

MATERIAL SAFETY DATA SHEET

AGRESSA (Imidacloprid 21% + Beta cyfluthrin 10.5%SC)

1. IDENTIFICATION OF THE SUBSTANCE / PREPARATION AND SUPPLIER

PRODUCT NAME	:	AGRESSA
CHEMICAL GROUP	:	Neonicotinoid + Synthetic Pyrethroid
RECOMMENDED USE	:	A liquid Insecticide for household use
FORMULATION	:	Suspension Concentrate
CORPORATE ADDRESS	:	Arbuda Agrochemicals Limited 1104, Ruby Crescent Business Boulevard, Ashok Chakravarti Road, Kandivali-East, Mumbai-400101, Maharashtra, India Customer Care No- +91 9076907642 Email - info@arbudaagrochemicals.com
MANUFACTURER ADDRESS	:	Arbuda Agrochemicals Limited Plot No. 279-283, GIDC, Taluka Talod , District- Sabarkantha, Gujarat – 383215.

2. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

Chemical nature : Suspension concentrate (=flowable concentrate)(SC)

Components

Sr.No.	Component	Content (% w/w)
1	Imidacloprid (Active ingredient)	21.00 % w/w
2	Beta cyfluthrin (Active Ingredient)	10.50 % w/w
3	1,2,3-propanetriol (Anti freeze)	10.00 % w/w
4	Residues, petroleum, catalytic reformer fractionators, sulfonated , polymer with formaldehyde, sodium salts (Dispersant)	3.00 % w/w
5	Oxirane, 2-methyl-polymer oxirane (Emulsifier)	3.00 % w/w
6	Xanthan gum (thickener)	0.20 % w/w
7	30% Aqueous emulsion of polydimethylsiloxane (Antifoaming)	0.15 % w/w
8	Mixture of 5-chloro-2-methyl-2H-isothiazol-3-	0.15 % w/w

	one and 2-methyl-2H-isothiazol-3-one (3:1), aqueous solution (Preservative)	
9	Demineralised water (solvent)	Q.S. %
	Total	100 % w/w

Chemical name	CAS-No	Concentration (% w/w)
Imidacloprid	138261-41-3	>= 20 - < 25
beta-Cyfluthrin (ISO)	1820573-27-0	>= 10 - < 20
Alkyl-naphthalenesulfonic acid, polymer with formaldehyde, sodium salt	68425-94-5	>= 2.5 - < 5
Reaction mass of: 5-chloro-2-methyl-4-isothiazolin-3-one [EC no. 247-500-7] and 2-methyl-2H-isothiazol-3-one [EC no. 220-239-6] (3:1)	55965-84-9	>= 0.025 - < 0.06

Alternative CAS Numbers for some regions

Chemical name	Alternative CAS Number(s)
Reaction mass of: 5-chloro-2-methyl-4-isothiazolin-3-one [EC no. 247-500-7] and 2-methyl-2H-isothiazol-3-one [EC no. 220-239-6] (3:1)	2682-20-4, 26172-55-4

3. HAZARDOUS INFORMATION

Manufacture, Storage and Import of Hazardous Chemicals Rules 1989


Classification

Not classified as hazardous according to criteria laid down in Part I of Schedule-1.

GHS Classification

Acute toxicity (Oral)	:	Category 4
Short-term (acute) aquatic hazard	:	Category 1
Long-term (chronic) aquatic hazard	:	Category 1
Effects on or via lactation		

GHS label elements

Hazard pictograms	:	
Signal word	:	Warning
Hazard statements	:	H302 Harmful if swallowed. H362 May cause harm to breastfed children. H410 Very toxic to aquatic life with long-lasting effects
Precautionary statements	:	Prevention: P203 Obtain, read and follow all safety instructions before use. P263 Avoid contact during pregnancy and while nursing. P264 Wash skin thoroughly after handling. P270 Do not eat, drink or smoke when using this product. P273 Avoid release to the environment.
		Response: P301+P317+ P330 If Swallowed. Get medical help. Rinse Mouth. P318 If exposed or concerned, get medical advice. P391 collect spillage. Disposal: P501 Dispose of contents/ container to an approved waste disposal plant.

Other hazards that do not result in classification

Cutaneous sensations may occur, such as burning or stinging on the face and mucosae. However, these sensations cause no lesions and are of a transitory nature (max. 24 hours).

4. FIRST AID MEASURES

General advice :	In the case of accident or if you feel unwell, seek medical advice immediately. When symptoms persist or in all cases of doubt seek medical advice.
If inhaled :	Get medical attention.
In case of skin contact :	Get medical attention.
In case of eye contact :	Flush eyes with water as a precaution. Get medical attention if irritation develops and persists.
If swallowed	If swallowed, DO NOT induce vomiting unless directed to do so by medical personnel. Get medical attention. Rinse mouth thoroughly with water. Never give anything by mouth to an unconscious person.
Most important symptoms and effects, both acute and delayed	Skin and eye paraesthesia which may be severe Usually transient with resolution within 24 hours The product causes irritation of eyes, skin and mucous membranes. Cough sneezing

	<p>discomfort in the chest tachycardia hypotension Nausea Abdominal pain Diarrhoea Vomiting Blurred vision Headache anorexia Somnolence Coma Convulsions Tremors Prostration Airway hyperreaction Pulmonary oedema Palpitation Dizziness Harmful if swallowed. May cause harm to breast-fed children. This product contains a pyrethroid. Pyrethroid poisoning should not be confused with carbamate or organophosphate poisoning. This product contains a nicotinoid.</p>
Protection of first-aiders	<p>First Aid responders should pay attention to self-protection, and use the recommended personal protective equipment when the potential for exposure exists (see section 8).</p>
Notes to physician	<p>Initial treatment: symptomatic. Monitor: respiratory and cardiac functions. In case of ingestion gastric lavage should be considered in cases of significant ingestions only within the first 2 hours. However, the application of activated charcoal and sodium sulphate is always advisable. Keep respiratory tract clear. Oxygen or artificial respiration if needed. In case of convulsions, a benzodiazepine (e.g. diazepam) should be given according to standard regimens. If not effective, phenobarbital may be used. Contraindication: derivatives of adrenaline. Contraindication: atropine. There is no specific antidote available. Recovery is spontaneous and without sequelae. In case of skin irritation, application of oils or lotions containing vitamin E may be considered.</p>

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media	<p>Water spray Alcohol-resistant foam Carbon dioxide (CO₂) Dry chemical</p>
Unsuitable extinguishing media	<p>None known.</p>
Specific hazards during firefighting	<p>Vapours may form explosive mixtures with air. Exposure to combustion products may be a hazard to health.</p>
Hazardous combustion	<p>Carbon oxides</p>

products	Nitrogen oxides (NO _x) Chlorine compounds Fluorine compounds Metal oxides
Specific extinguishing methods	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. Use water spray to cool unopened containers. Remove undamaged containers from fire area if it is safe to do so. Evacuate area.
Special protective equipment for firefighters	In the event of fire, wear self-contained breathing apparatus. Use personal protective equipment.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures	Use personal protective equipment. Follow safe handling advice (see section 7) and personal protective equipment recommendations (see section 8).
Environmental precautions	Avoid release to the environment. Prevent further leakage or spillage if safe to do so.
Methods and materials for	Soak up with inert absorbent material.

7. HANDLING AND STORAGE

Technical measures	See Engineering measures under EXPOSURE CONTROLS/PERSONAL PROTECTION section.
Local/Total ventilation	Use only with adequate ventilation.
Advice on safe handling	Avoid contact during pregnancy and while nursing. Avoid inhalation of vapour or mist. Do not swallow. Avoid contact with eyes. Avoid prolonged or repeated contact with skin. Wash skin thoroughly after handling. Handle in accordance with good industrial hygiene and safety practice, based on the results of the workplace exposure assessment Do not eat, drink or smoke when using this product. Take care to prevent spills, waste and minimize release to the environment.
Conditions for safe storage	Keep in properly labelled containers. Store in accordance with the particular national regulations.
Materials to avoid containment and cleaning up Prevent spreading over a wide area (e.g. by containment or oil barriers). Retain and dispose of contaminated wash water. Local authorities should be	Do not store with the following product types: Strong oxidizing agents For large spills, provide dyking or other appropriate containment to keep material from spreading. If dyked material can be pumped, store recovered material in appropriate container. Clean up remaining materials from spill with suitable absorbent. Local or national regulations may apply to releases and disposal of this material, as well as those materials and items employed in the cleanup

advised if significant spillages cannot be contained.	of releases. You will need to determine which regulations are applicable. Sections 13 and 15 of this SDS provide information regarding certain local or national requirements.
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8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Components with workplace control parameters

Contains no substances with occupational exposure limit values.

Engineering measures	Ensure adequate ventilation, especially in confined areas. Minimize workplace exposure concentrations.
Personal protective equipment	Organic vapour type
Hand protection Material	Nitrile rubber
Break through time	> 480 min
Glove thickness	> 0.4 mm
Protective index	Class 6

Remarks	Choose gloves to protect hands against chemicals depending on the concentration and quantity of the hazardous substance and specific to place of work. For special applications, we recommend clarifying the resistance to chemicals of the aforementioned protective gloves with the glove manufacturer. Wash hands before breaks and at the end of workday.
Eye protection	Wear the following personal protective equipment: Safety glasses
Skin and body protection	Skin should be washed after contact.
Hygiene measures	If exposure to chemical is likely during typical use, provide eye flushing systems and safety showers close to the working place. When using do not eat, drink or smoke. Wash contaminated clothing before re-use.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	Suspension Concentrates
Colour	white, beige
Odour	Characteristic
Odour Threshold	No data available
pH	6 - 8 (23 °C) Concentration: 100 %
Melting point/freezing point	No data available
Initial boiling point and	No data available

boiling range	
Flash point	> 93.3 °C
Evaporation rate	No data available
Flammability (solid, gas)	Not applicable
Flammability (liquids)	Ignitable (see flash point)
Upper explosion limit / Upper flammability limit	No data available
Lower explosion limit / Lower flammability limit	No data available
Vapour pressure	No data available
Relative vapour density	No data available
Density	1.16 g/cm ³ (20 °C)
Solubility(ies) Water solubility	dispersible
Partition coefficient: n octanol/water	Not applicable
Auto-ignition temperature	No data available
Decomposition temperature	No data available
Viscosity Viscosity, dynamic	200 - 500 mPa.s (20 °C) Shear rate of 20/sec 150 - 300 mPa.s (20 °C) Shear rate of 100/sec
Viscosity, kinematic	No data available
Explosive properties	Not explosive
Oxidizing properties	The substance or mixture is not classified as oxidizing.
Minimum ignition energy	Not applicable
Particle size	Not applicable

10. STABILITY AND REACTIVITY

Reactivity	Not classified as a reactivity hazard.
Chemical stability	Stable under normal conditions.
Possibility of hazardous reactions	Vapours may form explosive mixture with air. Can react with strong oxidizing agents.
Conditions to avoid	None known.
Incompatible materials	Oxidizing agents
Hazardous decomposition products	No hazardous decomposition products are known.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure	Inhalation Skin contact Ingestion Eye contact
Acute toxicity	

Harmful if swallowed.	
Product:	
Acute oral toxicity	LD50(Rat): > 1,044 mg/kg
Acute inhalation toxicity	Assessment: The substance or mixture has no acute inhalation toxicity
Components:	
Imidacloprid:	
Acute oral toxicity	LD50 (Mouse, male): 131 mg/kg Method: OECD Test Guideline 401
Acute inhalation toxicity	LC50 (Rat): > 5.323 mg/l Exposure time: 4 h Test atmosphere: dust/mist
Acute dermal toxicity	LD50 (Rat): > 5,000 mg/kg
beta-Cyfluthrin (ISO):	
Acute oral toxicity	LD50 (Rat): 11 mg/kg
Acute inhalation toxicity	Exposure time: 4 h Test atmosphere: dust/mist Method: OECD Test Guideline 403
Acute dermal toxicity	LD50 (Rat): > 5,000 mg/kg Method: OECD Test Guideline 402
Alkylnaphthalenesulfonic acid, polymer with formaldehyde, sodium salt:	
Acute oral toxicity	LD50 (Rat): > 4,500 mg/kg
Reaction mass of: 5-chloro-2-methyl-4-isothiazolin-3-one [EC no. 247-500-7] and 2-methyl-2H isothiazol-3-one [EC no. 220-239-6] (3:1):	
Acute oral toxicity	LD50 (Rat): 64 mg/kg
Acute inhalation toxicity	LC50 (Rat): 0.171 mg/l Exposure time: 4 h Test atmosphere: dust/mist Assessment: Corrosive to the respiratory tract
Acute dermal toxicity	LD50 (Rabbit): 87.12 mg/kg
Skin corrosion/irritation Not classified based on available information.	
Components:	
Imidacloprid:	
Species	Rabbit
Result	No skin irritation
beta-Cyfluthrin (ISO):	
Species	Rabbit
Method	OECD Test Guideline 404
Result	No skin irritation
Reaction mass of: 5-chloro-2-methyl-4-isothiazolin-3-one [EC no. 247-500-7] and 2-methyl-2H isothiazol-3-one [EC no. 220-239-6] (3:1):	
Species	Rabbit
Method	OECD Test Guideline 404
Result	Corrosive after 1 to 4 hours of exposure
Serious eye damage/eye irritation	

Not classified based on available information.	
Components: Imidacloprid:	
Species	Rabbit
Result	No skin irritation
beta-Cyfluthrin (ISO):	
Species	Rabbit
Method	OECD Test Guideline 404
Result	No skin irritation
Alkyl-naphthalenesulfonic acid, polymer with formaldehyde, sodium salt	
Result	Irritation to eyes, reversing within 21 days
Reaction mass of: 5-chloro-2-methyl-4-isothiazolin-3-one [EC no. 247-500-7] and 2-methyl-2H isothiazol-3-one [EC no. 220-239-6] (3:1):	
Result	Irreversible effects on the eye
Remarks	Based on skin corrosivity
Respiratory or skin sensitisation	
Skin sensitisation Not classified based on available information	
Respiratory sensitisation Not classified based on available information.	
Product:	
Species	Guinea pig
Method	OECD Test Guideline 406
Result	Does not cause skin sensitisation.
Components: Imidacloprid:	
Test Type	Magnusson-Kligman-Test
Exposure routes	Skin contact
Species	Guinea pig
Method	OECD Test Guideline 406
Result	Negative
beta-Cyfluthrin (ISO):	
Test Type	Buehler Test
Exposure routes	Skin contact
Species	Guinea pig
Method	OECD Test Guideline 406
Result	Negative
Reaction mass of: 5-chloro-2-methyl-4-isothiazolin-3-one [EC no. 247-500-7] and 2-methyl-2H isothiazol-3-one [EC no. 220-239-6] (3:1):	
Test Type	Buehler Test
Exposure routes	Skin contact
Species	Guinea pig
Result	Positive
Assessment	Probability or evidence of high skin sensitisation rate in humans

Germ cell mutagenicity Not classified based on available information.	
Components:	
Imidacloprid:	
Genotoxicity in vitro	Test Type: Bacterial reverse mutation assay (AMES) Result: negative
	Test Type: In vitro mammalian cell gene mutation test Result: negative
	Test Type: Chromosome aberration test in vitro Result: negative
beta-Cyfluthrin (ISO): Genotoxicity in vitro	Test Type: Bacterial reverse mutation assay (AMES) Result: negative Remarks: Based on data from similar materials
	Test Type: Chromosome aberration test in vitro Result: negative Remarks: Based on data from similar materials
Carcinogenicity Not classified based on available information.	
Components:	
beta-Cyfluthrin (ISO):	
Species	Mouse
Application Route	Ingestion
Exposure time	18 Months
Result	Negative
Remarks	Based on data from similar materials
Reproductive toxicity May cause harm to breast-fed children.	
Components:	
Imidacloprid:	
Effects on foetal development	Test Type: Embryo-foetal development Species: Rat Application Route: Ingestion Result: negative
beta-Cyfluthrin (ISO): Effects on fertility	Test Type: Two-generation reproduction toxicity study Species: Rat Application Route: Ingestion Method: OECD Test Guideline 416 Result: negative Remarks: Based on data from similar materials
Effects on foetal development	Test Type: Fertility/early embryonic development Species: Rat Application Route: Ingestion Method: OECD Test Guideline 426 Result: negative
Reproductive toxicity - Assessment	Studies indicating a hazard to babies during the lactation period
STOT - single exposure Not classified based on available information.	
Product: Assessment	The substance or mixture is not classified as specific target organ toxicant, single exposure.
Components:	

beta-Cyfluthrin (ISO):	
Exposure routes	Ingestion
Target Organs	Nervous system
Assessment	Shown to produce significant health effects in animals at concentrations of 300 mg/kg bw or less.
Exposure routes	Skin contact
Target Organs	Nervous system
Assessment	Shown to produce significant health effects in animals at concentrations of 1000 mg/kg bw or less.
STOT - repeated exposure Not classified based on available information.	
Repeated dose toxicity Components:	
Imidacloprid:	
Species	Mouse, male
LOAEL	17 mg/kg
Application Route	Ingestion
Exposure time	24 Months
Aspiration toxicity Not classified based on available information.	

12. ECOLOGICAL INFORMATION

Ecotoxicity Components:	
Imidacloprid:	LC50 (Oncorhynchus mykiss (rainbow trout)): 211 mg/l
Toxicity to fish	Exposure time: 96 hrs
Toxicity to daphnia and other aquatic invertebrates	EC50: 0.0027 mg/l Exposure time: 48 hrs
Toxicity to algae/aquatic plants	ErC50 (Desmodesmus subspicatus (green algae)): > 10 mg/l Exposure time: 96 hrs Method: OECD Test Guideline 201 NOEC (Desmodesmus subspicatus (green algae)): >= 10 mg/l Exposure time: 96 hrs Method: OECD Test Guideline 201
M-Factor (Acute aquatic toxicity)	100
Toxicity to microorganisms	NOEC (activated sludge): 5,600 mg/l Exposure time: 3 hrs
Toxicity to fish (Chronic toxicity)	NOEC: 9.02 mg/l Exposure time: 91 days Species: Oncorhynchus mykiss (rainbow trout) Method: OECD Test Guideline 210
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	EC10: 0.000056 mg/l Exposure time: 21 days
M-Factor (Chronic aquatic toxicity)	1,000
beta-Cyfluthrin (ISO):	
Toxicity to fish	LC50 (Oncorhynchus mykiss (rainbow trout)): 0.068 µg/l Exposure time: 96 hrs Method: OECD Test Guideline 203

Toxicity to daphnia and other aquatic invertebrates	EC50 (Hyalella azteca (Amphipod)): > 0.0001 - 0.001 µg/l Exposure time: 48 hrs Remarks: Based on data from similar materials
M-Factor (Acute aquatic toxicity)	1,000,000
Toxicity to fish (Chronic toxicity)	NOEC: > 0.001 - 0.01 µg/l Exposure time: 58 days Species: Oncorhynchus mykiss (rainbow trout) Remarks: Based on data from similar materials
M-Factor (Chronic aquatic toxicity)	1,000,000
Alkyl naphthalenesulfonic acid, polymer with formaldehyde, sodium salt:	
Toxicity to fish	LC50 (Danio rerio (zebra fish)): > 10 - 100 mg/l Exposure time: 96 hrs Method: OECD Test Guideline 203 Remarks: Based on data from similar materials
Toxicity to daphnia and other aquatic invertebrates	EC50 (Daphnia magna (Water flea)): > 100 mg/l Exposure time: 48 hrs Method: OECD Test Guideline 202 Remarks: Based on data from similar materials
Toxicity to algae/aquatic plants	EC50 (Pseudokirchneriella subcapitata (green algae)): > 100 mg/l Exposure time: 72 hrs Method: OECD Test Guideline 201 Remarks: Based on data from similar materials EC10 (Pseudokirchneriella subcapitata (green algae)): > 100 mg/l Exposure time: 72 hrs Method: OECD Test Guideline 201 Remarks: Based on data from similar materials
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	EC10: > 1 mg/l Exposure time: 21 days Species: Daphnia magna (Water flea) Method: OECD Test Guideline 211 Remarks: Based on data from similar materials
Reaction mass of: 5-chloro-2-methyl-4-isothiazolin-3-one [EC no. 247-500-7] and 2-methyl-2-isothiazolin-3-one [EC no. 220-239-6] (3:1):	
Toxicity to fish	LC50 (Oncorhynchus mykiss (rainbow trout)): 0.19 mg/l Exposure time: 96 hrs
Toxicity to daphnia and other aquatic invertebrates	EC50 (Daphnia magna (Water flea)): 0.16 mg/l Exposure time: 48 hrs
Toxicity to algae/aquatic plants	ErC50 (Skeletonema costatum (marine diatom)): 0.0052 mg/l Exposure time: 48 hrs NOEC (Skeletonema costatum (marine diatom)): 0.00049 mg/l Exposure time: 48 hrs
M-Factor (Acute aquatic toxicity)	100
Toxicity to fish (Chronic toxicity)	NOEC: 0.02 mg/l Exposure time: 36 days Species: Pimephales promelas (fathead minnow)
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	NOEC: 0.10 mg/l Exposure time: 21 days Species: Daphnia magna (Water flea)
M-Factor (Acute aquatic toxicity)	100
Persistence and degradability	

Components:	
Imidacloprid:	
Biodegradability	Result: not rapidly degradable
Alkyl naphthalenesulfonic acid, polymer with formaldehyde, sodium salt:	
Biodegradability	Result: Not readily biodegradable. Remarks: Based on data from similar materials
Reaction mass of: 5-chloro-2-methyl-4-isothiazolin-3-one [EC no. 247-500-7] and 2-methyl-2H-isothiazol-3-one [EC no. 220-239-6] (3:1):	
Biodegradability	Result: Not readily biodegradable. Biodegradation: 62 % Exposure time: 28 days Method: OECD Test Guideline 301B
Bioaccumulative potential	
Components:	
Imidacloprid:	
Partition coefficient: noctanol/water	log Pow: 0.57
beta-Cyfluthrin (ISO):	
Bioaccumulation	Species: Lepomis macrochirus (Bluegill sunfish) Bioconcentration factor (BCF): 1,508 Method: OECD Test Guideline 305
Partition coefficient: noctanol/water	log Pow: 5.8 - 5.9
Reaction mass of: 5-chloro-2-methyl-4-isothiazolin-3-one [EC no. 247-500-7] and 2-methyl-2H-isothiazol-3-one [EC no. 220-239-6] (3:1):	
Partition coefficient: noctanol/water	log Pow: < 1
Mobility in soil	No data available
Other adverse effects	No data available

13. DISPOSAL CONSIDERATION

Disposal methods

Waste from residues

- : It is best to use all of the product in accordance with label directions. If it is necessary to dispose of unused product, please follow container label instructions and applicable local guidelines.
Do not dispose of waste into sewer.

Contaminated packaging

- : Follow advice on product label and/or leaflet. Empty containers retain residue and can be dangerous. Do not re-use empty containers.

14. TRANSPORT INFORMATION

International Regulations

UNRTDG	
UN number	UN 3082
Proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (beta-Cyfluthrin (ISO), Imidacloprid)
Class	9
Packing group	III
Labels	9
Environmentally hazardous	Yes
IATA-DGR	
UN/ID No.	UN 3082
	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (beta-Cyfluthrin (ISO), Imidacloprid)
	9
Labels	Miscellaneous
Packing instruction (cargo aircraft)	964
Packing instruction (passenger aircraft)	964
Environmentally hazardous	Yes
IMDG-Code	
UN number	UN 3082
Proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (beta-Cyfluthrin (ISO), Imidacloprid)
Class	9
Packing group	III
EmS Code	F-A, S-F
Marine pollutant	Yes
Transport in bulk according to IMO instruments	Not applicable for product as supplied.
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.

Full text of other abbreviations

AIIC - Australian Inventory of Industrial Chemicals; ANTT - National Agency for Transport by Land of Brazil; ASTM - American Society for the Testing of Materials; bw - Body weight; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); EC_x - Concentration associated with x% response; EL_x - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErC_x - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; 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; n.o.s. - Not Otherwise Specified; Nch - Chilean Norm; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NOM - Official Mexican Norm; 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; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TDG - Transportation of Dangerous Goods; TECI - Thailand Existing Chemicals 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; WHMIS - Workplace Hazardous Materials Information System

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 is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and shall not be considered a warranty or quality specification of any type. The information provided relates only to the specific material identified at the top of this SDS and may not be valid when the SDS material is used in combination with any other materials or in any process, unless specified in the text. Material users should review the information and recommendations in the specific context of their intended manner of handling, use, processing and storage, including an assessment of the appropriateness of the SDS material in the user's end product, if applicable. IN / EN