Category 2 Specific Target Toxicity – Single Exposure (Respiratory Tract Irritation – Category 3 H315, H319, H335 <sup>1</sup>	Not Available	Not Available
<b>Legend:</b> 2. Classification drawn from Regulation (EU) No 1272/2008 - Annex VI; 3. Classification drawn from C&L; * EU IOELVs available; [e] Substance identified as having endocrine disrupting properties					

## SECTION 4. First aid measures

### 4.1. Description of first aid measures

<b>Eye Contact</b>	<p>If this product comes in contact with eyes:</p> <ul style="list-style-type: none"> <li>- Wash out immediately with water.</li> <li>- If irritation continues, seek medical attention.</li> <li>- Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.</li> </ul>
<b>Skin Contact</b>	<p>If skin or hair contact occurs:</p> <ul style="list-style-type: none"> <li>- Flush skin and hair with running water (and soap if available).</li> <li>- Seek medical attention in event of irritation.</li> </ul>
<b>Inhalation</b>	<ul style="list-style-type: none"> <li>- If fumes, aerosols or combustion products are inhaled remove from contaminated area.</li> <li>- Other measures are usually unnecessary.</li> </ul>
<b>Ingestion</b>	<ul style="list-style-type: none"> <li>- Immediately give a glass of water.</li> <li>- First aid is not generally required. If in doubt, contact a Poisons Information Centre or a doctor.</li> </ul>

### 4.2 Most important symptoms and effects, both acute and delayed

See Section 11

### 4.3. Indication of any immediate medical attention and special treatment needed

Treat symptomatically

## SECTION 5. Firefighting measures

### 5.1 Extinguishing media

- There is no restriction on the type of extinguisher which may be used.
- Use extinguishing media suitable for surrounding area.

### 5.2 Special hazards arising from the substrate or mixture

<b>Fire Incompatibility</b>	None known
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### 5.3. Advice for firefighters

<b>Fire Fighting</b>	<ul style="list-style-type: none"> <li>- Use water delivered as a fine spray to control fire and cool adjacent area.</li> <li>- Do <b>NOT</b> approach containers suspected to be hot.</li> <li>- Cool fire exposed containers with water spray from a protected location.</li> <li>- If safe to do so, remove containers from path of fire.</li> <li>- Equipment should be thoroughly decontaminated after use.</li> </ul>
<b>Fire/Explosion Hazard</b>	<ul style="list-style-type: none"> <li>- Non- combustible.</li> <li>- Not considered a significant fire risk, however containers may burn.</li> </ul>

## SECTION 6. Accidental release measures

### 6.1 Personal precautions, protective equipment and emergency procedures

See section 8

**6.2 Environmental precautions**

See section 12

**6.3 Methods and material for containment and cleaning up**

<b>Minor Spills</b>	<ul style="list-style-type: none"> <li>- Clean up all spills immediately.</li> <li>- Avoid breathing vapours and contact with skin and eyes.</li> <li>- Control personal contact with the substance, by using protective equipment.</li> <li>- Contain and absorb spill with sand, earth, inert material or vermiculite.</li> <li>- Wipe up.</li> <li>- Place in a suitable, labelled container for waste disposal.</li> </ul>
<b>Major Spills</b>	<ul style="list-style-type: none"> <li>- Clear area of personnel and move upwind.</li> <li>- Alert Fire Brigade and tell them location and nature of hazard.</li> <li>- Control personal contact with the substance, by using protective equipment.</li> <li>- Prevent spillage from entering drains, sewers or water courses.</li> <li>- Recover product wherever possible.</li> <li>- Put residues in labelled containers for disposal.</li> <li>- If contamination of drains or waterways occurs, advise emergency services.</li> </ul>

**6.4. Reference to other sections**

Personal Protective Equipment advice is contained in Section 8 of the SDS.

**SECTION 7. Handling and storage****7.1. Precautions for safe handling**

<b>Safe handling</b>	<ul style="list-style-type: none"> <li>- Limit all unnecessary personal contact.</li> <li>- Wear protective clothing when risk of exposure occurs.</li> <li>- Use in a well-ventilated area.</li> <li>- Avoid contact with incompatible materials</li> <li>- When handling, <b>DO NOT</b> eat, drink or smoke.</li> <li>- Keep containers securely sealed when not in use.</li> <li>- Avoid physical damage to containers.</li> <li>- Always wash hands with soap and water after handling.</li> <li>- Work clothes should be laundered separately.</li> <li>- Use good occupational work practice.</li> <li>- Observe manufacturer's storage and handling recommendations contained within this SDS.</li> <li>- Atmosphere should be regularly checked against established exposure standards to ensure safe working conditions are maintained.</li> </ul>
<b>Fire and explosion protection</b>	See section 5
<b>Other information</b>	None known

**7.2. Conditions for safe storage, including any incompatibilities**

<b>Suitable container</b>	<ul style="list-style-type: none"> <li>- Polyethylene or polypropylene container.</li> <li>- Packing as recommended by manufacturer.</li> <li>- Check all containers are clearly labelled and free from leaks.</li> </ul>
<b>Storage incompatibility</b>	Avoid contamination of water, foodstuffs, feed or seed.
<b>Hazard categories in accordance with Regulation (EC) No 1272/2008</b>	Not available
<b>Qualifying quantity (tonnes) of dangerous substances as referred to in Article 3(10) for the application of</b>	Not available

**7.3. Specific end use(s)**

See section 1.2

**SECTION 8. Exposure controls / personal protection**

**8.1. Control parameters**

Ingredient	DNELs Exposure Pattern Worker		PNECs Compartment
Tris (hydroxymethyl) aminomethane	Dermal	166.7 mg/kg bw/day (Systemic, Chronic)	300 mg/L (STP)
	Inhalation	117.5 mg/m <sup>3</sup> (Systemic, Chronic)	
	Dermal	83.3 mg/kg bw/day (Systemic, Chronic)	
	Inhalation	29 mg/m <sup>3</sup> (Systemic, Chronic)	
	Oral	8.3 mg/kg bw/day (Systemic, Chronic)	

\* Values for General Population

**Occupational Exposure Limits (OEL)**

**INGREDIENT DATA**

Source	Ingredient	Material name	TWA	STEL	Peak	Notes
Not Available	Not Available	Not Available	Not Available	Not Available	Not Available	Not Available

**Emergency Limits**

Ingredient	TEEL-1	TEEL-2	TEEL-3
Tris (hydroxymethyl) aminomethane	18 mg/m <sup>3</sup>	190 mg/m <sup>3</sup>	1,200 v

Ingredient	Original IDLH	Revised IDLH
Tris (hydroxymethyl) aminomethane	Not Available	Not Available

**Occupational Exposure Banding**

Ingredient	Occupational Exposure Band rating	Occupational Exposure Band Limit
Tris (hydroxymethyl) aminomethane	E	<= 0.01 mg/m <sup>3</sup>

**Notes;** Occupational exposure banding is a process of assigning chemicals into specific categories or bands based on a chemical's potency and the adverse health outcomes associated with exposure. The output of this process is an occupational exposure band (OEB), which corresponds to a range of exposure concentrations that are expected to protect worker health.

**8.2. Exposure controls**

Engineering controls are used to remove a hazard or place a barrier between the worker and the hazard. Well-designed engineering controls can be highly effective in protecting workers and will typically be independent of worker interactions to provide this high level of protection.

The basic types of engineering controls are:

Process controls which involve changing the way a job activity or process is done to reduce the risk.

Enclosure and/or isolation of emission source which keeps a selected hazard "physically" away from the worker and ventilation that strategically "adds" and "removes" air in the work environment. Ventilation can remove or dilute an air contaminant if designed properly. The design of a ventilation system must match the particular process and chemical or contaminant in use.

Employers may need to use multiple types of controls to prevent employee overexposure.

General exhaust is adequate under normal operating conditions. If risk of overexposure exists, wear SAA approved respirator. Correct fit is essential to obtain adequate protection. Provide adequate ventilation in warehouse or closed storage areas. Air contaminants generated in the workplace possess varying 'escape' velocities which, in turn, determine the 'capture velocities' of fresh circulating air required to effectively remove the contaminant.

Type of contaminant	Air Speed
Solvent, vapors, degreasing etc. evaporating from tank (in still air)	0.25 – 0.5 m/s (50 – 100 f/min)
Aerosols, fumes from pouring operations, intermittent container filling, low speed conveyer transfers, welding, spray drift, plating acid fumes, pickling (released at low velocity into zone of active generation)	0.5 – 1 m/s (100 – 200 f/min)
Direct spray, spray painting in shallow booths, drum filling, conveyer loading, crusher debts, gas discharge (active generation into zone of rapid air motion)	1 – 2.5 m/s (200 – 500 f/min)
Grinding, abrasive blasting, tumbling, high speed generated dusts (released at high velocity into zone of very high rapid air motion)	w.5 – 10 m/s (500 – 200 f/min)

Within each range the appropriate value depends to:

Lower end of range	Upper end of range
1: Room air currents minimal of favourable to capture	1: Disturbing room air currents
2: Contaminants of low toxicity or of nuisance value only	2: Contaminants of high toxicity
3: Intermittent, low production	3: High Production, heavy use
4: Large hood or large air mass in motion	4: Small hood – local control only

Simple theory shows that air velocity falls rapidly with distance away from the opening of a simple extraction pipe. Velocity generally decreases with the square of distance from the extraction point (in simple cases). Therefore the air speed at the extraction point should be adjusted, accordingly, after reference to distance from the contaminating source. The air velocity at the extraction fan, for example, should be a minimum of 1-2 m/s (200-400 f/min) for extraction of solvents generated in a tank 2 meters distant from the extraction point. Other mechanical considerations, producing performance deficits within the extraction apparatus, make it essential that theoretical air velocities are multiplied by factors of 10 or more when extraction systems are installed or used.

**8.2.1 Appropriate engineering controls**

**8.2.2. Personal protection**



**Eye and face protection**

- Safety glasses with side shields
- Chemical goggles.

Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of lenses or restrictions on use, should be created for each workplace or task. This should include a review of lens absorption and adsorption for the class of chemicals in use and an account of injury experience. Medical and first-aid personnel should be trained in their removal and suitable equipment should be readily available. In the event of chemical exposure, begin eye irrigation immediately and remove contact lens as soon as practicable. Lens should be removed at the first signs of eye redness or irritation - lens should be removed in a clean environment only after workers have washed hands thoroughly. [CDC NIOSH Current Intelligence Bulletin 59], [AS/NZS 1336 or national equivalent]

**Skin protection**

See Hand protection below

Wear general protective gloves, e.g. light weight rubber gloves.

The selection of suitable gloves does not only depend on the material, but also on further marks of quality which vary from manufacturer to manufacturer. Where the chemical is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

The exact break through time for substances has to be obtained from the manufacturer of the protective gloves and has to be observed when making a final choice.

Personal hygiene is a key element of effective hand care. Gloves must only be worn on clean hands. After using gloves, hands should be washed and dried thoroughly. Application of a non-perfumed moisturiser is recommended.

Suitability and durability of glove type is dependent on usage. Important factors in the selection of gloves include:

- frequency and duration of contact,
- chemical resistance of glove material,
- glove thickness and
- dexterity

Select gloves tested to a relevant standard (e.g. Europe EN 374, US F739, AS/NZS 2161.1 or national equivalent).

· When prolonged or frequently repeated contact may occur, a glove with a protection class of 5 or higher (breakthrough time greater than 240 minutes according to EN 374, AS/NZS 2161.10.1 or national equivalent) is recommended.

· When only brief contact is expected, a glove with a protection class of 3 or higher (breakthrough time greater than 60 minutes according to EN 374, AS/NZS 2161.10.1 or national equivalent) is recommended.

Some glove polymer types are less affected by movement and this should be taken into account when considering gloves for long-term use.

· Contaminated gloves should be replaced.

As defined in ASTM F-739-96 in any application, gloves are rated as:

- Excellent when breakthrough time > 480 min
- Good when breakthrough time > 20 min
- Fair when breakthrough time < 20 min
- Poor when glove material degrades

For general applications, gloves with a thickness typically greater than 0.35 mm, are recommended.

It should be emphasised that glove thickness is not necessarily a good predictor of glove resistance to a specific chemical, as the permeation efficiency of the glove will be dependent on the exact composition of the glove material. Therefore, glove selection should also be based on consideration of the task requirements and knowledge of breakthrough times.

Glove thickness may also vary depending on the glove manufacturer, the glove type and the glove model. Therefore, the manufacturers technical data should always be taken into account to ensure selection of the most appropriate glove for the task.

Note: Depending on the activity being conducted, gloves of varying thickness may be required for specific tasks. For example:

- Thinner gloves (down to 0.1 mm or less) may be required where a high degree of manual dexterity is needed. However, these gloves are only likely to give short duration protection and would normally be just for single use applications, then disposed of.
- Thicker gloves (up to 3 mm or more) may be required where there is a mechanical (as well as a chemical) risk i.e. where there is abrasion or puncture potential

Gloves must only be worn on clean hands. After using gloves, hands should be washed and dried thoroughly. Application of a non-perfumed moisturiser is recommended.

**Body protection**

See Other protection below

No special equipment needed when handling small quantities.

**Other protection****OTHERWISE:**

- Overalls.
- Barrier cream.
- Eyewash unit.

**8.2.3. Environmental exposure controls**

See section 12

**SECTION 9. Physical and chemical properties****9.1. Information on basic physical and chemical properties**

<b>Appearance</b>	Not Available		
<b>Physical state</b>	Liquid	<b>Relative density (Water = 1)</b>	Not Available
<b>Odour</b>	Not Available	<b>Partition coefficient n-octanol / water</b>	Not Available
<b>Odour threshold</b>	Not Available	<b>Auto-ignition temperature (°C)</b>	Not Available
<b>pH (as supplied)</b>	Not Available	<b>Decomposition temperature (°C)</b>	Not Available
<b>Melting point / freezing point (°C)</b>	Not Available	<b>Viscosity (cSt)</b>	Not Available
<b>Initial boiling point and boiling range (°C)</b>	Not Available	<b>Molecular weight (g/mol)</b>	Not Available
<b>Flash point (°C)</b>	Not Available	<b>Taste</b>	Not Available
<b>Evaporation rate</b>	Not Available	<b>Explosive properties</b>	Not Available
<b>Flammability</b>	Not Available	<b>Oxidising properties</b>	Not Available
<b>Upper Explosive Limit (%)</b>	Not Available	<b>Surface Tension (dyn/cm or mN/m)</b>	Not Available
<b>Lower Explosive Limit (%)</b>	Not Available	<b>Volatile Component (%vol)</b>	Not Available
<b>Vapour pressure (kPa)</b>	Not Available	<b>Gas group</b>	Not Available
<b>Solubility in water</b>	Immiscible	<b>pH as a solution (1%)</b>	Not Available
<b>Vapour density (Air = 1)</b>	Not Available	<b>VOC g/L</b>	Not Available
<b>Nanoform Solubility</b>	Not Available	<b>Nanoform Particle Characteristics</b>	Not Available
<b>Particle Size</b>	Not Available		

**9.2. Other information**

Not Available

**SECTION 10. Stability and reactivity**

<b>10.1.Reactivity</b>	See section 7.2
<b>10.2. Chemical stability</b>	Product is considered stable and hazardous polymerisation will not occur.
<b>10.3. Possibility of hazardous reactions</b>	See section 7.2
<b>10.4. Conditions to avoid</b>	See section 7.2
<b>10.5. Incompatible materials</b>	See section 7.2
<b>10.6. Hazardous decomposition products</b>	See section 5.3

**SECTION 11. Toxicological information****11.1. Information on toxicological effects**

<b>Inhaled</b>	The material is not thought to produce adverse health effects or irritation of the respiratory tract (as classified by EC Directives using animal models). Nevertheless, good hygiene practice requires that exposure be kept to a minimum and that suitable control measures be used in an occupational setting.
<b>Ingestion</b>	The material has <b>NOT</b> been classified by EC Directives or other classification systems as 'harmful by ingestion'. This is because of the lack of corroborating animal or human evidence.
<b>Skin Contact</b>	The material is not thought to produce adverse health effects or skin irritation following contact (as classified by EC Directives using animal models). Nevertheless, good hygiene practice requires that exposure be kept to a minimum and that suitable gloves be used in an occupational setting.
<b>Eye</b>	Although the liquid is not thought to be an irritant (as classified by EC Directives), direct contact with the eye may produce transient discomfort characterised by tearing or conjunctival redness (as with windburn).

<b>Chronic</b>	Long-term exposure to the product is not thought to produce chronic effects adverse to the health (as classified by EC Directives using animal models); nevertheless exposure by all routes should be minimised as a matter of course.	
<b>TB Wash</b>	<b>TOXICITY</b>	<b>IRRITATION</b>
	Not Available	Not Available
Tris (hydroxymethyl) aminomethane	<b>TOXICITY</b>	<b>IRRITATION</b>
	Dermal (rat) LD50 > 5000 mg/kg <sup>1</sup> Oral (rat) LD50 > 5000 mg/kg <sup>1</sup>	Eye: no adverse effect observed (not irritating) <sup>1</sup> Skin: no adverse effect observed (not irritating) <sup>1</sup>
<b>Legend:</b>	1. Value obtained from Europe ECHA Registered Substances - Acute toxicity 2. Value obtained from manufacturer's SDS. Unless otherwise specified data extracted from RTECS - Register of Toxic Effect of chemical Substances	

Tris (hydroxymethyl) aminomethane	<p>Asthma-like symptoms may continue for months or even years after exposure to the material ends. This may be due to a non-allergic condition known as reactive airways dysfunction syndrome (RADS) which can occur after exposure to high levels of highly irritating compound. Main criteria for diagnosing RADS include the absence of previous airways disease in a non-atopic individual, with sudden onset of persistent asthma-like symptoms within minutes to hours of a documented exposure to the irritant. Other criteria for diagnosis of RADS include a reversible airflow pattern on lung function tests, moderate to severe bronchial hyperreactivity on methacholine challenge testing, and the lack of minimal lymphocytic inflammation, without eosinophilia. RADS (or asthma) following an irritating inhalation is an infrequent disorder with rates related to the concentration of and duration of exposure to the irritating substance. On the other hand, industrial bronchitis is a disorder that occurs as a result of exposure due to high concentrations of irritating substance (often particles) and is completely reversible after exposure ceases. The disorder is characterized by difficulty breathing, cough and mucus production.</p> <p>TRIS AMINO and its surrogate chemicals have very little, if any, toxicity. They are mildly irritating to eyes at moderate concentrations, and do not cause allergic skin reactions. Ingestion of relatively high dosages can cause liver changes. Patients with decreased liver function should not be given these substances over extended treatment periods. They have been known to have a harmful effect on the foetus if taken during pregnancy.</p>
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Acute Toxicity	✗
Skin Irritation/Corrosion	✗
Serious Eye Damage/Irritation	✗
Respiratory or Skin sensitisation	✗
Mutagenicity	✗

Carcinogenicity	✗
Reproductivity	✗
STOT - Single Exposure	✗
STOT - Repeated Exposure	✗
Aspiration Hazard	✗

**Legend:** ✗ – Data either not available or does not fill the criteria for classification  
 ✓ – Data available to make classification

## 11.2. Information on other hazards

**11.2.1 Endocrine Disruption Properties**  
 Not Available

**11.2.2 Other Information**  
 See Section 11.1

**SECTION 12. Ecological information****12.1 Toxicity**

	Endpoint	Test duration (hr)	Species	Value	Source
TB Wash	Not available	Not available	Not available	Not available	Not available
	Endpoint	Test Duration (hr)	Species	Value	Source
Tris (hydroxymethyl) aminomethane	NOEC(ECx)	72	Algae or other aquatic plants	100 mg/L	2
	EC50	72	Algae or other aquatic plants	397 mg/L	2
	Ec50	48	Crustacea	> 980 mg/L	2
<b>Legend:</b>	Extracted from 1. IUCLID Toxicity Data 2. Europe ECHA Registered Substances - Ecotoxicological Information - Aquatic Toxicity 4. US EPA, Ecotox database - Aquatic Toxicity Data 5. ECETOC Aquatic Hazard Assessment Data 6. NITE (Japan) - Bioconcentration Data 7. METI (Japan) - Bioconcentration Data 8. Vendor Data				

**12.2. Persistence and degradability**

Ingredient	Persistence: Water/Soil	Persistence: Air
Tris (hydroxymethyl) aminomethane	LOW	LOW

**12.3. Bio accumulative potential**

Ingredient	Bioaccumulation
Tris (hydroxymethyl) aminomethane	LOW (LogKOW = -1.5606)

**12.4. Mobility in soil**

Ingredient	Mobility
Tris (hydroxymethyl) aminomethane	HIGH (KOC = 1)

**12.5. Results of PBT and vPvB assessment**

	P	B	T
Relevant available data	Not Available	Not Available	Not Available
PBT	✘	✘	✘
vPvB	✘	✘	✘
PBT Criteria fulfilled?	No		
vPvB	No		

**12.6. Endocrine Disruption Properties**

Not Available

**12.7. Other adverse effects**

Not Available

**SECTION 13. Disposal considerations****13.1. Waste treatment methods**

<b>Product / Packaging disposal</b>	<p>Legislation addressing waste disposal requirements may differ by country, state and/ or territory. Each user must refer to laws operating in their area. In some areas, certain wastes must be tracked.</p> <p>A Hierarchy of Controls seems to be common - the user should investigate:</p> <ul style="list-style-type: none"> <li>- Reduction</li> <li>- Reuse</li> <li>- Recycling</li> <li>- Disposal (if all else fails)</li> </ul> <p>This material may be recycled if unused, or if it has not been contaminated so as to make it unsuitable for its intended use. If it has been contaminated, it may be possible to reclaim the product by filtration, distillation or some other means. Shelf life considerations should also be applied in making decisions of this type. Note that properties of a material may change in use, and recycling or reuse may not always be appropriate.</p> <ul style="list-style-type: none"> <li>- <b>DO NOT</b> allow wash water from cleaning or process equipment to enter drains.</li> <li>- It may be necessary to collect all wash water for treatment before disposal.</li> <li>- In all cases disposal to sewer may be subject to local laws and regulations and these should be considered first.</li> <li>- Where in doubt contact the responsible authority.</li> <li>- Recycle wherever possible.</li> <li>- Consult manufacturer for recycling options or consult local or regional waste management authority for disposal if no suitable treatment or disposal facility can be identified.</li> <li>- Dispose of by: burial in a land-fill specifically licensed to accept chemical and / or pharmaceutical wastes or incineration in a licensed apparatus (after admixture with suitable combustible material).</li> <li>- Decontaminate empty containers. Observe all label safeguards until containers are cleaned and destroyed.</li> </ul>
<b>Waste treatment options</b>	Not Available
<b>Sewage disposal options</b>	Not Available

**SECTION 14 Transport information****Labels Required**

<b>Marine Pollutant</b>	NO
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**Land transport (ADR): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS**

14.1. UN number	Not Applicable	
14.2. UN proper shipping name	Not Applicable	
14.3. Transport hazard class(es)	Class	Not Applicable
	Sub risk	Not Applicable
14.4. Packing group	Not Applicable	
14.5. Environmental hazard	Not Applicable	
14.6. Special precautions for user	Hazard identification (Kemler)	Not Applicable
	Classification code	Not Applicable
	Hazard Label	Not Applicable
	Special provisions	Not Applicable
	Limited quantity	Not Applicable
	Tunnel Restriction Code	Not Applicable

**Air transport (ICAO-IATA / DGR): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS**

14.1. UN number	Not Applicable	
14.2. UN proper shipping name	Not Applicable	
14.3. Transport hazard class(es)	ICAO/IATA Class	Not Applicable
	ICAO / IATA Sub risk	Not Applicable
	ERG Code	Not Applicable
14.4. Packing group	Not Applicable	
14.5. Environmental hazard	Not Applicable	
14.6. Special precautions for user	Special provisions	Not Applicable
	Cargo Only Packing Instructions	Not Applicable
	Cargo Only Maximum Qty / Pack	Not Applicable
	Passenger and Cargo Packing Instructions	Not Applicable
	Passenger and Cargo Maximum Qty / Pack	Not Applicable
	Passenger and Cargo Limited Quantity Packing Instructions	Not Applicable
	Passenger and Cargo Limited Maximum Qty / Pack	Not Applicable

**Sea transport (IMDG-Code / GGVSee): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS**

14.1. UN number	Not Applicable	
14.2. UN proper shipping name	Not Applicable	
14.3. Transport hazard class(es)	IMDG Class	Not Applicable
	IMDG Sub risk	Not Applicable
14.4. Packing group	Not Applicable	
14.5. Environmental hazard	Not Applicable	
14.6. Special precautions for user	EMS Number	Not Applicable
	Special provisions	Not Applicable
	Limited Quantities	Not Applicable

**Inland waterways transport (ADN): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS**

14.1. UN number	Not Applicable	
14.2. UN proper shipping name	Not Applicable	
14.3. Transport hazard class(es)	Not applicable	Not Applicable
14.4. Packing group	Not applicable	
14.5. Environmental hazard	Not applicable	
14.6 Special precautions for user	Classification code	Not Applicable
	Special provisions	Not Applicable

Limited quantity	Not Applicable
Equipment required	Not Applicable
Fire cones number	Not Applicable

**14.7. Transport in bulk according to Annex II of MARPOL and the IBC code**

Not Applicable

**14.8. Transport in bulk in accordance with MARPOL Annex V and the IMSBC Code**

Product name	Group
Tris (hydroxymethyl) aminomethane	Not Available

**14.9. Transport in bulk in accordance with the ICG Code**

Product name	Ship Type
Tris (hydroxymethyl) aminomethane	Not Available

**SECTION 15. Regulatory information****15.1. Safety, health and environmental regulations / legislation specific for the substance or mixture****Tris (hydroxymethyl) aminomethane is found on the following regulator lists**

Europe EC Inventory	FEI Equine Prohibited Substances List – Controlled Medication
European Union – European Inventory of Existing Commercial Chemical Substances (EINICS)	FEI Equine Prohibited Substances List 9ESPL)

This safety data sheet is in compliance with the following EU legislation and its adaptations - as far as applicable - : Directives 98/24/EC, - 92/85/EEC, - 94/33/EC, - 2008/98/EC, - 2010/75/EU; Commission Regulation (EU) 2020/878; Regulation (EC) No 1272/2008 as updated through ATPs.

**15.2. Chemical safety assessment**

No Chemical Safety Assessment has been carried out for this substance/mixture by the supplier.

**ECHA SUMMARY**

Ingredient	CAS number	Index No.	ECHA Dossier
Tris (hydroxymethyl) aminomethane	77-86-1	Not Available	Not Available

Harmonisation (C&L Inventory)	Hazard Class and Category Code(s)	Pictograms Signal Word Code(s)	Hazard Statement Code(s)
1	Skin Irrit. 2, Eye Irrit. 2 STOT SE 3	GHS07, Wng	H315, H319, H335
2	Skin Irrit. 2, Eye Irrit. 2A, STOT SE 3, Acute Tox 4, Acute Tox 4	GHS07, Wng	H312, H315, H319, H332, H335
<i>Harmonisation Code</i>	1 = <i>The most prevalent classification</i> 2 = <i>The most severe classification</i>		

**National Inventory Status**

National Inventory	Status
Australia - AIIIC / Australia Non-Industrial Use	Yes
Canada - DSL	Yes
Canada - NDSL	No (Tris (hydroxymethyl) aminomethane )
China - IECSC	Yes
Europe - EINEC / ELINCS / NLP	Yes
Japan - ENCS	Yes
Korea - KECL	Yes
New Zealand - NZIoC	Yes
Philippines - PICCS	Yes
USA - TSCA	Yes
Taiwan - TCSI	Yes
Mexico - INSQ	Yes
Vietnam - NCI	Yes
Russia - FBEPH	Yes

**Legend:**

Yes = All CAS declared ingredients are on the inventory  
No = One or more of the CAS listed ingredients are not on the inventory. These ingredients may be exempt or will require registration.

**SECTION 16. Other information****Full text Risk and Hazard codes**

H312	Harmful in contact with skin
H315	Causes skin irritation
H319	Causes serious eye irritation
H332	Harmful if inhaled
H335	May cause respiratory irritation

**Version Summary**

Version	Date of Update	Sections Updated
1	21/AUG/2025	Initial version

**Other information**

Classification of the preparation and its individual components has drawn on official and authoritative sources as well as independent review by the Chemwatch Classification committee using available literature references.

The SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings. Risks may be determined by reference to Exposures Scenarios. Scale of use, frequency of use and current or available engineering controls must be considered.

For detailed advice on Personal Protective Equipment, refer to the following EU CEN Standards:

- EN 166 Personal eye-protection
- EN 340 Protective clothing
- EN 374 Protective gloves against chemicals and micro-organisms
- EN 13832 Footwear protecting against chemicals
- EN 133 Respiratory protective devices

**Definitions and abbreviations**

ACGIH	American Conference of Governmental Industrial Hygienists
AIC	Australian Inventory of Industrial Chemicals
BCF:	Bio Concentration Factors
BEI	Biological Exposure Index
DSL	Domestic Substances List
EINECS	European Inventory of Existing Commercial chemical Substances
ELINCS	European List of Notified Chemical Substances
ENCS	Existing and New Chemical Substances Inventory
ES	Exposure Standard
FBEPH	Russian Register of Potentially Hazardous Chemical and Biological Substances
IARC	International Agency for Research on Cancer
IECSC	Inventory of Existing Chemical Substance in China
IDLH	Immediately Dangerous to Life or Health Concentrations
INSQ	Inventario Nacional de Sustancias Químicas
KECI:	Korea Existing Chemicals Inventory
LOAEL	Lowest Observed Adverse Effect Level
LOD	Limit Of Detection
NCI	National Chemical Inventory
NDSL	Non-Domestic Substances List
NLP	No-Longer Polymers
NOAEL	No Observed Adverse Effect Level
NZIoC:	New Zealand Inventory of Chemicals
OSF	Odour Safety Factor
OTV	Odour Threshold Value
PC	Permissible Concentration
PC-STEL	Permissible Concentration Short Term Exposure Limit
PICCS	Philippine Inventory of Chemicals and Chemical Substances
STEL	Short Term Exposure Limit
TCSI	Taiwan Chemical Substance Inventory
TEEL	Temporary Emergency Exposure Limit
TLV	Threshold Limit Value
TSCA	Toxic Substances Control Act
TWA	Time Weighted Average

## Deckblatt zum Sicherheitsdatenblatt

Erstellt am 02.03.2026 Version 01.00

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### Produktidentifikation:

Handelsname TN Lysis  
Verwendungszweck Ausschliesslich und nur für den Laborgebrauch zu verwenden. Nur für Forschungszwecke geeignet, Diagnostikzwecke sind von der Verwendung ausgeschlossen.

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### Lieferant, der das Sicherheitsdatenblatt übermittelt:

INTEGRA Biosciences AG  
Tardisstrasse 201,  
7205 Zizers, Schweiz  
www.integra-biosciences.com  
Tel.: +41 (0)81 286 95 30  
info-ch@integra-biosciences.com

**Nationale Notfallnummer: 145** (24h erreichbar, Tox Info Suisse, Zürich; für Anrufe aus der Schweiz, Auskünfte auf Deutsch, Französisch und Italienisch)

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### Informationen für die Verwender betreffend:

#### Abschnitt 7 – Handhabung und Lagerung

Allfällig relevante schweizerische Anforderungen des Arbeitnehmerschutzes und des Umweltschutzes betreffend die Handhabung und Lagerung sind zu berücksichtigen.

#### Abschnitt 8 – Begrenzung und Überwachung der Exposition / Persönliche Schutzausrüstung

Die im Sicherheitsdatenblatt angegebenen Grenzwerte basieren auf den einschlägigen EG-/EU-Vorschriften. Für den Arbeitnehmerschutz in der Schweiz sind zusätzlich die Vorgaben der SUVA zu berücksichtigen. Gegebenenfalls ist die persönliche Schutzausrüstung zu spezifizieren.

#### Abschnitt 13 – Hinweise zur Entsorgung

Hinweise zur Entsorgung sind gemäß der Technischen Verordnung über Abfälle (TVA), der Verordnung über den Verkehr mit Abfällen (VeVA) sowie der Verordnung des UVEK über Listen zum Verkehr mit Abfällen (LVA) zu berücksichtigen.

#### Abschnitt 15 – Rechtsvorschriften

Allfällig relevante schweizerische Vorschriften, z. B. betreffend Luftreinhalte-Verordnung, Störfallverordnung (Mengenschwellen), Abgabevorschriften, Verwendungsbeschränkungen oder -verbote sowie allfällige Zulassungen (z. B. Biozidprodukte), sind zu berücksichtigen.



Version No: 1

Issue date: 26/AUG/2025

Revised: NONE

Safety Data Sheet (Conforms to Annex II of REACH (1907/2006) - Regulation 2020/878)

## SECTION 1. Identification of the substance / mixture and of the company / undertaking

### 1.1. Product Identifier

Product name	TN Lysis
Synonyms	Not Available
Other means of identification	Not Available

### 1.2. Relevant identified uses of the substance or mixture and uses advised against

Relevant identified uses	Laboratory use.
Uses advised against	Not Applicable

### 1.3. Details of the manufacturer or supplier of the safety data sheet

Registered company name	CleanNA
Address	Coenecoop 75, 2741 PH, Waddinxveen, The Netherlands
Telephone	+31 (0) 182 22 33 50
Fax	+31 (0) 182 22 33 98
Website	<a href="http://www.cleanna.com">www.cleanna.com</a>
Email	<a href="mailto:info@cleanna.com">info@cleanna.com</a>

### 1.4. Emergency telephone number

Emergency telephone numbers	112 (European emergency number)
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## SECTION 2. Hazards identification

### 2.1. Classification of the substance or mixture

Classification according to regulation (EC) No 1272/2008 [CLP] and amendments [1]	Not Applicable
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### 2.2. Label elements

Hazard pictogram(s)	 GHS07
Signal word	Warning

#### Hazard statement(s)

H302 + H332	Harmful if swallowed or inhaled
H315	Causes skin irritation
H319	Causes serious eye irritation
H373	May cause damage to organs through prolonged or repeated exposure

#### Supplementary statement(s)

Supplementary statement(s)	Not Applicable
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**Precautionary statement(s) Prevention**

<b>P261</b>	Avoid breathing dust / fume / gas / mist / vapours / spray
<b>P264</b>	Wash skin thoroughly after handling
<b>P301+ P312</b>	IF SWALLOWED: Call doctor or Poisons Information Centre if feeling unwell
<b>P302 + P352</b>	IF ON SKIN: Wash with plenty of water
<b>P304 + P340 + P312</b>	IF INHALED: remove person to fresh air and keep comfortable for breathing. Call doctor or Poisons Information Center if feeling unwell
<b>P305 + P351 + P338</b>	IF IN EYES: rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing

**Precautionary statement(s) Response**

<b>P101</b>	If medical advice is needed have product container or label at hand
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**Precautionary statement(s) Storage**

	Not Applicable
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**Precautionary statement(s) Disposal**

<b>P501</b>	Dispose of contents / container to an approved waste disposal plant
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**2.3. Other hazards**

REACH - Art.57-59: The mixture does not contain Substances of Very High Concern (SVHC) at the SDS print date.

**SECTION 3. Composition / information on ingredients****3.1 Substances**

See 'Composition on ingredients' in Section 3.2

**3.2 Mixtures**

1. CAS No 2. EC No 3. Index No 4. REACH No	% [weight]	Name	Classification according to regulation (EC) No 1272/2008 [CLP] and amendments	SCL / M-Factor	Nanoform Particle Characteristics
1.50-01-1 2.200-002-3 3.6-7-148-00-0 4. Not Available	0.1 - 75 %	Guanidine (hydrochloride)	Acute Toxicity - Category 4 Skin Irritation - Category 2 Eye irritation - Category 2 H302; H315; H319; H332; <sup>[1]</sup>	Not Available	Not Available
<b>Legend</b>	<sup>1</sup> Classification drawn from Regulation (EU) No 1272/2008 - Annex VI				

**SECTION 4. First aid measures****4.1. Description of first aid measures**

<b>Eye Contact</b>	<ul style="list-style-type: none"> <li>- Immediately flush with water for at least 15 minutes</li> <li>- Remove contact lenses.</li> <li>- Consult a doctor in event of irritation</li> </ul>
<b>Skin Contact</b>	<ul style="list-style-type: none"> <li>- Immediately flush skin with water for at least 15 minutes.</li> <li>- Remove contaminated clothing and shoes. Wash before reuse.</li> <li>- Consult a doctor in event of irritation</li> </ul>
<b>Inhalation</b>	<ul style="list-style-type: none"> <li>- If inhaled remove from contaminated area into fresh air.</li> <li>- Consult a doctor in event of irritation or breathing difficulties</li> </ul>
<b>Ingestion</b>	<ul style="list-style-type: none"> <li>- Rinse mouth with water. Do <b>NOT</b> induce vomiting unless directed by medical personnel</li> <li>- Consult a doctor or a Poison Information Center when in doubt</li> </ul>

**4.2 Most important symptoms and effects, both acute and delayed**

See Section 11

**4.3. Indication of any immediate medical attention and special treatment needed**

Treat symptomatically

## SECTION 5. Firefighting measures

### 5.1 Extinguishing media

- powder
- CO2
- Use extinguishing media suitable for surrounding area

Contain gases / vapours / mists with water spray

### 5.2 Special hazards arising from the substrate or mixture

Fire Incompatibility	None known
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### 5.3. Advice for firefighters

Fire Fighting	<ul style="list-style-type: none"> <li>- Wear self-contained breathing apparatus</li> <li>- Contain escaping vapours with water</li> <li>- Prevent, by any means available, spillage from entering drains or water courses.</li> <li>- Use firefighting procedures suitable for surrounding area.</li> <li>- <b>DO NOT</b> approach containers suspected to be hot.</li> <li>- Cool fire exposed containers with water spray from a protected location.</li> <li>- If safe to do so, remove containers from path of fire.</li> <li>- Equipment should be thoroughly decontaminated after use.</li> </ul>
Fire/Explosion Hazard	<ul style="list-style-type: none"> <li>- Combustible.</li> <li>- Not considered a significant fire risk, however containers may burn</li> <li>- May emit nitrogen oxides (NOx)</li> <li>- May emit carbon oxides</li> <li>- May emit sodium oxides</li> <li>- May emit hydrogen chloride gas</li> </ul>

## SECTION 6. Accidental release measures

### 6.1 Personal precautions, protective equipment and emergency procedures

See section 8

### 6.2 Environmental precautions

See section 12

### 6.3 Methods and material for containment and cleaning up

Minor Spills	<ul style="list-style-type: none"> <li>- Clean up all spills immediately.</li> <li>- Avoid breathing vapours and contact with skin and eyes.</li> <li>- Control personal contact with the substance by using protective equipment.</li> <li>- Contain and absorb spill with sand, earth, inert material or vermiculite.</li> <li>- Wipe / sweep up.</li> <li>- Place in a suitable, labelled container for waste disposal.</li> </ul>
Major Spills	<ul style="list-style-type: none"> <li>- Clear area of personnel and move upwind.</li> <li>- Alert Fire Brigade and tell them location and nature of hazard.</li> <li>- Control personal contact with the substance by using protective equipment</li> <li>- Prevent, by any means available, spillage from entering drains or water courses.</li> <li>- Recover product wherever possible.</li> <li>- Collect residue and seal in labelled drums for disposal.</li> <li>- Wash area and prevent runoff into drains.</li> <li>- If contamination of drains or waterways occurs, advise emergency services.</li> </ul>

### 6.4. Reference to other sections

Personal Protective Equipment advice is contained in Section 8 of the SDS.

## SECTION 7. Handling and storage

### 7.1. Precautions for safe handling

Safe handling	<ul style="list-style-type: none"> <li>- Avoid all personal contact, including inhalation.</li> <li>- Wear protective clothing when risk of exposure occurs.</li> <li>- Use in a well-ventilated area.</li> <li>- Prevent formation of aerosols / dust</li> <li>- Work under hood</li> <li>- Do NOT inhale mixture</li> <li>- Prevent concentration in hollows and sumps.</li> <li>- <b>DO NOT</b> enter confined spaces until atmosphere has been checked.</li> <li>- <b>DO NOT</b> allow material to contact humans, exposed food or food utensils.</li> <li>- When handling, <b>DO NOT</b> eat, drink or smoke.</li> <li>- Keep containers securely sealed when not in use.</li> <li>- Avoid physical damage to containers.</li> <li>- Always wash hands with soap and water after handling.</li> <li>- Work clothes should be laundered separately.</li> <li>- Launder contaminated clothing before re-use.</li> <li>- Use good occupational work practice.</li> <li>- Observe manufacturer's storage and handling recommendations contained within this SDS.</li> </ul>
Fire and explosion protection	See section 5
Other information	None known

**7.2. Conditions for safe storage, including any incompatibilities**

<b>Suitable container</b>	<ul style="list-style-type: none"> <li>- Polyethylene or polypropylene container.</li> <li>- Check all containers are clearly labelled and free from leaks.</li> </ul>
<b>Storage incompatibility</b>	None known
<b>Hazard categories in accordance with Regulation (EC) No 1272/2008</b>	Not Available
<b>Qualifying quantity (tonnes) of dangerous substances as referred to in Article 3(10) for the application of</b>	Not Available

**7.3. Specific end use(s)**

See section 1.2

**SECTION 8. Exposure controls / personal protection**

**8.1. Control parameters**

<b>Ingredient</b>	<b>DNELs Exposure Pattern Worker</b>	<b>PNECs Compartment</b>
Guanidine (hydrochloride)	Not Available	Not Available

\* Values for General Population

**Occupational Exposure Limits (OEL)**

**INGREDIENT DATA**

<b>Source</b>	<b>Ingredient</b>	<b>Material name</b>	<b>TWA</b>	<b>STEL</b>	<b>Peak</b>	<b>Notes</b>
Not available	Not Available	Not Available	Not Available	Not Available	Not Available	Not Available

**Emergency Limits**

<b>Ingredient</b>	<b>TEEL-1</b>	<b>TEEL-2</b>	<b>TEEL-3</b>
Guanidine (hydrochloride)	Not Available	Not Available	Not Available

<b>Ingredient</b>	<b>Original IDLH</b>	<b>Revised IDLH</b>
Guanidine (hydrochloride)	Not Available	Not Available

**8.2. Exposure controls**

Engineering controls are used to remove a hazard or place a barrier between the worker and the hazard. Well-designed engineering controls can be highly effective in protecting workers and will typically be independent of worker interactions to provide this high level of protection.

The basic types of engineering controls are:

- Process controls which involve changing the way a job activity or process is done to reduce the risk.
- Enclosure and/or isolation of emission source which keeps a selected hazard "physically" away from the worker and ventilation that strategically "adds" and "removes" air in the work environment. Ventilation can remove or dilute an air contaminant if designed properly. The design of a ventilation system must match the particular process and chemical or contaminant in use.
- Employers may need to use multiple types of controls to prevent employee overexposure.

General exhaust is adequate under normal operating conditions. If risk of overexposure exists, wear SAA approved respirator. Correct fit is essential to obtain adequate protection. Provide adequate ventilation in warehouse or closed storage areas. Air contaminants generated in the workplace possess varying "escape" velocities which, in turn, determine the "capture velocities" of fresh circulating air required to effectively remove the contaminant.


- Use in a fume hood where applicable.
- Ensure laboratory is equipped with safety shower and eye wash station.

**8.2.1. Appropriate engineering controls**

<b>Type of contaminant</b>	<b>Air Speed</b>
solvent, vapours, degreasing etc., evaporating from tank (in still air)	0.25 – 0.50m/s (50 – 100 f/min)
aerosols, fumes from pouring operations, intermittent container filling, low speed conveyer transfers, welding, spray drift, plating acid fumes, pickling (released at low velocity into zone of active generation)	0.50 - 1 m/s (100 – 200 f/min)
direct spray, spray painting in shallow booths, drum filling, conveyer loading, crusher dusts, gas discharge (active generation into zone of rapid air motion)	1 - 2.50 m/s (200 - 500 f/min)
grinding, abrasive blasting, tumbling, high speed wheel generated dusts (released at high initial velocity into zone of very high rapid air motion).	2.50 -10 m/s (500 – 2000 f/min)

Within each range the appropriate value depends on:

<b>Lower end of range</b>	<b>Upper end of range</b>
1: Room air currents minimal or favourable to capture	1: Disturbing room air currents
2: Contaminants of low toxicity or of nuisance value only	2: Contaminants of high toxicity
3: Intermittent, low production.	3: High production, heavy use
4: Large hood or large air mass in motion	4: Small hood - local control only

	<p>Simple theory shows that air velocity falls rapidly with distance away from the opening of a simple extraction pipe. Velocity generally decreases with the square of distance from the extraction point (in simple cases). Therefore the air speed at the extraction point should be adjusted, accordingly, after reference to distance from the contaminating source. The air velocity at the extraction fan, for example, should be a minimum of 1-2 m/s (200-400 f/min.) for extraction of solvents generated in a tank 2 meters distant from the extraction point. Other mechanical considerations, producing performance deficits within the extraction apparatus, make it essential that theoretical air velocities are multiplied by factors of 10 or more when extraction systems are installed or used.</p>
<b>8.2.2. Personal protection</b>	
<b>Eye and face protection</b>	<ul style="list-style-type: none"> <li>- Safety glasses with side shields</li> <li>- Chemical goggles</li> </ul> <p>Contact lenses may pose a special hazard. Soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of lenses or restrictions on use, should be created for each workplace or task. This should include a review of lens absorption and adsorption for the class of chemicals in use and an account of injury experience. Medical and first-aid personnel should be trained in their removal and suitable equipment should be readily available. In the event of chemical exposure, begin eye irrigation immediately and remove contact lenses as soon as practicable. Lens should be removed at first signs of eye redness or irritation. Lens should be removed in a clean environment only after workers have washed their hands thoroughly. [ CDC NIOSH Current Intelligence Bulletin 59], [AS/NZS 1336 or national equivalent ]</p>
<b>Skin protection</b>	See Hand protection below
<b>Hand / feet protection</b>	<ul style="list-style-type: none"> <li>- Wear chemical protective gloves, e.g. PVC</li> <li>- Wear safety footwear or safety gumboots, e.g. Rubber</li> </ul> <p>The selection of suitable gloves does not only depend on the material, but also on further marks of quality which vary from manufacturer to manufacturer. Where the chemical is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.</p> <p>The exact break through time for substances has to be obtained from the manufacturer of the protective gloves and has to be observed when making a final choice.</p> <p>Personal hygiene is a key element of effective hand care. Gloves must only be worn on clean hands. After using gloves, hands should be washed and dried thoroughly. Application of a non-perfumed moisturiser is recommended.</p> <p>Suitability and durability of glove type is dependent on usage. Important factors in the selection of gloves include:</p> <ul style="list-style-type: none"> <li>· frequency and duration of contact,</li> <li>· chemical resistance of glove material,</li> <li>· glove thickness and</li> <li>· dexterity</li> </ul> <p>Select gloves tested to a relevant standard (e.g. Europe EN 374, US F739, AS/NZS 2161.1 or national equivalent).</p> <ul style="list-style-type: none"> <li>- When prolonged or frequently repeated contact may occur, a glove with a protection class of 5 or higher (breakthrough time greater than 240 minutes according to EN 374, AS/NZS 2161.10.1 or national equivalent) is recommended.</li> <li>- When only brief contact is expected, a glove with a protection class of 3 or higher (breakthrough time greater than 60 minutes according to EN 374, AS/NZS 2161.10.1 or national equivalent) is recommended.</li> <li>- Some glove polymer types are less affected by movement and this should be taken into account when considering gloves for long-term use.</li> <li>- Contaminated gloves should be replaced.</li> </ul> <p>As defined in ASTM F-739-96 in any application, gloves are rated as:</p> <ul style="list-style-type: none"> <li>- Excellent when breakthrough time &gt; 480 min</li> <li>- Good when breakthrough time &gt; 20 min</li> <li>- Fair when breakthrough time &lt; 20 min</li> <li>- Poor when glove material degrades</li> </ul> <p>For general applications, gloves with a thickness typically greater than 0.35 mm, are recommended.</p> <p>It should be emphasised that glove thickness is not necessarily a good predictor of glove resistance to a specific chemical, as the permeation efficiency of the glove will be dependent on the exact composition of the glove material. Therefore, glove selection should also be based on consideration of the task requirements and knowledge of breakthrough times.</p> <p>Glove thickness may also vary depending on the glove manufacturer, the glove type and the glove model. Therefore, the manufacturers technical data should always be taken into account to ensure selection of the most appropriate glove for the task.</p> <p>Note: Depending on the activity being conducted, gloves of varying thickness may be required for specific tasks. For example:</p> <ul style="list-style-type: none"> <li>- Thinner gloves (down to 0.1 mm or less) may be required where a high degree of manual dexterity is needed. However, these gloves are only likely to give short duration protection and would normally be just for single use applications, then disposed of.</li> <li>- Thicker gloves (up to 3 mm or more) may be required where there is a mechanical (as well as a chemical) risk i.e. where there is abrasion or puncture potential</li> </ul> <p>Use nitrile rubber, NBR gloves Recommended thickness =&gt; 0.11 mm Value for permeation: Level =&gt; 480 min</p>
<b>Body protection</b>	See Other protection below

<b>Other protection</b>	<p>No special equipment is needed when handling small quantities.</p> <p><b>Otherwise:</b></p> <ul style="list-style-type: none"> <li>- Overalls</li> <li>- Barrier cream</li> <li>- Eyewash unit</li> </ul>
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### 8.2.3. Environmental exposure controls

See section 12

## SECTION 9. Physical and chemical properties

### 9.1. Information on basic physical and chemical properties

<b>Appearance</b>	Colourless		
<b>Physical state</b>	Liquid	<b>Relative density (Water = 1)</b>	Not Available
<b>Odour</b>	Not Available	<b>Partition coefficient n-octanol / water</b>	Not Available
<b>Odour threshold</b>	Not Available	<b>Auto-ignition temperature (°C)</b>	Not Available
<b>pH (as supplied)</b>	Not Available	<b>Decomposition temperature (°C)</b>	Not Available
<b>Melting point / freezing point (°C)</b>	Not Available	<b>Viscosity (cSt)</b>	Not Available
<b>Initial boiling point and boiling range (°C)</b>	Not Available	<b>Molecular weight (g/mol)</b>	Not Available
<b>Flash point (°C)</b>	Not Available	<b>Taste</b>	Not Available
<b>Evaporation rate</b>	Not Available	<b>Explosive properties</b>	Not Available
<b>Flammability</b>	Not Available	<b>Oxidizing properties</b>	Not Available
<b>Upper Explosive Limit (%)</b>	Not Available	<b>Surface Tension (dyn/cm or mN/m)</b>	Not Available
<b>Lower Explosive Limit (%)</b>	Not Available	<b>Volatile Component (%vol)</b>	Not Available
<b>Vapour pressure (kPa)</b>	Not Available	<b>Gas group</b>	Not Available
<b>Solubility in water</b>	Not Applicable	<b>pH as a solution (1%)</b>	Not Available
<b>Vapour density (Air = 1)</b>	Not Available	<b>VOC g/L</b>	Not Available
<b>Nanoform Solubility</b>	Not Available	<b>Nanoform Particle Characteristics</b>	Not Available
<b>Particle Size</b>	Not Available		

### 9.2. Other information

Not Available

## SECTION 10. Stability and reactivity

<b>10.1. Reactivity</b>	See section 7.2
<b>10.2. Chemical stability</b>	Product is considered stable under recommended storage conditions
<b>10.3. Possibility of hazardous reactions</b>	See section 7.2
<b>10.4. Conditions to avoid</b>	See section 7.2
<b>10.5. Incompatible materials</b>	See section 7.2
<b>10.6. Hazardous decomposition products</b>	See section 5.3

**SECTION 11. Toxicological information****11.1. Information on toxicological effects**

<b>Inhaled</b>	The material is not thought to produce either adverse health effects or irritation of the respiratory tract following inhalation (as classified by EC Directives using animal models). Nevertheless, good hygiene practice requires that exposure be kept to a minimum and that suitable control measures be used in an occupational setting.
<b>Ingestion</b>	The material has NOT been classified by EC Directives or other classification systems as 'harmful by ingestion'. This is because of the lack of corroborating animal or human evidence.
<b>Skin Contact</b>	The material is not thought to produce either adverse health effects or irritation of the respiratory tract following inhalation (as classified by EC Directives using animal models). Nevertheless, good hygiene practice requires that exposure be kept to a minimum and that suitable control Measures be used in an occupational setting.
<b>Eye</b>	Although the liquid is not thought to be an irritant (as classified by EC Directives), direct contact with the eye may produce transient discomfort characterized by tearing or conjunctival redness (as with windburn).
<b>Chronic</b>	Long-term exposure to the product is not thought to produce chronic effects adverse to the health (as classified by EC Directives using animal models); nevertheless exposure by all routes should be minimised as a matter of course.

TN Lysis	TOXICITY		IRRITATION	
	Not Available		Not Available	
Guanidine (hydrochloride)	TOXICITY		IRRITATION	
	Oral (Rat) LD50:	773,6 mg/kg	Not Available	
	Inhalation (Rat) LC50	3,181 mg/L	Not Available	

**Legend:**  
1. Value obtained from Europe ECHA Registered Substances - Acute toxicity  
2. Value obtained from RTECS - Register of Toxic Effect of chemical Substances

Guanidine (hydrochloride)	Not Available
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<b>Acute Toxicity</b>	✓	<b>Carcinogenicity</b>	✗
<b>Skin Irritation/Corrosion</b>	✓	<b>Reproductivity</b>	✗
<b>Serious Eye Damage/Irritation</b>	✓	<b>STOT - Single Exposure</b>	✓
<b>Respiratory or Skin sensitisation</b>	✗	<b>STOT - Repeated Exposure</b>	✓
<b>Mutagenicity</b>	✗	<b>Aspiration Hazard</b>	✗
		<b>Legend:</b>	✗ Data either not available or does not fill the criteria for classification
			✓ Data available to make classification

**11.2. Information on other hazards****11.2.1 Endocrine Disruption Properties**

Not Available

**11.2.2 Other information**

See section 11.1

**SECTION 12. Ecological information****12.1 Toxicity**

	Endpoint	Test duration (hr)	Species	Value	Source
TN Lysis	Not Available	Not Available	Not Available	Not Available	Not Available
	Endpoint	Test duration (hr)	Species	Value	Source
Guanidine (hydrochloride)	NOEC	72	Algae or other aquatic plants	6,3 mg/	7
	EC50	72	Algae or other aquatic plants	33,5 mg/L	7

**Legend:**

Extracted from:  
 1. IUCLID Toxicity Data  
 2. Europe ECHA Registered Substances - Ecotoxicological Information - Aquatic Toxicity  
 3. US EPA, Ecotox database - Aquatic Toxicity Data  
 4. ECETOC Aquatic Hazard Assessment Data  
 5. NITE (Japan) - Bioconcentration Data  
 6. METI (Japan) - Bioconcentration Data  
 7. Vendor Data

**12.2. Persistence and degradability**

Ingredient	Persistence: Water/Soil	Persistence: Air
Guanidine (hydrochloride)	Not Available	Not Available

**12.3. Bioaccumulative potential**

Ingredient	Bioaccumulation
Guanidine (hydrochloride)	Not Available

**12.4. Mobility in soil**

Ingredient	Mobility
Guanidine (hydrochloride)	Not Available

**12.5. Results of PBT and vPvB assessment**

	P	B	T
Relevant available data	Not Available	Not Available	Not Available
PBT	✘	✘	✘
vPvB	✘	✘	✘
PBT Criteria fulfilled?	No		
vPvB	No		

**12.6. Endocrine Disruption Properties**

Not Available

**12.7. Other adverse effects**

Not Available

**SECTION 13. Disposal considerations**

**13.1. Waste treatment methods**

<b>Product / Packaging disposal</b>	<p>Legislation addressing waste disposal requirements may differ by country, state and/ or territory. Each user must refer to laws operating in their area. In some areas, certain wastes must be tracked.</p> <p>A Hierarchy of Controls seems to be common - the user should investigate:</p> <ul style="list-style-type: none"> <li>- Reduction</li> <li>- Reuse</li> <li>- Recycling</li> <li>- Disposal (if all else fails)</li> </ul> <p>This material may be recycled if unused, or if it has not been contaminated so as to make it unsuitable for its intended use. If it has been contaminated, it may be possible to reclaim the product by filtration, distillation or some other means. Shelf life considerations should also be applied in making decisions of this type.</p> <p>Note that properties of a material may change in use, and recycling or reuse may not always be appropriate.</p> <ul style="list-style-type: none"> <li>- <b>DO NOT</b> allow wash water from cleaning or process equipment to enter drains.</li> <li>- It may be necessary to collect all wash water for treatment before disposal.</li> <li>- In all cases disposal to sewer may be subject to local laws and regulations and these should be considered first.</li> <li>- Where in doubt contact the responsible authority.</li> <li>- Recycle wherever possible.</li> <li>- Consult manufacturer for recycling options or consult local or regional waste management authority for disposal if no suitable treatment or disposal facility can be identified.</li> <li>- Dispose of by: burial in a land-fill specifically licensed to accept chemical and / or pharmaceutical wastes or incineration in a licensed apparatus (after admixture with suitable combustible material).</li> <li>- Decontaminate empty containers. Observe all label requirements safeguards until containers are cleaned and destroyed</li> </ul>
	<p><b>Waste treatment options</b> Not Available</p> <p><b>Sewage disposal options</b> Not Available</p>

**SECTION 14. Transport information**

**Labels Required**

<b>Marine Pollutant</b>	NO
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**Land transport (ADR): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS**

14.1. <b>UN number</b>	Not Applicable
14.2. <b>UN proper shipping name</b>	Not Applicable
14.3. <b>Transport hazard class(es)</b>	Class   Not Applicable
	Sub risk   Not Applicable
14.4. <b>Packing group</b>	Not Applicable
14.5. <b>Environmental hazard</b>	Not Applicable
14.6. <b>Special precautions for user</b>	Hazard identification (Kemler)   Not Applicable
	Classification code   Not Applicable
	Hazard Label   Not Applicable
	Special provisions   Not Applicable
	Limited quantity   Not Applicable
	Tunnel Restriction Code   Not Applicable

**Air transport (ICAO-IATA / DGR): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS**

14.1. <b>UN number</b>	Not Applicable
14.2. <b>UN proper shipping name</b>	Not Applicable
14.3. <b>Transport hazard class(es)</b>	ICAO/IATA Class   Not Applicable
	ICAO / IATA Sub risk   Not Applicable
	ERG Code   Not Applicable
14.4. <b>Packing group</b>	Not Applicable
14.5. <b>Environmental hazard</b>	Not Applicable
14.6. <b>Special precautions for user</b>	Special provisions   Not Applicable
	Cargo Only Packing Instructions   Not Applicable
	Cargo Only Maximum Qty / Pack   Not Applicable
	Passenger and Cargo Packing Instructions   Not Applicable
	Passenger and Cargo Maximum Qty / Pack   Not Applicable
	Passenger and Cargo Limited Quantity Packing Instructions   Not Applicable
	Passenger and Cargo Limited Maximum Qty / Pack   Not Applicable

**Sea transport (IMDG-Code / GGVSee): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS**

14.1. UN number	Not Applicable	
14.2. UN proper shipping name	Not Applicable	
14.3. Transport hazard class(es)	IMDG Class	Not Applicable
	IMDG Sub risk	Not Applicable
14.4. Packing group	Not Applicable	
14.5. Environmental hazard	Not Applicable	
14.6. Special precautions for user	EMS Number	Not Applicable
	Special provisions	Not Applicable
	Limited Quantities	Not Applicable

**Inland waterways transport (ADN): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS**

14.1. UN number	Not Applicable	
14.2. UN proper shipping name	Not Applicable	
14.3. Transport hazard class(es)	Not Applicable	Not Applicable
14.4. Packing group	Not Applicable	
14.5. Environmental hazard	Not Applicable	
14.6. Special precautions for user	Classification code	Not Applicable
	Special provisions	Not Applicable
	Limited quantity	Not Applicable
	Equipment required	Not Applicable
	Fire cones number	Not Applicable

**14.7. Transport in bulk according to Annex II of MARPOL and the IBC code**

Not Applicable

**SECTION 15. Regulatory information****15.1. Safety, health and environmental regulations / legislation specific for the substance or mixture**

This safety data sheet is in compliance with the following EU legislation and its adaptations - as far as applicable - : Directives 98/24/EC, - 92/85/EEC, - 94/33/EC, - 2008/98/EC, - 2010/75/EU; Commission Regulation (EU) 2020/878; Regulation (EC) No 1272/2008 as updated through ATPs.

**Information according to 2012/18/EU (Seveso III):**

Seveso Category	Not Available
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**15.2. Chemical safety assessment**

No Chemical Safety Assessment has been carried out for this substance/mixture by the supplier.

**ECHA SUMMARY**

Not Available

**National Inventory Status**

National Inventory	Status
Australia - AIIC / Australia Non-Industrial Use	Yes
Canada - DSL	Yes
Canada - NDSL	Yes
China - IECSC	Yes
Europe - EINEC / ELINCS / NLP	Yes
Japan - ENCS	Yes
Korea - KECL	Yes
New Zealand - NZIoC	Yes
Philippines - PICCS	Yes
USA - TSCA	Yes
Taiwan - TCSI	Yes
Mexico - INSQ	Yes
Vietnam - NCI	Yes
Russia - FBEPH	Yes
<b>Legend:</b>	Yes = All CAS declared ingredients are on the inventory No = One or more of the CAS listed ingredients are not on the inventory. These ingredients may be exempt or will require registration.

**SECTION 16. Other information****Full text Risk and Hazard codes**

<b>H302</b>	Harmful if swallowed
<b>H315</b>	Causes skin irritation
<b>H319</b>	Causes serious eye irritation
<b>H332</b>	Harmful if inhaled
<b>H335</b>	May cause respiratory irritation
<b>H373</b>	May cause damage to organs through prolonged or repeated exposure.

**Version Summary**

Version	Date of Update	Sections Updated
1	26/AUG/2025	Initial version

**Other information**

The SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings. Risks may be determined by reference to Exposures Scenarios. Scale of use, frequency of use and current or available engineering controls must be considered. For detailed advice on Personal Protective Equipment, refer to the following EU CEN Standards:

EN 166	Personal Eye protection
EN 340	Protective Clothing
EN 374	Protective Gloves against chemicals and micro-organisms
EN 13832	Footwear protecting against chemicals
EN 133	Respiratory protective devices

**Definitions and abbreviations**

Abbreviation	Definition
ACGIH	American Conference of Governmental Industrial Hygienists
AIIC	Australian Inventory of Industrial Chemicals
BCF	BioConcentration Factors
BEI	Biological Exposure Index
DSL	Domestic Substances List
EINECS	European Inventory of Existing Commercial chemical Substances
ENCS	Existing and New Chemicals Substances Inventory
ELINCS	European List of Notified Chemical Substances
ES	Exposure Standard
FBEPH	Russian Register of Potentially Hazardous Chemical and Biological Substances
IARC	International Agency for Research on cancer
IDLH	Immediately Dangerous to Life or Health Concentrations
IECSC	Inventory of Existing Chemical Substances in China
INSQ	Inventario Nacional de Sustancias Quimicas
KECI	Korea Existing Chemicals Inventory
LOAEL	Lowest Observed Adverse Effect Level
LOD	Limit Of Detection
NCI	National Chemical Inventory
NDSL	Non-Domestic Substances List
NLP	No-Longer Polymers
NOAEL	No Observed Adverse Effect Level
NZIoC	New Zealand Inventory of Chemicals
OSF	Odour Safety Factor
OTV	Odour Threshold Value
PC	Permissible Concentration
PICCS	Philippine Inventory of Chemicals and Chemical Substances
STEL	Short Term Exposure Limit
TCSI	Taiwan Chemical Substance Inventory
TEEL	Temporary Emergency Exposure Limit
TLV	Threshold Limit Value
TSCA	Toxic Substances Control Act
TWA	Time Weighted Average