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	WBC 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	www.cleanna.com
Email	info@cleanna.com

1.4. Emergency telephone number

Emergency telephone numbers	112 (European emergency number)

SECTION 2. Hazards identification

2.1. Classification of the substance or mixture

Classification according to regulation (EC) No 1272/2008 [CLP] and amendments	H302 – Acute Toxicity (Oral) – Category 4 H315 – Skin Corrosion/Irritation – category 2 H319 – Serious Eye damage / Eye Irritation – Category 2

2.2. Label elements

Hazard pictogram(s)	
Signal word	**Warning**

Hazard statement(s)

H302	Harmful if swallowed
H315	Causes skin irritation
H319	Causes serious eye irritation

Supplementary statement(s)

	Not Applicable

Precautionary statement(s) Prevention

P264	Wash all exposed external body areas thoroughly after handling
P270	Do not eat, drink or smoke when using this product
P280	Wear protective gloves & clothing, eye & face protection

Precautionary statement(s) Response

P330	Rinse mouth
P301 + P312	IF SWALLOWED: call a POISON CENTER/doctor/physician/ first aider if you feel unwell
P302 + P352	IF ON SKIN: wash with plenty of water and soap
P332 + P313	If skin irritation occurs: get medical advice/attention
P337 + P313	If eye irritation persist get medical advice
P362 + P364	Take off contaminated clothing and wash it before reuse
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing.

Precautionary statement(s) Storage

	Not Applicable

Precautionary statement(s) Disposal

P501	Dispose of container/ contents to authorized hazardous or special waste collection point in accordance with any local regulation.

2.3. Other hazards

Cumulative effects may result following exposure *
Eye contact may produce serious damage *

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. 50-01-1 2. 200-002-3 3. 607-148-00-0 4. Not Available	25 - 50	**Guanidine hydrochloride**	Acute Toxicity (Oral) – Category 4 Skin Corrosion/Irritation – Category 2 Serious Eye damage/Eye irritation – Category 2 H302, H315, H319 [2]	Not Available	Not Available
1. Not Available 2. Not Available 3. Not Available 4. Not Available	< 2.9	**Non-ionic detergent**	Acute Toxicity (Oral) – Category 4 Skin Corrosion/Irritation – Category 2 Serious Eye Damage/Eye Irritation – Category 1 Hazardous to Aquatic Environment Long-Term Hazard – Category 2 H302, H315, H318, H411, EUH205	Not Available	Not Available
Legend:	*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

Eye Contact	If this product comes in contact with the eyes: - Immediately hold eyelids apart ad flush the eye continuously with running water - Ensure complete irrigation of the eye by keeping eyelids apart and away from eye moving the eyelids by occasionally lifting the upper and lower lids - Continue flushing until advised to stop by Poisons Information Centre or a doctor, or for at least 15 minutes - Transport to hospital or doctor without delay - Removal of contact lenses after an eye injury should only be undertaken by skilled personnel
Skin Contact	If skin contact occurs: - Immediately flush body and clothes with large amounts of water, using safety shower if available - Quickly remove all contaminated clothing, including footwear - Wash skin and hair with running water. Continue flushing with water until advised to stop by the Poisons Information Center - Transport to hospital or doctor
Inhalation	- If fumes or combustion products are inhaled remove from contaminated area. - Lay patient down. Keep warm and rested - Protheses such as false teeth which may block airway, should be removed where possible, prior to initiating first aid procedures - Apply artificial respiration if not breathing, preferably with a demand valve resuscitator, bag-valve mask device, or pocket mask as trained. Perform CPR if necessary - Transport to hospital or doctor without delay.
Ingestion	- For advice contact a Poisons Information Center or a doctor at once - Urgent hospital treatment is likely to be needed - If swallowed do NOT induce vomiting - If vomiting occurs, lean patient forward or place on left side (Head-down position, if possible) to maintain open airway and prevent aspiration - Observe patient carefully - Never give liquid to person showing signs of being sleepy or with reduced awareness, i.e. becoming unconscious - Give water to rinse out mouth, the provide liquid slowly and as much as casualty can comfortably drink - Transport to hospital or doctor without delay

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).

Dor poisons (where special treatment regime is absent):

BASIC TREATMENT

- Establish 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 for shock, where necessary
- Monitor and treat for pulmonary oedema, where necessary
- 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 for arrhythmias, where necessary
- 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. Fluids 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 Extinguishing media

- Foam
- Dry chemical powder
- BCF.(where regulations permit)
- Carbon oxide
- water spray of fog (Large fires only)

5.2 Special hazards arising from the substrate or mixture

Fire Incompatibility	Avoid contamination with oxidising agents i.e. nitrates, oxidising acids, chlorine bleaches, pool chlorine etc as ignition may result

5.3. Advice for firefighters

Fire Fighting	- Alert Fire Brigade and tell them location and nature of hazard - Wear full body protective clothing with breathing apparatus - Prevent, by any means available, spillage from entering drains or water courses - Use water delivered as a fine spray to control fire and cool adjacent area - Avoid spraying water onto liquid pools - **DO NOT** approach container 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
Fire/Explosion Hazard	- Combustible - Slight fire hazard when exposed to heat or flame - Heating may cause expansion or decomposition leading to violent rupture of containers - May emit toxic fumes or carbon oxide (CO) on combustion - May emit acrid smoke - Mists containing combustible materials may be explosive Combustion products include: Carbon dioxide (CO2) Hydrogen chloride Phosgene Nitrogen oxides (NOx) Other pyrolysis products typical of burning organic material May emit poisonous fumes May emit corrosive fumes

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	- Remove all ignition sources - Clean up all spills immediately. - Avoid breathing vapours and contact with skin and eyes. - Control personal contact with the substance, by using protective equipment. - Contain and absorb spill with sand, earth, inert material or vermiculite - Wipe up. - Place in a suitable, labelled container for waste disposal.
Major Spills	Moderate hazard - Clear area of personnel and move upwind. - Alert Fire Brigade and tell them location and nature of hazard - Wear breathing apparatus plus protective gloves - Prevent, by any means available, spillage from entering drains or water course - No smoking, naked lights or ignition sources - Increase ventilation - Stop leak if safe to do so - Contain spill with sand, earth of vermiculite - Collect recoverable product into labelled containers for recycling - Collect solid residues and seal in labelled drums for disposal - Wash area and prevent runoff into drains - If contamination of drains or waterways occurs, advise emergency services

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	- Avoid all personal contact including inhalation - Wear protective clothing when risk of exposure occurs - Use in a well-ventilated area - Prevent concentration in hollows and sumps - DO NOT enter confined spaces until atmosphere has been checked - Avoid smoking, naked lights or ignition sources - Avoid contact with incompatible materials - When handling **DO NOT** eat, drink or smoke - Keep containers securely sealed when not in use - Avoid physical damage to containers - Always wash hands with soap and water after handling - Work clothes should be laundered separately. - Use good occupational work practice - Observe manufacturer’s storage and handling recommendations contained within this SDS - Atmosphere should be regularly against established exposure standards to ensure working conditions are maintained - **DO NOT** allow clothing wet with material to stay in contact with skin
Fire and explosion protection	See section 5
Other information	- Store in original containers - Keep containers securely sealed - No smoking, naked lights or ignition sources - Store in a cool, dry, well-ventilated area - Store away from incompatible materials and foodstuff containers - Protect containers against physical damage and check regularly for leaks - Observe manufacturer’s storage and handling recommendations contained within this SDS

7.2. Conditions for safe storage, including any incompatibilities

Suitable container	- Glass container is suitable for laboratory quantities - Metal can or drum - Packaging as recommended by manufacturer - Check all containers are clearly labelled and free from leaks
Storage incompatibility	- Avoid reaction with oxidising agents
Hazard categories in accordance with Regulation (EC) No 1272/2008	Not available
Qualifying quantity (tonnes) of dangerous substances as referred to in Article 3(10) for the application of	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**
Guanidine hydrochloride	Dermal	1 mg/kg bw/ day	(Systemic, Chronic)	Not Available
	Inhalation	3.5 mg/m^3	(Systemic, Chronic)	
	Inhalation	10.5 mg/m^3	(Systemic, Acute)	
	Dermal	*0.5 mg/kg bw/day*	*(Systemic, Chronic) **	
	Inhalation	*0.87 mg/m^3*	*(Systemic, Chronic) **	
	Oral	*0.5 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**
Guanidine hydrochloride	1.4 mg/m^3	16 mg/m^3	94 mg/m^3

Ingredient	**Original IDLH**	**Revised IDLH**
Guanidine hydrochloride	Not Available	Not Available

Occupational Exposure Branding

Ingredient	**Occupational Exposure Band Rating**	**Occupational Exposure Band Limit**
Guanidine hydrochloride	E	<= 0.01 mg/m^3
Notes:	*Occupational exposure banding is a process of assigning chemicals into specific categories or bands on a chemical's potency and the adverse health outcomes associated with exposure. The output of tis 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

For potent pharmacological agents:

Solutions handling:

- Solutions can be handled outside a containment system or without local exhaust ventilation during procedures with no potential for aerosolization. If the procedures have a potential for aerosolization, an air-purifying respirator is to be worn by all personnel in the immediate area
- Solutions used for procedures where aerosolization may occur (e.g. vortexing, pumping) are to be handled within a containment system or local exhaust ventilation
- In situations where this is not feasible (may include animal dosing), an air-purifying respirator is to be worn by all personnel in the immediate area. If using a ventilated enclosure that has not bene validated, wear a half-mask respirator equipped with HEPA cartridges until the enclosure is validate for use
- Ensure gloves are protective against solvents in use.

Enclosed local exhaust ventilation is required at points of dust, fume or vapour generation.
HEPA terminated local exhaust ventilation should be considered at point of generation of dust, fumes or vapours.

Barrier protection or laminar flow cabinets should be considered for laboratory scale handling

A fume hood or vented balance enclosure is recommended for weighing/transferring quantities exceeding 500 mg.
When handling quantities up to 500 gram in either a standard laboratory with general dilution ventilation (e.g. 6012 air changes per hour) is preferred.
Quantities up to 1 kg may require a designated laboratory using fume hood, biological safety cabinet, or approved vented enclosures.
Quantities exceeding 1 kg should be handled in a designated laboratory or containment laboratory using appropriate barrier/containment technology.

Manufacturing and pilot plant operations require barrier / containment and direct coupling technologies.
Barrier/containment technology and direct coupling (totally enclosed processes that create a barrier between the equipment and the room) typically use double or split butterfly valves and hybrid unidirectional airflow / local exhaust ventilation solutions (e.g. powder containment booths).

Glove bags, isolator glove box systems are optional.

Fume-hoods and other open-face containment devices are acceptable when face velocities of at least 1 m/s (200 ft/min) are achieved.

Partitions, barriers and other partial containment technologies are required to prevent migration of the material to uncontrolled areas.
For non-routine emergencies maximum local and general local exhaust are necessary.

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 form 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 boots, 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.

The need for respiratory protection should be assessed where incidental or accidental exposures is anticipated. Dependent on levels of contamination, PAPR, full face air purifying devices with P2 or P3 filters or air supplied respirators should be evaluated.

The following protective devices are recommended where exposures exceed the recommended exposure control guidelines by factors of:

10	high efficiency particulate (HEPA) filters or cartridges
10-25	loose-fitting (Tyvek or helmet type) HEPA powered-air purifying respirator
25-50	full face-piece negative pressure respirator with HEPA filters
50-100	tight-fitting, full-face HEPA PAPR
100-1000	a hood-shroud HEPA PAPR or full face-piece supplied air respirator operated in pressure demand or other positive pressure mde.

8.2.2. Personal protection

Eye and face protection

When handling very small quantities of the material eye protection may not be required.

For laboratory, larger scale or bulk handling or where regular exposure in an occupational setting occurs:

- Chemical goggles.
- Face shield. Full face shield may be required for supplementary but never for primary protection of eyes.
- 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

Hand / feet protection

- When handling corrosive liquids, wear trousers or overalls outside of boots to avoid spills entering boots.

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. - Rubber gloves (nitrile or low-protein, powder-free latex, latex/nitrile). Employees allergic to latex gloves should us enitrile gloves in preference. - Double gloving should be considered - PVC gloves - Change gloves frequently and when contaminated, punctured or torn - Wash hand immediately after removing gloves - Protective shoe covers [AS/NZS 2210] - Head covering
Body protection	See Other protection below
Other protection	- For quantities up to 500 gram a laboratory coat may be suitable - For quantities up to 1 kg a disposable laboratory coat of coverall of low permeability is recommended. Coveralls should be buttoned at collar and cuffs. - For quantities over 1 kg and manufacturing operations, wear disposable coverall of low permeability and disposable shoe covers - For manufacturing operations, air supplied full body suits may be required for the provision of advanced respiratory protection - Eye wash unit - Ensure there is ready access to an emergency shower - For emergencies: vinyl suit

Respiratory protection

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

Selection of the Class and Type of respirator will depend upon the level of breathing zone contaminant and the chemical nature of the contaminant. Protection Factors (defined as the ratio of contaminant outside and inside the mask) may also be important.

Required Minimum Protection Factor	Maximum gas/vapour concentration present in air p.p.m. (by volume)	Half-Face Respirator	Full- Face Respirator
up to 10	1000	A-AUS / Class 1 P2	-
up to 50	1000	-	A-AUS / Class 1 P2
up to 50	5000	Airline *	-
up to 100	5000	-	A-2 p2
up to 100	10000	-	A-3 P2
100+			Airline **

* Continuous flow ** continuous-flow or positive pressure demand
A(All classes) = Organic vapours, B AUS or B1 = Acid gasses, B2 = Acid gas or hydrogen cyanide(HCN), B3 = Acid gas or hydrogen cyanide(HCN), E = Sulfur dioxide(SO2), G = Agricultural chemicals, K = Ammonia(NH3), Hg = Mercury, NO = Oxides of nitrogen, MB = Methyl bromide, AX = Low boiling point organic compounds(below 65 degC)

- Cartridge respirators should never be used for emergency ingress or in areas of unknown vapour concentrations or oxygen content.
- The wearer must be warned to leave the contaminated area immediately on detecting any odours through the respirator. The odour may indicate that the mask is not functioning properly, that the vapour concentration is too high, or that the mask is not properly fitted. Because f these limitations, only restricted use of cartridge respirators is considered appropriate.
- Cartridge performance is affected by humidity. Cartridges should be changed after2 hr of continuous use unless it is determined that the humidity is less than 75 % in which case cartridges can be used for 4 hr. used cartridges should be discarded daily, regardless of the length of time used.

8.2.3. Environmental exposure controls

See section 12

SECTION 9. Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance	Not Available

Physical state	Liquid	**Relative density (Water = 1)**	Not Available
Odour	Not Available	**Partition coefficient n-octanol / water**	Not Available
Odour threshold	Not Available	**Auto-ignition temperature (°C)**	Not Available
pH (as supplied)	Not Available	**Decomposition temperature (°C)**	Not Available
Melting point / freezing point (°C)	Not Available	**Viscosity (cSt)**	Not Available
Initial boiling point and boiling range (°C)	Not Available	**Molecular weight (g/mol)**	Not Available
Flash point (°C)	Not Available	**Taste**	Not Available
Evaporation rate	Not Available	**Explosive properties**	Not Available
Flammability	Not Available	**Oxidising properties**	Not Available
Upper Explosive Limit (%)	Not Available	**Surface Tension (dyn/cm or mN/m)**	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	- Unstable in presence of incompatible materials - Product is considered stable - 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 can cause respiratory irritation in some persons. The body’s response to such irritation can cause further lung damage.
Ingestion	Accidental ingestion of the material may be harmful. Animal experiments indicate that ingestion of less than 150 gr may be fatal or may produce serious damage to the health of the individual. The material can produce chemical burns within the oral cavity and gastrointestinal tract following ingestion
Skin Contact	Skin contact with the material may produce toxic effects; systemic effects may result following absorption. The material can produce chemical burns following direct contact with the skin. Open cuts, abraded or irritated skin should not be exposed to this material. Entry into the bloodstream 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 ay external damage is suitably protected. The material may cause severe inflammation of the skin either following direct contact or after a delay of some time. Repeated exposure can cause contact dermatitis which is characterised by redness, swelling and blistering.
Eye	The material can produce chemical burns to the ye following direct contact. Vapours or mists may be extremely irritating. This material causes severe eye damage if applied to the eyes
Chronic	Repeated or prolonged exposure to corrosives may result in the erosion of teeth, inflammatory and ulcerative changes in the mouth and necrosis (rarely) of the jaw. Bronchial irritation, with cough and frequent attacks of bronchial pneumonia may ensue. Long-term exposure to respiratory irritants may result in airways disease involving difficulty breathing and related whole-body problems. Substance accumulation in the human body may occur and may cause some concern following repeated or long-term occupational exposure.

WBC Lysis	**TOXICITY**		**IRRITATION**	
	Not Available		Not Available	
Guanidine hydrochloride	**TOXICITY**		**IRRITATION**	
	Dermal (rabbit) LD50:	> 2000 mg/kg [1]	Eye (rabbit):	81.4 mg - Moderate
	Inhalation (Rat) LC50:	> 0.853 mg/24h [1]	Skin (rabbit):	500 mg/24h - SEVERE
	Oral 9Rat) LD50:	474.6 mg/kg [1]		
Legend:	*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*			

WBC Lysis	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 occurs 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 a 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.
Guanidine hydrochloride	The material may produce moderate eye irritation leading to inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis. The material may cause sever skin irritation after prolonged or repeated exposure and may may produce on contact skin redness, swelling. Production of vesicles, scaling and thickening of the skin. Repeated exposures may produce sever ulceration.

Acute Toxicity	✓	**Carcinogenicity**	✗
Skin Irritation/Corrosion	✓	**Reproductivity**	✗
Serious Eye Damage/Irritation	✓	**STOT - Single Exposure**	✗
Respiratory or Skin sensitisation	✗	**STOT - Repeated Exposure**	✗
Mutagenicity	✗	**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

	Endpoint	**Test duration (hr)**	**Species**	**Value**	**Source**
WBC Lysis	Not available	Not available	Not available	*Not available*	*Not available*
Guanidine hydrochloride	NOEC(ECx)	504	Crustacea	2.9 mg/L	*2*
	EC50	72	Algae or other aquatic plants	11.8 mg/L	2
	EC50	48	Crustacea	70.2 mg/L	*2*
	LC50	96	Fish	690 mg/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*				

Harmful to aquatic organisms. May cause long-term effects in the aquatic environment.
Do NOT allow product to come into contact with surface waters or to intertidal areas below the mean high water mark.
Do NOT contaminate water when cleaning equipment or disposing of equipment wash-waters.
Do NOT discharge into sewer of waterways.
Waste resulting from use of the product must be disposed of onsite or at approved waste sites.

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

Product / Packaging disposal	- Containers may still present a chemical hazard/danger when empty - Return to supplier for reuse/recycling, if possible **Otherwise:** - If container cannot be cleaned sufficiently well to ensure that residuals do not remain of if the container cannot be used to store the same product, then puncture containers to prevent reuse and bury at an authorized landfill - Where possible retain label warnings and SDS and observe all notices pertaining to the product. 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. A hierarchy of Controls seems to be common - the user should investigate: - Reduction - Reuse - Recycling - Disposal (if all else fails) 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. - **DO NOT** allow wash water from cleaning or process equipment to enter drains. - It may be necessary to collect all wash water for treatment before disposal. - In all cases disposal to sewer may be subject to local laws and regulations and these should be considered first. - Where in doubt contact the responsible authority. - Recycle wherever possible or consult manufacturer for recycling options. - Consult State Land Waste Authority for disposal. - Bury or incinerate residue at an approved site - Recycle containers if possible or dispose in an authorised landfill
Waste treatment options	Not Available
Sewage disposal options	Not Available

SECTION 14 Transport information

Labels Required

Marine Pollutant	NO

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
Guanidine hydrochloride	Not Available
Non-ionic detergent	Not Available

14.9. Transport in bulk in accordance with the ICG Code

Product name	Ship Type
Guanidine hydrochloride	Not Available
Non-ionic detergent	Not Available

SECTION 15. Regulatory information

15.1. Safety, health and environmental regulations / legislation specific for the substance or mixture

Guanidine hydrochloride is found on the following regulatory lists

Europe EC Inventory	European Union (EU) regulation (EC) No. 1272/2008 on Classification, labelling and Packaging of Substances and Mixtures – Annex VI
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

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
Guanidine hydrochloride	50-01-1	607-148-00-0	Not Available

Harmonisation (C&L Inventory)	Hazard Class and Category Code(s)	Pictograms Signal Word Code(s)	Hazard Statement Code(s)
1	Acute Tox. 4; Skin Irrit. 2; Eye Irrit. 2	GHS07 ; Wng	H302; H315; H319
2	Acute Tox. 4; Skin Irrit. 2; Eye Irrit. 2A ; Acute Tox. 4 ; Acute Tox. 4; STOT SE 3	Wng; GHS06	H302; H315; H319; H332; H335

Harmonization Code: 1 = most prevalent classification 2 = most severe classification

National Inventory Status

National Inventory	Status
Australia - AIIC / Australia Non-Industrial Use	Yes
Canada - DSL	Yes
Canada - NDSL	No (guanidine hydrochloride, Non-ionic detergent)
China - IECSC	Yes
Europe - EINEC / ELINCS / NLP	No (Non-Ionice detergent)
Japan - ENCS	No (guanidine hydrochloride)
Korea - KECI	Yes
New Zealand - NZIoC	Yes
Philippines - PICCS	Yes
USA - TSCA	Yes
Taiwan - TCSI	Yes
Mexico - INSQ	No (Non-ionic detergent)
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

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

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