

**JM Two-Part Urethane Insulation Adhesive (UIA) Canister – Part 1**

Version 2.1

Revision Date 05/19/2023

Print Date 05/19/2023

**SECTION 1. PRODUCT AND COMPANY IDENTIFICATION**

Trade name : JM Two-Part Urethane Insulation Adhesive (UIA) Canister – Part 1

## Manufacturer or supplier's details

Company : Johns Manville  
Address : P.O. Box 5108  
Denver, CO USA 80217-5108  
Telephone : +1-303-978-2000  
Emergency telephone number : 24-Hour Number: +1-800-424-9300 (CHEMTREC)

Company : Johns Manville Canada Inc.  
Address : 5301 42 Avenue  
Innisfail, AB Canada T4G 1A2  
Telephone : +1-303-978-2000  
Emergency telephone number : 24-Hour Number: +1-800-424-9300 (CHEMTREC)

## Recommended use of the chemical and restrictions on use

Recommended use : Adhesives  
Restrictions on use : For professional users only.  
Prepared by : productsafety@jm.com

**SECTION 2. HAZARDS IDENTIFICATION****GHS classification in accordance with 29 CFR 1910.1200 and the Hazardous Products Regulations**

Gases under pressure : Compressed gas  
Acute toxicity (Inhalation) : Category 4  
Skin irritation : Category 2  
Eye irritation : Category 2A  
Respiratory sensitisation : Category 1  
Skin sensitisation : Category 1  
Specific target organ toxicity - single exposure : Category 3 (Respiratory system)  
Specific target organ toxicity - repeated exposure (Inhalation) : Category 1 (Respiratory system)

**GHS label elements**

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Hazard pictograms

:



Signal word

: Danger

Hazard statements

 : H280 Contains gas under pressure; may explode if heated.  
 H315 Causes skin irritation.  
 H317 May cause an allergic skin reaction.  
 H319 Causes serious eye irritation.  
 H332 Harmful if inhaled.  
 H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.  
 H335 May cause respiratory irritation.  
 H372 Causes damage to organs (Respiratory system) through prolonged or repeated exposure if inhaled.

Precautionary statements

 : **Prevention:**  
 P260 Do not breathe gas.  
 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.  
 P272 Contaminated work clothing must not be allowed out of the workplace.  
 P280 Wear protective gloves/ eye protection/ face protection.  
 P285 In case of inadequate ventilation wear respiratory protection.  
  
**Response:**  
 P302 + P352 IF ON SKIN: Wash with plenty of soap and water.  
 P304 + P340 + P312 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/ doctor if you feel unwell.  
 P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
 P333 + P313 If skin irritation or rash occurs: Get medical advice/ attention.  
 P337 + P313 If eye irritation persists: Get medical advice/ attention.  
 P342 + P311 If experiencing respiratory symptoms: Call a POISON CENTER/ doctor.  
 P362 Take off contaminated clothing and wash before reuse.  
  
**Storage:**  
 P403 + P233 Store in a well-ventilated place. Keep container tightly closed.  
 P405 Store locked up.  
 P410 + P403 Protect from sunlight. Store in a well-ventilated place.  
  
**Disposal:**  
 P501 Dispose of contents/container to an approved facility in accordance with local, regional, national and international regulations.

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**Other hazards**

None known.

**SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS**
**Chemical nature**

Mixture

**Hazardous components**

Chemical name	CAS-No.	Concentration (% w/w)
isocyanic acid, polymethylenepolyphenylene ester (part of 4,4'-methylenediphenyl diisocyanate)	9016-87-9	>= 30 - < 60
4,4'-methylenediphenyl diisocyanate	101-68-8	>= 30 - < 60

Actual concentration or concentration range is withheld as a trade secret

**Relevant ingredients**

Chemical name	CAS-No.	Concentration (% w/w)
1-propene, 1,3,3,3-tetrafluoro-, (1E)-	29118-24-9	>= 10 - < 30 %

**SECTION 4. FIRST AID MEASURES**

- General advice : Move out of dangerous area.  
 Show this safety data sheet to the doctor in attendance.  
 Do not leave the victim unattended.  
 Symptoms of poisoning may appear several hours later.
- If inhaled : Remove to fresh air immediately. Get medical attention immediately.  
 If breathing is irregular or stopped, administer artificial respiration.
- In case of skin contact : In case of contact, immediately flush eyes or skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes.  
 Call a physician if irritation develops or persists.
- In case of eye contact : Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes.  
 If easy to do, remove contact lens, if worn.  
 Protect unharmed eye.  
 If eye irritation persists, consult a specialist.
- If swallowed : DO NOT induce vomiting unless directed to do so by a physician or poison control center.  
 Gently wipe or rinse the inside of the mouth with water.  
 Never give anything by mouth to an unconscious person.  
 If symptoms persist, call a physician or Poison Control Centre immediately.
- Most important symptoms and effects, both acute and delayed : Causes skin irritation.  
 May cause an allergic skin reaction.  
 Causes serious eye irritation.  
 Harmful if inhaled.  
 May cause allergy or asthma symptoms or breathing difficulties if inhaled.  
 May cause respiratory irritation.  
 Causes damage to organs through prolonged or repeated exposure if inhaled.

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Protection of first-aiders : If potential for exposure exists refer to Section 8 for specific personal protective equipment.

**SECTION 5. FIREFIGHTING MEASURES**

Suitable extinguishing media : Water spray  
Carbon dioxide (CO<sub>2</sub>)  
Dry chemical  
Foam

Unsuitable extinguishing media : High volume water jet

Specific hazards during firefighting : The product reacts with water and generates heat.  
Contains gas under pressure; may explode if heated.  
Cool closed containers exposed to fire with water spray.

Hazardous combustion products : carbon oxides  
nitrogen oxides  
hydrogen cyanide  
isocyanates  
Hydrogen fluoride

Specific extinguishing methods : Use a water spray to cool fully closed containers.  
Remove undamaged containers from fire area if it is safe to do so.

Further information : Standard procedure for chemical fires.

Special protective equipment for firefighters : Wear self-contained breathing apparatus for firefighting if necessary.

**SECTION 6. ACCIDENTAL RELEASE MEASURES**

Personal precautions, protective equipment and emergency procedures : Use personal protective equipment.  
Ensure adequate ventilation.  
Immediately evacuate personnel to safe areas.

Environmental precautions : Prevent further leakage or spillage if safe to do so.  
The product should not be allowed to enter drains, water courses or the soil.

Methods and materials for containment and cleaning up : Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust).  
Recovered material should be stored in a vented container.  
The vent must prevent the ingress of water as further reaction with spilled materials can take place which could lead to overpressurization of the container.

**SECTION 7. HANDLING AND STORAGE**

Local/Total ventilation : Use only with adequate ventilation.

Advice on protection against fire and explosion : Use only in area provided with appropriate exhaust ventilation.

Advice on safe handling : Do not breathe gas.  
Wash skin thoroughly after handling.  
Do not eat, drink or smoke when using this product.

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- Use only outdoors or in a well-ventilated area.  
 Wear protective gloves, eye protection and face protection.  
 Contaminated work clothing must not be allowed out of the workplace.  
 In case of inadequate ventilation wear respiratory protection.  
 Persons susceptible to skin sensitisation problems or asthma, allergies, chronic or recurrent respiratory disease should not be employed in any process in which this mixture is being used.
- Conditions for safe storage : Keep containers tightly closed in a dry, cool and well-ventilated place.  
 To maintain product quality, do not store in heat or direct sunlight.
- Materials to avoid : Keep away from oxidizing agents, strongly acid or alkaline materials, as well as of amines, alcohols and water.  
 Keep away from solvents.
- Recommended storage temperature : 60 - 90 °F / 16 - 32 °C
- Further information on storage stability : Keep in a dry, cool and well-ventilated place.  
 Do not freeze.

**SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION**
**Components with workplace control parameters**

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
4,4'-methylenediphenyl diisocyanate	101-68-8	TWA	0.005 ppm	ACGIH
		TWA	0.005 ppm 0.05 mg/m <sup>3</sup>	NIOSH REL
		C	0.02 ppm 0.2 mg/m <sup>3</sup>	NIOSH REL
		C	0.02 ppm 0.2 mg/m <sup>3</sup>	OSHA

**Engineering measures** : Use a local and/or general ventilation system.

**Personal protective equipment**

Respiratory protection : General and local exhaust ventilation is recommended to maintain vapor exposures below recommended limits. 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  
 Material : Nitrile rubber

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Material	:	butyl rubber
Material	:	Neoprene
Material	:	PVC
Remarks	:	Take note of the information given by the producer concerning permeability and break through times, and of special workplace conditions (mechanical strain, duration of contact).
Eye protection	:	Wear safety glasses with side shields or goggles. Wear a faceshield or other full face protection if there is a potential for direct contact to the face with dusts, mists, or aerosols.
Skin and body protection	:	Wear protective clothing, such as long-sleeved shirts and pants. Additional body garments should be used based upon the task being performed (e.g., sleevelets, apron, gauntlets, disposable suits) to avoid exposed skin surfaces. Remove and wash contaminated clothing before re-use.
Hygiene measures	:	Ensure adequate ventilation, especially in confined areas. Handle in accordance with good industrial hygiene and safety practice. When using do not eat, drink or smoke. Wash hands before breaks and at the end of workday. Written instructions for handling must be available at the work place.

**SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES**

Appearance	:	Compressed gas
Colour	:	cream
Odour	:	aromatic
Odour Threshold	:	No data available
pH	:	Not applicable
Melting point/range	:	not determined
Boiling point/boiling range	:	Not applicable
Flash point	:	Not applicable
Evaporation rate	:	not determined
Flammability (solid, gas)	:	Not applicable
Upper explosion limit	:	not determined
Lower explosion limit	:	not determined
Vapour pressure	:	4,271 hPa (20 °C) (for a component of this mixture)
Relative vapour density	:	not determined
Relative density	:	ca. 1.23(Water = 1.0)
Density	:	ca. 1.23 g/cm <sup>3</sup>

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Solubility(ies)	
Water solubility	: Decomposes in contact with water.
Solubility in other solvents	: No data available
Partition coefficient: n-octanol/water	: No data available
Auto-ignition temperature	: No data available
Thermal decomposition	: No data available
Viscosity	
Viscosity, dynamic	: 300 mPa.s
Viscosity, kinematic	: No data available

**SECTION 10. STABILITY AND REACTIVITY**

Reactivity	: Container can be pressurized by carbon dioxide due to reaction with humid air and/or water.
Chemical stability	: Stable under normal conditions.
Possibility of hazardous reactions	: Mixture reacts slowly with water resulting in evolution of carbon dioxide. Polymerisation is a highly exothermic reaction and may generate sufficient heat to cause thermal decomposition and/or rupture containers.
Conditions to avoid	: Do not expose to temperatures above: 177 °C Exposure to moisture If contained in exposed to high heat (> 350 °F), it can be pressurized and possibly rupture. Methylene diisocyanate reacts slowly with water to form carbon dioxide gas. This gas can cause sealed container to expand and possibly rupture.
Incompatible materials	: Water Acids Bases Amines Alcohols Alkali metals Ketones
Hazardous decomposition products	: carbon oxides nitrogen oxides Isocyanates Hydrogen cyanide (hydrocyanic acid) Hydrogen fluoride

**SECTION 11. TOXICOLOGICAL INFORMATION**
**Acute toxicity**
**Product:**

Acute oral toxicity	: Acute toxicity estimate : > 2,000 mg/kg Method: Calculation method
Acute inhalation toxicity	: Acute toxicity estimate : 2.24 mg/l Exposure time: 4 h Test atmosphere: dust/mist

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Method: Calculation method

**Components:****isocyanic acid, polymethylenepolyphenylene ester (part of 4,4'-methylenediphenyl diisocyanate):**

- Acute oral toxicity : LD50 (Rat): > 2,000 mg/kg
- Acute inhalation toxicity : Assessment: The component/mixture is moderately toxic after short term inhalation.
- Acute dermal toxicity : LD50 (Rabbit, male and female): > 9,400 mg/kg  
Method: OECD Test Guideline 402

**4,4'-methylenediphenyl diisocyanate:**

- Acute oral toxicity : LD50 (Rat, male and female): > 2,000 mg/kg
- Acute inhalation toxicity : LC50 (Rat): 2.24 mg/l  
Exposure time: 1 h  
Test atmosphere: dust/mist  
Assessment: The component/mixture is moderately toxic after short term inhalation.
- Acute dermal toxicity : LD50 (Rabbit, male and female): > 9,400 mg/kg  
Method: OECD Test Guideline 402

**Skin corrosion/irritation****Components:****isocyanic acid, polymethylenepolyphenylene ester (part of 4,4'-methylenediphenyl diisocyanate):**

- Species: Rabbit  
Result: Skin irritation

**Skin corrosion/irritation****4,4'-methylenediphenyl diisocyanate:**

- Species: Rabbit  
Method: Draize Test  
Result: Mild skin irritant

- Species: Human  
Result: irritating

**Serious eye damage/eye irritation****Components:****isocyanic acid, polymethylenepolyphenylene ester (part of 4,4'-methylenediphenyl diisocyanate):**

- Species: Rabbit  
Result: Eye irritation

**Serious eye damage/eye irritation****4,4'-methylenediphenyl diisocyanate:**

- Species: Rabbit  
Result: Moderate eye irritation



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Method: Draize Test

Species: Human

Result: irritating

**Respiratory or skin sensitisation****Components:****isocyanic acid, polymethylenepolyphenylene ester (part of 4,4'-methylenediphenyl diisocyanate):**

Exposure routes: Dermal

Species: Mouse

Assessment: May cause sensitisation by skin contact.

Method: OECD Test Guideline 429

Result: positive

Exposure routes: Inhalation

Species: Guinea pig

Assessment: May cause sensitisation by inhalation.

Result: positive

**Respiratory or skin sensitisation****4,4'-methylenediphenyl diisocyanate:**

Exposure routes: Dermal

Species: Mouse

Assessment: May cause sensitisation by skin contact.

Method: OECD Test Guideline 429

Result: positive

Exposure routes: Inhalation

Species: Guinea pig

Assessment: May cause sensitisation by inhalation.

Result: positive

**IARC**

No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

**OSHA**

No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA (29 CFR 1910 Subpart Z, Toxic and Hazardous Substances).

**NTP**

No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

**STOT - single exposure****Components:****isocyanic acid, polymethylenepolyphenylene ester (part of 4,4'-methylenediphenyl diisocyanate):**

Exposure routes: Inhalation

Target Organs: Respiratory Tract

Assessment: May cause respiratory irritation.

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**STOT - single exposure****4,4'-methylenediphenyl diisocyanate:**

Exposure routes: Inhalation

Target Organs: Respiratory Tract

Assessment: May cause respiratory irritation.

**STOT - repeated exposure****Components:****isocyanic acid, polymethylenepolyphenylene ester (part of 4,4'-methylenediphenyl diisocyanate):**

Exposure routes: Inhalation

Target Organs: Respiratory system

Assessment: Causes damage to organs through prolonged or repeated exposure.

**STOT - repeated exposure****4,4'-methylenediphenyl diisocyanate:**

Exposure routes: Inhalation

Target Organs: Respiratory system

Assessment: May cause damage to organs through prolonged or repeated exposure.

**Further information****Product:**

Remarks: Contains isocyanates. May produce an allergic reaction.

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**SECTION 12. ECOLOGICAL INFORMATION****Ecotoxicity**

No data available

**Persistence and degradability**

No data available

**Bioaccumulative potential****Components:****4,4'-methylenediphenyl diisocyanate:**Partition coefficient: n- : log Pow: 4.51 (68 °F / 20 °C)  
octanol/water pH: 7**Mobility in soil**

No data available

**Other adverse effects****Product:**Ozone-Depletion Potential : Regulation: 40 CFR Protection of Environment; Part 82  
Protection of Stratospheric Ozone - CAA Section 602 Class I  
Substances

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Remarks: This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).

**SECTION 13. DISPOSAL CONSIDERATIONS**

**Disposal methods**

- Waste from residues : Dispose of contents/ container to an approved facility in accordance with local, regional, national and international regulations.
- Contaminated packaging : Empty remaining contents.  
Dispose of as unused product.  
Do not re-use empty containers.

**SECTION 14. TRANSPORT INFORMATION**

**International transport regulations**

Land transport

USDOT: UN3500, Chemical under pressure, n.o.s. (1,3,3,3-Tetrafluoropropene, Nitrogen), 2.2  
TDG: UN3500, Chemical under pressure, n.o.s. (1,3,3,3-Tetrafluoropropene, Nitrogen), 2.2

Sea transport

IMDG: UN3500, Chemical under pressure, n.o.s. (1,3,3,3-Tetrafluoropropene, Nitrogen), 2.2

Air transport

IATA/ICAO: UN3500, Chemical under pressure, n.o.s. (1,3,3,3-Tetrafluoropropene, Nitrogen), 2.2

**SECTION 15. REGULATORY INFORMATION**

**TSCA list**

TSCA - 5(a) Significant New Use Rule List of Chemicals : No substances are subject to a Significant New Use Rule.

U.S. Toxic Substances Control Act (TSCA) Section 12(b) Export Notification (40 CFR 707, Subpart D) : No substances are subject to TSCA 12(b) export notification requirements.

**EPCRA - Emergency Planning and Community Right-to-Know Act**

**CERCLA Reportable Quantity**

Components	CAS-No.	Component RQ (lbs)	Calculated product RQ (lbs)
4,4'-methylenediphenyl diisocyanate	101-68-8	5000	> 5000

**SARA 304 Extremely Hazardous Substances Reportable Quantity**

This material does not contain any components with a section 304 EHS RQ.

**SARA 311/312 Hazards** : Gases under pressure

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Acute toxicity (any route of exposure)  
 Respiratory or skin sensitisation  
 Specific target organ toxicity (single or repeated exposure)  
 Skin corrosion or irritation  
 Serious eye damage or eye irritation

**SARA 302** : This material does not contain any components with a section 302 EHS TPQ.

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

isocyanic acid,	9016-87-9	30 - 60 %
polymethylenepolyphenylene ester (part of 4,4'-methylenediphenyl diisocyanate)		

**Clean Air Act**

The following chemical(s) are listed as HAP under the U.S. Clean Air Act, Section 112 (40 CFR 61):

4,4'-methylenediphenyl diisocyanate	101-68-8	30 - 60 %
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This product does not contain any chemicals listed under the U.S. Clean Air Act Section 112(r) for Accidental Release Prevention (40 CFR 68.130, Subpart F).

The following chemical(s) are listed under the U.S. Clean Air Act Section 111 SOCM I Intermediate or Final VOC's (40 CFR 60.489):

4,4'-methylenediphenyl diisocyanate	101-68-8	30 - 60 %
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**California Prop. 65**

This product does not require a warning under the California Safe Drinking Water and Toxic Enforcement Act (Proposition 65).

**The components of this product are reported in the following inventories:**

TSCA : All substances listed as active on the TSCA inventory

DSL : On the inventory, or in compliance with the inventory

**SECTION 16. OTHER INFORMATION**
**Further information**

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**Full text of other abbreviations**

ACGIH	: USA. ACGIH Threshold Limit Values (TLV)
NIOSH REL	: USA. NIOSH Recommended Exposure Limits
OSHA	: 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
NIOSH REL / C	: Ceiling value not be exceeded at any time.
OSHA / C	: Ceiling

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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; 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

**Disclaimer**

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.