


# SAFETY DATA SHEET

Zembu™ Herbicide

## Section 1. Identification

<b>GHS product identifier</b>	: Zembu™ Herbicide
<b>Other means of identification</b>	: <b>Active ingredient:</b> Common name: Pyraclonil Chemical name: 1-(3-Chloro-4,5,6,7-tetrahydropyrazolo[1,5-a]pyridin-2-yl)-5-(methyl-2-propyn-1-ylamino)-1H-pyrazole-4-carbonitrile
<b>Product code</b>	: <b>EPA Registration Number:</b> 71711-63
<b>Product use</b>	: Herbicide. Granular solid.
<b>Supplier's details</b>	: Nichino America Inc 4550 Linden Hill Road, Suite 501 Wilmington, DE 19808 United States Telephone number: 302-636-9001
<b>e-mail address of person responsible for this SDS</b>	: Not available.
<b>Emergency telephone number (with hours of operation)</b>	: In case of fire or spill: (800) 424-9300 (24 hours per day) For international shipments: (703) 527-3887 (24 hours per day) For emergency health and safety inquiries: (800) 348-5832 (24 hours per day)

## Section 2. Hazards identification

<b>OSHA/HCS status</b>	: This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).
<b>Classification of the substance or mixture</b>	: EYE IRRITATION - Category 2A
<b><u>GHS label elements</u></b>	
<b>Hazard pictograms</b>	: 
<b>Signal word</b>	: Warning
<b>Hazard statements</b>	: Causes serious eye irritation.
<b><u>Precautionary statements</u></b>	
<b>Prevention</b>	: Wear eye or face protection. Wash hands thoroughly after handling.
<b>Response</b>	: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice or attention.
<b>Storage</b>	: Not applicable.
<b>Disposal</b>	: Not applicable.
<b>Hazards not otherwise classified</b>	: None known.

## Section 3. Composition/information on ingredients

<b>Substance/mixture</b>	: Mixture
<b>Other means of identification</b>	: <b>Active ingredient:</b> Common name: Pyraclonil Chemical name: 1-(3-Chloro-4,5,6,7-tetrahydropyrazolo[1,5-a]pyridin-2-yl)-5-(methyl-2-propyn-1-ylamino)-1H-pyrazole-4-carbonitrile
<b>Product code</b>	: <b>EPA Registration Number:</b> 71711-63

Ingredient name	%	CAS number
Pyraclonil	1.8	158353-15-2
Silica, crystalline (Quartz) (Respirable fraction)	<0.1	14808-60-7
<b>The specific chemical identity and/or percentage of composition is being withheld as a trade secret</b>		

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

**There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified and hence require reporting in this section.**

Occupational exposure limits, if available, are listed in Section 8.

## Section 4. First aid measures

### Description of necessary first aid measures

<b>Eye contact</b>	: Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention.
<b>Inhalation</b>	: Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention if adverse health effects persist or are severe. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.
<b>Skin contact</b>	: Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur. Wash clothing before reuse. Clean shoes thoroughly before reuse.
<b>Ingestion</b>	: Wash out mouth with water. Remove dentures if any. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention if adverse health effects persist or are severe. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

### Most important symptoms/effects, acute and delayed

#### Potential acute health effects

<b>Eye contact</b>	: Causes serious eye irritation.
<b>Inhalation</b>	: No known significant effects or critical hazards.
<b>Skin contact</b>	: May cause slight skin irritation.
<b>Ingestion</b>	: No known significant effects or critical hazards.

#### Over-exposure signs/symptoms

## Section 4. First aid measures

- Eye contact** : Adverse symptoms may include the following:  
pain or irritation  
watering  
redness
- Inhalation** : Adverse health effects could include the following:  
respiratory tract irritation  
coughing
- Skin contact** : No specific data.
- Ingestion** : No specific data.

### Indication of immediate medical attention and special treatment needed, if necessary

- Notes to physician** : In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.
- Specific treatments** : No specific treatment.
- Protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

See toxicological information (Section 11)

## Section 5. Fire-fighting measures

### Extinguishing media

- Suitable extinguishing media** : Use an extinguishing agent suitable for the surrounding fire.
- Unsuitable extinguishing media** : Do not use water jet.

**Specific hazards arising from the chemical** : No specific fire or explosion hazard.

- Hazardous thermal decomposition products** : Decomposition products may include the following materials:  
carbon dioxide  
carbon monoxide  
nitrogen oxides

**Special protective actions for fire-fighters** : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

**Special protective equipment for fire-fighters** : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

## Section 6. Accidental release measures

### Personal precautions, protective equipment and emergency procedures

- For non-emergency personnel** : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
- For emergency responders** : If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

**Environmental precautions** : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

### Methods and materials for containment and cleaning up

## Section 6. Accidental release measures

- Small spill** : Move containers from spill area. Avoid dust generation. Using a vacuum with HEPA filter will reduce dust dispersal. Place spilled material in a designated, labeled waste container. Dispose of via a licensed waste disposal contractor. Use spark-proof tools and explosion-proof equipment.
- Large spill** : Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Avoid dust generation. Do not dry sweep. Vacuum dust with equipment fitted with a HEPA filter and place in a closed, labeled waste container. Dispose of via a licensed waste disposal contractor. Note: see Section 1 for emergency contact information and Section 13 for waste disposal. Use spark-proof tools and explosion-proof equipment.

## Section 7. Handling and storage

### Precautions for safe handling

- Protective measures** : Put on appropriate personal protective equipment (see Section 8). Do not ingest. Avoid contact with eyes, skin and clothing. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container. Prevent dust accumulation.
- Advice on general occupational hygiene** : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

- Conditions for safe storage, including any incompatibilities** : Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

## Section 8. Exposure controls/personal protection

### Control parameters

#### Occupational exposure limits

Ingredient name	Exposure limits
Silica, crystalline (Quartz) (Respirable fraction)	<p><b>OSHA PEL Z3 (United States, 6/2016).</b> TWA: 250 mppcf / (%SiO<sub>2</sub>+5) 8 hours. Form: Respirable TWA: 10 mg/m<sup>3</sup> / (%SiO<sub>2</sub>+2) 8 hours. Form: Respirable</p> <p><b>OSHA PEL (United States, 5/2018).</b> TWA: 50 µg/m<sup>3</sup> 8 hours. Form: Respirable dust</p> <p><b>ACGIH TLV (United States, 1/2021).</b> TWA: 0.025 mg/m<sup>3</sup> 8 hours. Form: Respirable fraction</p> <p><b>NIOSH REL (United States, 10/2020).</b> TWA: 0.05 mg/m<sup>3</sup> 10 hours. Form: respirable dust</p>

#### Biological exposure indices

No exposure indices known.

- Appropriate engineering controls** : Good general ventilation should be sufficient to control worker exposure to airborne contaminants.

## Section 8. Exposure controls/personal protection

**Environmental exposure controls** : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

### Individual protection measures

**Hygiene measures** : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

**Eye/face protection** : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles.

### Skin protection

**Hand protection** : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.

**Body protection** : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

**Other skin protection** : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

**Respiratory protection** : Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use.  
**Recommended:** Ensure an MSHA/NIOSH-approved respirator or equivalent is used.

## Section 9. Physical and chemical properties and safety characteristics

The conditions of measurement of all properties are at standard temperature and pressure unless otherwise indicated.

### Appearance

**Physical state** : Solid. [Granular solid.]  
**Color** : Grayish tan.  
**Odor** : Slight faint.  
**Odor threshold** : Not available.  
**pH** : 6.7 [Conc. (% w/w): 1%]  
**Melting point/freezing point** : Not available.  
**Boiling point, initial boiling point, and boiling range** : Not available.  
**Flash point** : Not applicable.  
**Flammability** : Not available.  
**Lower and upper explosion limit/flammability limit** : No explosion characteristics.  
**Vapor pressure** : Not available.  
**Relative vapor density** : Not applicable.  
**Relative density** : Not available.

## Section 9. Physical and chemical properties and safety characteristics

Density	: 0.9 g/cm <sup>3</sup>
Solubility in water	: Not available.
Partition coefficient: n-octanol/water	: Not applicable.
Auto-ignition temperature	: Not applicable.
Decomposition temperature	: Not available.
Viscosity	: Not applicable.
Explosive properties	: Not available.
Oxidizing properties	: Not available.
<b>Particle characteristics</b>	
Median particle size	: Not available.

## Section 10. Stability and reactivity

Reactivity	: No dangerous reaction known under conditions of normal use.
Chemical stability	: The product is stable.
Possibility of hazardous reactions	: Under normal conditions of storage and use, hazardous reactions will not occur.
Conditions to avoid	: Prevent dust accumulation.
Incompatible materials	: No specific data.
Hazardous decomposition products	: Under normal conditions of storage and use, hazardous decomposition products should not be produced.

## Section 11. Toxicological information

### Information on toxicological effects

#### Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
Zembu™ Herbicide	LC50 Inhalation Dusts and mists	Rat - Male, Female	>2.06 mg/l	4 hours
	LD50 Oral	Rat - Female	>5000 mg/kg	-

**Conclusion/Summary** : Based on available data, the classification criteria are not met. (Expert judgment)

#### Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
Zembu™ Herbicide	Eyes - Moderate irritant	Rabbit	-	-	14 days
	Skin - Mild irritant	Rabbit	-	4 hours 0.5 g	72 hours

#### Conclusion/Summary

<b>Skin</b>	: Based on available data, the classification criteria are not met.
<b>Eyes</b>	: Causes serious eye irritation.
<b>Respiratory</b>	: Not available.

#### Sensitization

## Section 11. Toxicological information

Product/ingredient name	Route of exposure	Species	Result
Zembu™ Herbicide	skin	Mouse	Not sensitizing

### Conclusion/Summary

**Skin** : Based on available data, the classification criteria are not met.

**Respiratory** : Not available.

### Mutagenicity

Product/ingredient name	Test	Experiment	Result
Pyraclozil	473 <i>In vitro</i> Mammalian Chromosomal Aberration Test	Experiment: <i>In vitro</i>	Positive
	471 Bacterial Reverse Mutation Test	Experiment: <i>In vitro</i> Subject: Bacteria	Negative
	474 Mammalian Erythrocyte Micronucleus Test	Experiment: <i>In vivo</i> Subject: Mammalian-Animal	Negative

**Conclusion/Summary** : Based on available data, the classification criteria are not met.

### Carcinogenicity

Product/ingredient name	Result	Species	Dose	Exposure
Pyraclozil	Negative - Oral	Rat	-	-
	Positive - Oral	Mouse	100 to 204 mg/kg	18 months; 7 days per week

**Conclusion/Summary** : Based on available data, the classification criteria are not met.

### Classification

Product/ingredient name	OSHA	IARC	NTP
Silica, crystalline (Quartz) (Respirable fraction)	-	1	Known to be a human carcinogen.

### Reproductive toxicity

Product/ingredient name	Maternal toxicity	Fertility	Developmental toxin	Species	Dose	Exposure
Pyraclozil	-	-	Negative	Rabbit	Oral	-
	-	Negative	-	Rat	Oral	-
	-	-	Negative	Rat	Oral	-

**Conclusion/Summary** : Based on available data, the classification criteria are not met.

### Teratogenicity

**Conclusion/Summary** : Not available.

### Specific target organ toxicity (single exposure)

Not available.

### Specific target organ toxicity (repeated exposure)

Not available.

### Aspiration hazard

Not available.

**Information on the likely routes of exposure** : Routes of entry anticipated: Oral, Dermal, Ocular, Inhalation.

## Section 11. Toxicological information

### Potential acute health effects

- Eye contact** : Causes serious eye irritation.  
**Inhalation** : No known significant effects or critical hazards.  
**Skin contact** : May cause slight skin irritation.  
**Ingestion** : No known significant effects or critical hazards.

### Symptoms related to the physical, chemical and toxicological characteristics

- Eye contact** : Adverse symptoms may include the following:  
 pain or irritation  
 watering  
 redness
- Inhalation** : Adverse health effects could include the following:  
 respiratory tract irritation  
 coughing
- Skin contact** : No specific data.  
**Ingestion** : No specific data.

### Delayed and immediate effects and also chronic effects from short and long term exposure

#### Short term exposure

- Potential immediate effects** : Not available.  
**Potential delayed effects** : Not available.

#### Long term exposure

- Potential immediate effects** : Not available.  
**Potential delayed effects** : Not available.

#### Potential chronic health effects

Not available.

- Conclusion/Summary** : Not available.  
**General** : No known significant effects or critical hazards.  
**Carcinogenicity** : No known significant effects or critical hazards.  
**Mutagenicity** : No known significant effects or critical hazards.  
**Reproductive toxicity** : No known significant effects or critical hazards.

### Numerical measures of toxicity

#### Acute toxicity estimates

Not available.

## Section 12. Ecological information

### Toxicity

Product/ingredient name	Result	Species	Exposure
Zembu™ Herbicide	Acute EC50 >29 mg/l	Daphnia - <i>Daphnia magna</i>	48 hours
	Acute LC50 28 mg/l	Crustaceans - <i>Americamysis bahia</i>	96 hours
	Acute LC50 71 mg/l	Fish - <i>Rainbow Trout (Oncorhynchus mykiss)</i>	96 hours
	Acute LC50 117 mg/l	Fish - <i>Sheepshead Minnow</i>	96 hours



## Section 12. Ecological information

(Cyprinodon variegatus)

**Conclusion/Summary** : Not determined.

### Persistence and degradability

**Conclusion/Summary** : Not available.

### Bioaccumulative potential

Not available.

### Mobility in soil

**Soil/water partition coefficient (K<sub>oc</sub>)** : Not available.

**Mobility** : Not available.




**Other adverse effects** : No known significant effects or critical hazards.

## Section 13. Disposal considerations

**Disposal methods** : Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Do not contaminate water, food, or feed by storage or disposal. Open dumping is prohibited. Pesticide wastes are toxic. Improper disposal of excess pesticide, pesticide spray, or rinsate is a violation of Federal law. If these wastes cannot be disposed of by use according to label instructions, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste representative at the nearest EPA Regional Office for guidance.

**Pesticide disposal:** Wastes resulting from the use of this product must be disposed of on site or at an approved waste disposal facility.

## Section 14. Transport information

	DOT Classification	TDG Classification	Mexico Classification	ADR/RID	IMDG	IATA
<b>UN number</b>	Not regulated.	Not determined.	Not determined.	Not determined.	UN3077	UN3077
<b>UN proper shipping name</b>	Not available.	-	-	-	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.	Environmentally hazardous substance, solid, n.o.s.
<b>Transport hazard class(es)</b>	Not available.	-	-	-	9	9
<b>Label</b>					 	
<b>Packing group</b>	-	-	-	-	III	III
<b>Environmental hazards</b>	No.	-	-	-	Marine Pollutant: Yes	No.

### Additional information

## Section 14. Transport information

- IMDG** : This product is not regulated as a dangerous good when transported in sizes of ≤5 L or ≤5 kg, provided the packagings meet the general provisions of 4.1.1.1, 4.1.1.2 and 4.1.1.4 to 4.1.1.8.  
**Emergency schedules** F-A, S-F  
**Special provisions** 274, 335, 966, 967, 969
- IATA** : The environmentally hazardous substance mark may appear if required by other transportation regulations.  
**Quantity limitation** Passenger and Cargo Aircraft: 400 kg. Packaging instructions: 956. Cargo Aircraft Only: 400 kg. Packaging instructions: 956. Limited Quantities - Passenger Aircraft: 30 kg. Packaging instructions: Y956.  
**Special provisions** A97, A158, A179, A197, A215
- Special precautions for user** : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

**Transport in bulk according to IMO instruments** : Not applicable.

## Section 15. Regulatory information

**U.S. Federal regulations** : This chemical is a pesticide product registered by the United States 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 (SDS), and for workplace labels of non-pesticide chemicals. The hazard information required on the pesticide label is reproduced below. The pesticide label also includes other important information, including directions for use.

**EPA Registration Number:** 71711-63

**WARNING**

Causes substantial but temporary eye injury. DO NOT get in eyes or on clothing. Prolonged or frequently repeated skin contact may cause allergic reactions in some individuals. Avoid contact with skin. Harmful if swallowed, absorbed through skin, or inhaled. Wear protective eyewear (goggles, face shield, or safety glasses). 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 reuse.

**Clean Air Act Section 112 (b) Hazardous Air Pollutants (HAPs)** : Not listed

**Clean Air Act Section 602 Class I Substances** : Not listed

**Clean Air Act Section 602 Class II Substances** : Not listed

**DEA List I Chemicals (Precursor Chemicals)** : Not listed

**DEA List II Chemicals (Essential Chemicals)** : Not listed

**SARA 302/304**

**Composition/information on ingredients**

No products were found.

**SARA 304 RQ** : Not applicable.

**SARA 311/312**

## Section 15. Regulatory information

**Classification** : EYE IRRITATION - Category 2A

### Composition/information on ingredients

Name	%	Classification
Silica, crystalline (Quartz) (Respirable fraction)	<0.1	CARCINOGENICITY - Category 1A

### State regulations

**Massachusetts** : None of the components are listed.

**New York** : None of the components are listed.

**New Jersey** : None of the components are listed.

**Pennsylvania** : None of the components are listed.

### California Prop. 65

**⚠ WARNING:** This product can expose you to Silica, crystalline (Respirable fraction), which is known to the State of California to cause cancer. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).

Ingredient name	No significant risk level	Maximum acceptable dosage level
Silica, crystalline (Quartz) (Respirable fraction)	-	-

### International regulations

#### Chemical Weapon Convention List Schedules I, II & III Chemicals

Not listed.

#### Montreal Protocol

Not listed.

#### Stockholm Convention on Persistent Organic Pollutants

Not listed.

#### Rotterdam Convention on Prior Informed Consent (PIC)

Not listed.

#### UNECE Aarhus Protocol on POPs and Heavy Metals

Not listed.

### Inventory list

**United States** : All components are active or exempted. This product is a registered pesticide.

## Section 16. Other information

### Procedure used to derive the classification

Classification	Justification
EYE IRRITATION - Category 2A	On basis of test data

### History

**Date of printing** : 09/04/2023

**Date of issue/Date of revision** : 09/04/2023

**Date of previous issue** : No previous validation

**Version** : 1

## Section 16. Other information

**Key to abbreviations** : ADR = The European Agreement concerning the International Carriage of Dangerous Goods by Road  
ATE = Acute Toxicity Estimate  
BCF = Bioconcentration Factor  
DOT = Department of Transportation  
GHS = Globally Harmonized System of Classification and Labelling of Chemicals  
IATA = International Air Transport Association  
IBC = Intermediate Bulk Container  
IMDG = International Maritime Dangerous Goods  
LogPow = logarithm of the octanol/water partition coefficient  
MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)  
N/A = Not available  
RID = The Regulations concerning the International Carriage of Dangerous Goods by Rail  
SGG = Segregation Group  
TDG = Transportation of Dangerous Goods  
UN = United Nations

**References** : Not available.

▣ Indicates information that has changed from previously issued version.

### Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.

Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.