GRAMOXONE SL 3.0

Version	Revision Date:	SDS Number:	This version replaces all previous versions.
4.0	05/18/2021	S00059061332	

SECTION 1. IDENTIFICATION

Product name : GRAMOXONE SL 3.0

Design code. : A12837AM

Product Registration number : 100-1652

Manufacturer or supplier's details

Company name of supplier : Syngenta Crop Protection, LLC
Address : Post Office Box 18300
Greensboro NC 27419
United States of America (USA)

Telephone : 1 800 334 9481

Telefax : 1 336 632 2192

Emergency telephone : 1 800 888 8372

Recommended use of the chemical and restrictions on use

Recommended use : Herbicide

Restrictions on use : Restricted Use Pesticide

SECTION 2. HAZARDS IDENTIFICATION

GHS classification in accordance with the OSHA Hazard Communication Standard (29 CFR 1910.1200)

Corrosive to Metals : Category 1

Acute toxicity (Oral) : Category 3

Acute toxicity (Inhalation) : Category 1

Acute toxicity (Dermal) : Category 4

Skin irritation : Category 2

Serious eye damage : Category 1

Specific target organ toxicity - single exposure : Category 3 (Respiratory system)

Specific target organ toxicity - repeated exposure : Category 1 (Lungs, Kidney)

GHS label elements

Hazard pictograms :

Signal Word : Danger

Hazard Statements :
H290 May be corrosive to metals.
H301 Toxic if swallowed.
H312 Harmful in contact with skin.
H315 Causes skin irritation.
H318 Causes serious eye damage.
H330 Fatal if inhaled.
H335 May cause respiratory irritation.
H372 Causes damage to organs (Lungs, Kidney) through prolonged or repeated exposure.

Precautionary Statements :

Prevention:

P234 Keep only in original container.
P260 Do not breathe dust/ fume/ gas/ mist/ vapors/ spray.
P264 Wash skin thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P271 Use only outdoors or in a well-ventilated area.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.
P284 Wear respiratory protection.

Response:

P301 + P310 + P330 IF SWALLOWED: Immediately call a POISON CENTER/ doctor. Rinse mouth.
P302 + P352 + P312 IF ON SKIN: Wash with plenty of water.Call a POISON CENTER/ doctor if you feel unwell.
P304 + P340 + P310 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/ doctor.
P305 + P351 + P338 + P310 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/ doctor.
P314 Get medical advice/ attention if you feel unwell.
P332 + P313 If skin irritation occurs: Get medical advice/ attention.
P362 Take off contaminated clothing and wash before reuse.
P390 Absorb spillage to prevent material damage.

Storage:

P403 + P233 Store in a well-ventilated place. Keep container tightly closed.
P405 Store locked up.
P406 Store in corrosive resistant container with a resistant inner liner.

Disposal:

P501 Dispose of contents/ container to an approved waste disposal plant.

Other hazards

None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Components

Chemical name	CAS-No.	Concentration (% w/w)
paraquat dichloride	1910-42-5	43.8275
2-amino-4,5-dihydro-6-methyl-4-propyl-s-triazole-[1,5-a]pyrimidin-5-one	27277-00-5	>= 0.1 - < 1

Actual concentration is withheld as a trade secret

SECTION 4. FIRST AID MEASURES

General advice : Have the product container, label or Safety Data Sheet with you when calling the emergency number, a poison control center or physician, or going for treatment.

If inhaled : Take the victim into fresh air.
If breathing is irregular or stopped, administer artificial respiration.
Keep patient warm and at rest.
Call a physician or poison control center immediately.

In case of skin contact : Take off all contaminated clothing immediately.
Wash off immediately with plenty of water.
If skin irritation persists, call a physician.
Wash contaminated clothing before re-use.

In case of eye contact : Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes.
Remove contact lenses.
Immediate medical attention is required.

If swallowed : SPEED IS ESSENTIAL.
Immediate medical attention is required.
If available, give an adsorbent such as activated charcoal, bentonite or Fullers Earth.

Most important symptoms and effects, both acute and delayed : Inflammation of the mouth, throat and esophagus.
Gastrointestinal discomfort
Diarrhea

Notes to physician : Refer to the booklet 'Paraquat Poisoning. A Practical Guide to Diagnosis, First Aid and Hospital Treatment' (http://www4.syngenta.com/what-we-do/crops-and-products/paraquat-safety).
Administer either activated charcoal (100g for adults or 2g/kg body weight in children) or Fuller's Earth (15% solution; 1 liter for adults or 15ml/kg body weight in children).
NOTE: The use of gastric lavage without administration of an adsorbent has not shown any clinical benefit.
Do not use supplemental oxygen.
Eye splashes from concentrated material should be treated by an eye specialist after initial treatment.
With the possibility of late onset corneal ulceration it is advised that patients with paraquat eye injuries are reviewed by an eye specialist the day after first presentation.

SECTION 5. FIRE-FIGHTING MEASURES

Suitable extinguishing media	:	Extinguishing media - small fires Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide. Extinguishing media - large fires Alcohol-resistant foam or Water spray
Unsuitable extinguishing media	:	Do not use a solid water stream as it may scatter and spread fire.
Specific hazards during fire fighting	:	As the product contains combustible organic ingredients, fire will produce dense black smoke containing hazardous products of combustion (see section 10). Exposure to decomposition products may be a hazard to health.
Further information	:	Do not allow run-off from fire fighting to enter drains or water courses. Cool closed containers exposed to fire with water spray.
Special protective equipment for fire-fighters	:	Wear full protective clothing and self-contained breathing apparatus.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures	:	Refer to protective measures listed in sections 7 and 8.
Environmental precautions	:	Prevent further leakage or spillage if safe to do so. Do not flush into surface water or sanitary sewer system. If the product contaminates rivers and lakes or drains inform respective authorities.
Methods and materials for containment and cleaning up	:	Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13). Clean contaminated surface thoroughly. Clean with detergents. Avoid solvents. Retain and dispose of contaminated wash water.

SECTION 7. HANDLING AND STORAGE

Advice on safe handling	:	Avoid contact with skin and eyes. When using do not eat, drink or smoke. For personal protection see section 8. Spray solutions should not be mixed, stored or applied in containers other than plastic, plastic-lined steel, stainless steel or fiberglass.
Conditions for safe storage	:	No special storage conditions required. Keep containers tightly closed in a dry, cool and well-ventilated place. Keep out of the reach of children. Keep away from food, drink and animal feedingstuffs.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Ingredients with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
paraquat dichloride	1910-42-5	TWA (inhalable fraction)	0.01 mg/m3	Syngenta
		TWA (Respirable)	0.1 mg/m3	NIOSH REL
		TWA (Respirable dust)	0.5 mg/m3	OSHA Z-1
		TWA (respirable dust fraction)	0.1 mg/m3	OSHA P0
		TWA (Inhalable particulate matter)	0.05 mg/m3 (the cation)	ACGIH
2-amino-4,5-dihydro-6-methyl-4-propyl-s-triazole-[1,5-a]pyrimidin-5-one	27277-00-5	TWA	0.02 mg/m3	Syngenta

Engineering measures : THE FOLLOWING RECOMMENDATIONS FOR EXPOSURE CONTROLS/PERSONAL PROTECTION ARE INTENDED FOR THE MANUFACTURE, FORMULATION AND PACKAGING OF THE PRODUCT. FOR COMMERCIAL APPLICATIONS AND/OR ON-FARM APPLICATIONS CONSULT THE PRODUCT LABEL.

Containment and/or segregation is the most reliable technical protection measure if exposure cannot be eliminated.
The extent of these protection measures depends on the actual risks in use.
Maintain air concentrations below occupational exposure standards.
Seek additional occupational hygiene advice.

Personal protective equipment

Respiratory protection : Where concentrations are above recommended limits or are unknown, appropriate respiratory protection should be worn. Follow OSHA respirator regulations (29 CFR 1910.134) and use NIOSH/MSHA approved respirators. Protection provided by air purifying respirators against exposure to any hazardous chemical is limited. Use a positive pressure air supplied respirator if there is any potential for uncontrolled release, exposure levels are unknown, or any other circumstance where air purifying respirators may not provide adequate protection.

Hand protection

Remarks : Wear protective gloves. The choice of an appropriate glove does not only depend on its material but also on other quality features and is different from one producer to the other. Please observe the instructions regarding permeability and

		breakthrough time which are provided by the supplier of the gloves. Also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion, and the contact time. The break through time depends amongst other things from the material, the thickness and the type of glove and therefore has to be measured for each case. Gloves should be discarded and replaced if there is any indication of degradation or chemical breakthrough.
Eye protection	:	Tightly fitting safety goggles Always wear eye protection when the potential for inadvertent eye contact with the product cannot be excluded.
Skin and body protection	:	Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to the specific work-place. Remove and wash contaminated clothing before re-use. Wear as appropriate: Impervious clothing
Protective measures	:	The use of technical measures should always have priority over the use of personal protective equipment. When selecting personal protective equipment, seek appropriate professional advice.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	:	liquid
Color	:	dark green
Odor	:	No data available
Odor Threshold	:	No data available
pH	:	3 - 7 Concentration: 1 % w/v
Melting point/range	:	No data available
Boiling point/boiling range	:	No data available
Flash point	:	Method: Pensky-Martens closed cup does not flash
Evaporation rate	:	No data available
Flammability (solid, gas)	:	No data available
Upper explosion limit / Upper flammability limit	:	No data available
Lower explosion limit / Lower flammability limit	:	No data available
Vapor pressure	:	No data available
Relative vapor density	:	No data available

Density	:	1.11 - 1.15 g/cm3 (68 °F / 20 °C)
Solubility(ies)		
Water solubility	:	No data available
Solubility in other solvents	:	No data available
Partition coefficient: n-octanol/water	:	No data available
Autoignition temperature	:	> 1202 °F / > 650 °C
Decomposition temperature	:	No data available
Viscosity		
Viscosity, dynamic	:	No data available
Viscosity, kinematic	:	No data available
Explosive properties	:	Not explosive
Oxidizing properties	:	The substance or mixture is not classified as oxidizing.
Particle size	:	No data available

SECTION 10. STABILITY AND REACTIVITY

Reactivity	:	See section "Possibility of hazardous reactions".
Chemical stability	:	Stable under normal conditions.
Possibility of hazardous reactions	:	Corrosive in contact with metals
Conditions to avoid	:	No decomposition if used as directed.
Incompatible materials	:	Aluminum Mild steel Iron
Hazardous decomposition products	:	No hazardous decomposition products are known.

SECTION 11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Ingestion
Inhalation
Skin contact
Eye contact

Acute toxicity

Product:

Acute oral toxicity	:	Acute toxicity estimate: 172.81 mg/kg Method: Calculation method
Acute inhalation toxicity	:	Acute toxicity estimate: 0.0114 mg/l Exposure time: 4 h Test atmosphere: dust/mist

Method: Calculation method

Assessment: The substance/mixture is not toxic on inhalation as defined by dangerous goods regulations.

Acute dermal toxicity : Acute toxicity estimate: 1,990 mg/kg
Method: Calculation method

Components:

paraquat dichloride:

Acute oral toxicity : LD50 (Rat, female): Calculated 76 mg/kg

Acute inhalation toxicity : LC50 (Rat): Calculated 0.0002 - 0.0007 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Assessment: The component/mixture is extremely toxic after short term inhalation.

Acute dermal toxicity : LD50 (Rat): Calculated 872 mg/kg

2-amino-4,5-dihydro-6-methyl-4-propyl-s-triazole-[1,5-a]pyrimidin-5-one:

Acute oral toxicity : LD50 (Rat): 100 - 150 mg/kg
Remarks: Powerful emetic in humans at 0.03 - 0.11mg/kg.
Symptoms include nausea, dizziness, flushing and vomiting.
The half-life in humans is 1.5 - 3.5 hours.

Acute dermal toxicity : LD50 (Rat, male and female): > 2,000 mg/kg
Assessment: The substance or mixture has no acute dermal toxicity

Skin corrosion/irritation

Components:

paraquat dichloride:

Result : Irritating to skin.

2-amino-4,5-dihydro-6-methyl-4-propyl-s-triazole-[1,5-a]pyrimidin-5-one:

Species : Rabbit
Result : No skin irritation

Serious eye damage/eye irritation

Components:

paraquat dichloride:

Result : Risk of serious damage to eyes.

2-amino-4,5-dihydro-6-methyl-4-propyl-s-triazole-[1,5-a]pyrimidin-5-one:

Species : Rabbit
Result : No eye irritation

Respiratory or skin sensitization

Components:

paraquat dichloride:

Result : Did not cause sensitization on laboratory animals.

2-amino-4,5-dihydro-6-methyl-4-propyl-s-triazole-[1,5-a]pyrimidin-5-one:

Species : Guinea pig
Result : Did not cause sensitization on laboratory animals.

Germ cell mutagenicity

Components:

paraquat dichloride:

Germ cell mutagenicity - Assessment : Animal testing did not show any mutagenic effects.

2-amino-4,5-dihydro-6-methyl-4-propyl-s-triazole-[1,5-a]pyrimidin-5-one:

Germ cell mutagenicity - Assessment : Animal testing did not show any mutagenic effects., In vitro tests did not show mutagenic effects

Carcinogenicity

Components:

paraquat dichloride:

Carcinogenicity - Assessment : No evidence of carcinogenicity in animal studies.

2-amino-4,5-dihydro-6-methyl-4-propyl-s-triazole-[1,5-a]pyrimidin-5-one:

Carcinogenicity - Assessment : No evidence of carcinogenicity in animal studies.

Reproductive toxicity

Components:

paraquat dichloride:

Reproductive toxicity - Assessment : No toxicity to reproduction

2-amino-4,5-dihydro-6-methyl-4-propyl-s-triazole-[1,5-a]pyrimidin-5-one:

Reproductive toxicity - Assessment : No toxicity to reproduction

STOT-single exposure

Components:

paraquat dichloride:

Assessment : The substance or mixture is classified as specific target organ toxicant, single exposure, category 3 with respiratory tract irritation.

STOT-repeated exposure

Components:

paraquat dichloride:

Target Organs	:	Lungs, Kidney
Assessment	:	The substance or mixture is classified as specific target organ toxicant, repeated exposure, category 1.

Repeated dose toxicity

Components:

paraquat dichloride:

Remarks	:	Ocular effects (cataracts) have been reported following long term oral exposure of laboratory animals.

2-amino-4,5-dihydro-6-methyl-4-propyl-s-triazole-[1,5-a]pyrimidin-5-one:

Remarks	:	No adverse effect has been observed in chronic toxicity tests.

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

Components:

paraquat dichloride:

Toxicity to fish	:	LC50 (Oncorhynchus mykiss (rainbow trout)): Calculated 24 mg/l Exposure time: 96 h
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): Calculated 2.65 mg/l Exposure time: 48 h
Toxicity to algae/aquatic plants	:	ErC50 (Raphidocelis subcapitata (freshwater green alga)): Calculated 0.26 mg/l Exposure time: 96 h NOEC (Raphidocelis subcapitata (freshwater green alga)): Calculated 0.02 mg/l End point: Growth rate Exposure time: 96 h ErC50 (Navicula pelliculosa (Freshwater diatom)): Calculated 0.00044 mg/l Exposure time: 96 h NOEC (Navicula pelliculosa (Freshwater diatom)): Calculated 0.00028 mg/l End point: Growth rate Exposure time: 96 h

M-Factor (Acute aquatic toxicity)	:	1,000
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	:	NOEC (Daphnia magna (Water flea)): estimated 0.15 mg/l Exposure time: 21 d
M-Factor (Chronic aquatic toxicity)	:	100

2-amino-4,5-dihydro-6-methyl-4-propyl-s-triazole-[1,5-a]pyrimidin-5-one:

Toxicity to fish	:	LC50 (Oncorhynchus mykiss (rainbow trout)): 40 mg/l Exposure time: 96 h
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): > 100 mg/l Exposure time: 48 h
Toxicity to algae/aquatic plants	:	ErC50 (Raphidocelis subcapitata (freshwater green alga)): 74 mg/l Exposure time: 72 h NOEC (Raphidocelis subcapitata (freshwater green alga)): 12.5 mg/l End point: Growth rate Exposure time: 72 h

Persistence and degradability

Components:

paraquat dichloride:

Stability in water	:	Degradation half life: > 30 d Remarks: Persistent in water.

2-amino-4,5-dihydro-6-methyl-4-propyl-s-triazole-[1,5-a]pyrimidin-5-one:

Biodegradability	:	Result: Not readily biodegradable.

Bioaccumulative potential

Components:

paraquat dichloride:

Bioaccumulation	:	Remarks: Does not bioaccumulate.
Partition coefficient: n-octanol/water	:	log Pow: -4.5 (68 °F / 20 °C)

Mobility in soil

Components:

paraquat dichloride:

Distribution among environmental compartments	:	Remarks: immobile
Stability in soil	:	Dissipation time: 20 y Percentage dissipation: 50 % (DT50) Remarks: Persistent in soil.

Other adverse effects

Components:

paraquat dichloride:

Results of PBT and vPvB assessment	:	This substance is not considered to be persistent, bioaccumulating and toxic (PBT). This substance is not considered to be very persistent and very bioaccumulating (vPvB).

2-amino-4,5-dihydro-6-methyl-4-propyl-s-triazole-[1,5-a]pyrimidin-5-one:

Results of PBT and vPvB assessment	:	This substance is not considered to be persistent, bioaccumulating and toxic (PBT). This substance is not considered to be very persistent and very bioaccumulating (vPvB).

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

Waste from residues	:	Do not contaminate ponds, waterways or ditches with chemical or used container. Do not dispose of waste into sewer. Where possible recycling is preferred to disposal or incineration. If recycling is not practicable, dispose of in compliance with local regulations.
Contaminated packaging	:	Empty remaining contents. Triple rinse containers. Empty containers should be taken to an approved waste handling site for recycling or disposal. Do not re-use empty containers.

SECTION 14. TRANSPORT INFORMATION

International Regulations

UNRTDG

UN number	:	UN 2922
Proper shipping name	:	CORROSIVE LIQUID, TOXIC, N.O.S. (PARAQUAT DICHLORIDE)
Class	:	8
Subsidiary risk	:	6.1
Packing group	:	III
Labels	:	8 (6.1)

IATA-DGR

UN/ID No.	:	UN 2922
Proper shipping name	:	Corrosive liquid, toxic, n.o.s. (PARAQUAT DICHLORIDE)
Class	:	8
Subsidiary risk	:	6.1
Packing group	:	III
Labels	:	Corrosive, Toxic
Packing instruction (cargo aircraft)	:	856
Packing instruction (passen-	:	852

ger aircraft)

IMDG-Code

UN number	:	UN 2922
Proper shipping name	:	CORROSIVE LIQUID, TOXIC, N.O.S. (PARAQUAT DICHLORIDE)
Class	:	8
Subsidiary risk	:	6.1
Packing group	:	III
Labels	:	8 (6.1)
EmS Code	:	F-A, S-B
Marine pollutant	:	yes

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable for product as supplied.

Domestic regulation

49 CFR

UN/ID/NA number	:	UN 2922
Proper shipping name	:	Corrosive liquids, toxic, n.o.s. (PARAQUAT DICHLORIDE)
Class	:	8
Subsidiary risk	:	6.1
Packing group	:	III
Labels	:	CORROSIVE, TOXIC
ERG Code	:	154
Marine pollutant	:	no

Special precautions for user

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

SECTION 15. REGULATORY INFORMATION

This chemical is a pesticide product registered by the Environmental Protection Agency and is subject to certain labeling requirements under federal pesticide law. These requirements differ from the classification criteria and hazard information required for safety data sheets, and for workplace labels of non-pesticide chemicals. Following is the hazard information as required on the pesticide label:
Danger
poison
May be fatal if swallowed.
Fatal if inhaled.
Do not breathe mist.
Causes substantial but temporary eye injury.
Harmful if absorbed through skin.
Do not get in eyes, on skin, or on clothing.
Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco or using the toilet.
Remove and wash contaminated clothing before re-use.

CERCLA Reportable Quantity

Components	CAS-No.	Component RQ (lbs)	Calculated product RQ (lbs)
sodium hydroxide	1310-73-2	1000	*

*: Calculated RQ exceeds reasonably attainable upper limit.

SARA 304 Extremely Hazardous Substances Reportable Quantity

Components	CAS-No.	Component RQ (lbs)	Calculated product RQ (lbs)
paraquat dichloride	1910-42-5	10	22

SARA 302 Extremely Hazardous Substances Threshold Planning Quantity

Components	CAS-No.	Component TPQ (lbs)
paraquat dichloride	1910-42-5	10000
paraquat dichloride	1910-42-5	10*

*: Solid in the molten or powdered form (particles < 100 microns), in solution, or meeting the NFPA reactivity criteria

SARA 311/312 Hazards : Corrosive to Metals
Acute toxicity (any route of exposure)
Specific target organ toxicity (single or repeated exposure)
Skin corrosion or irritation
Serious eye damage or eye irritation

SARA 313 : The following components are subject to reporting levels established by SARA Title III, Section 313:

paraquat dichloride	1910-42-5	>= 30 - < 50 %

The ingredients of this product are reported in the following inventories:

TSCA : On or in compliance with the active portion of the TSCA inventory

TSCA list

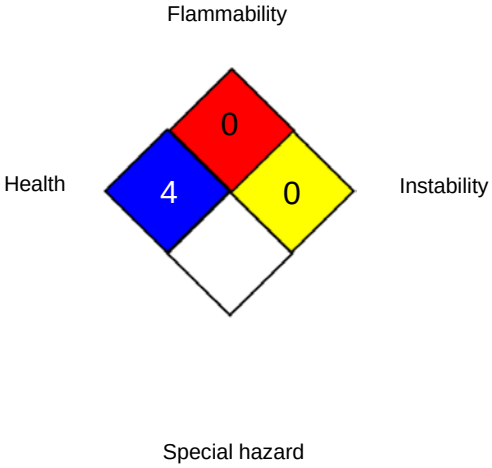
No substances are subject to a Significant New Use Rule.

No substances are subject to TSCA 12(b) export notification requirements.

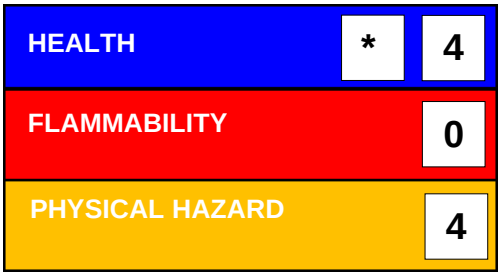
SECTION 16. OTHER INFORMATION

Further information

NFPA 704:



HMIS® IV:



HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. The "*" represents a chronic hazard, while the "/" represents the absence of a chronic hazard.

Full text of other abbreviations

ACGIH	:	USA. ACGIH Threshold Limit Values (TLV)
NIOSH REL	:	USA. NIOSH Recommended Exposure Limits
OSHA P0	:	USA. OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000
OSHA Z-1	:	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
ACGIH / TWA	:	8-hour, time-weighted average
NIOSH REL / TWA	:	Time-weighted average concentration for up to a 10-hour workday during a 40-hour workweek
OSHA P0 / TWA	:	8-hour time weighted average
OSHA Z-1 / TWA	:	8-hour time weighted average

AIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DOT - Department of Transportation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; EHS - Extremely Hazardous Substance; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; HMIS - Hazardous Materials Identification System; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; MSHA - Mine Safety and Health Administration; n.o.s. - Not Otherwise Specified; NFPA - National Fire Protection Association; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office

of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; RCRA - Resource Conservation and Recovery Act; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RQ - Reportable Quantity; SADT - Self-Accelerating Decomposition Temperature; SARA - Superfund Amendments and Reauthorization Act; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative

Revision Date : 05/18/2021

Items where changes have been made to the previous version are highlighted in the body of this document by two vertical lines.

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

US / Z8