

**4922N MICROMAX™ CONDUCTOR PASTE**

Version	Revision Date:	SDS Number:	Date of last issue: 04-12-2024
8.1	07-22-2025	3000000000186	Date of first issue: 01-29-2024

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**SECTION 1. IDENTIFICATION**

Product name : 4922N MICROMAX™ CONDUCTOR PASTE

Product code : 000000000027046853

**Manufacturer or supplier's details**

Company name of supplier : Celanese Ltd. Irving Texas

Address : 222 West Las Colinas Boulevard Suite 900N  
Irving TX 75039

Telephone : '+1 972-443-4000

Emergency telephone number : DOMESTIC NORTH AMERICA: 800-424-9300  
INTERNATIONAL, CALL +1 703-527-3887 (collect calls accepted)

**Recommended use of the chemical and restrictions on use**

Recommended use : For industrial use only.  
Paste for electronic industry

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**SECTION 2. HAZARDS IDENTIFICATION****GHS classification in accordance with the OSHA Hazard Communication Standard (29 CFR 1910.1200)**

Flammable liquids : Category 3

**Other hazards**

None known.

**GHS label elements**

Hazard pictograms :



Signal word : Warning

Hazard statements : H226 Flammable liquid and vapour.

Precautionary statements : **Prevention:**  
P210 Keep away from heat/ sparks/ open flames/ hot surfaces.  
No smoking.  
P233 Keep container tightly closed.  
P240 Ground/bond container and receiving equipment.  
P241 Use explosion-proof electrical/ ventilating/ lighting equipment.  
P242 Use only non-sparking tools.  
P243 Take precautionary measures against static discharge.  
P280 Wear protective gloves/ eye protection/ face protection.

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**Response:**

P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/ shower.  
P370 + P378 In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.

**Storage:**

P403 + P235 Store in a well-ventilated place. Keep cool.

**Disposal:**

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

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

Substance / Mixture : Mixture

**Components**

Chemical name	CAS-No.	Concentration (% w/w)
Silver Powder (particle diameter >100 nm <1mm)	7440-22-4	>= 60 - < 80
1-Methoxy-2-propyl acetate	108-65-6	>= 10 - < 30

The specific chemical identity and/or exact percentage (concentration) of composition has been withheld as a trade secret.

**SECTION 4. FIRST AID MEASURES**

If inhaled	: If inhaled, remove to fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Get medical attention.
In case of skin contact	: Wash off with soap and water. Get medical attention if irritation develops and persists. Wash contaminated clothing before re-use.
In case of eye contact	: Immediately flush eyes for at least 15 minutes. Get medical attention.
If swallowed	: If swallowed Rinse mouth with water. Call a physician or poison control centre immediately. DO NOT induce vomiting unless directed to do so by a

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physician or poison control center.

Most important symptoms and effects, both acute and delayed : None known.

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**SECTION 5. FIREFIGHTING MEASURES**

Suitable extinguishing media : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Dry sand  
Dry chemical  
Alcohol-resistant foam

Specific hazards during firefighting : Hazardous decomposition products formed under fire conditions.  
(see also section 10)  
Avoid breathing decomposition products.

Further information : Evacuate personnel to safe areas.  
Stop spill/release if it can be done with minimal risk.  
Do not allow run-off from fire fighting to enter drains or water courses.

Special protective equipment for firefighters : Exposure to decomposition products may be a hazard to health.  
Wear self-contained breathing apparatus for firefighting if necessary.

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**SECTION 6. ACCIDENTAL RELEASE MEASURES**

Personal precautions, protective equipment and emergency procedures : Avoid contact with skin, eyes and clothing.  
Ensure adequate ventilation.  
Wear suitable protective equipment.  
Dispose of in accordance with local regulations.

Environmental precautions : Prevent further leakage or spillage if safe to do so.  
Prevent product from entering drains.  
Clean contaminated floors and objects thoroughly while observing environmental regulations.

Methods and materials for containment and cleaning up : Contain spill.  
Soak up with inert absorbent material.  
Collect and contain contaminated absorbent and dike material for disposal.  
Keep in suitable, closed containers for disposal.  
Ventilate the area.  
Clean contaminated surface thoroughly.

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**SECTION 7. HANDLING AND STORAGE**

- Advice on protection against fire and explosion : Avoid formation of dust and aerosols.  
Keep away from heat and sources of ignition.  
Take measures to prevent the build up of electrostatic charge.  
Static charges can cause explosions in solvent and dust laden atmospheres.
- Advice on safe handling : Avoid inhalation, ingestion and contact with skin and eyes.  
Do not use in areas without adequate ventilation.  
Keep container closed when not in use.  
Take care to avoid waste and spillage when weighing, loading and mixing the product.
- Conditions for safe storage : Store in original container.  
Keep containers tightly closed in a dry, cool and well-ventilated place.  
Keep away from sources of ignition - No smoking.  
Do not store or consume food, drink or tobacco in areas where they may become contaminated with this material.  
Keep container closed when not in use.  
Do not reuse empty container.
- Further information on storage stability : Stable under normal conditions.

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

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
Silver Powder (particle diameter >100 nm <1mm)	7440-22-4	TWA (Dust and fume)	0.1 mg/m <sup>3</sup>	ACGIH
		TWA (Dust)	0.01 mg/m <sup>3</sup>	NIOSH REL
		TWA	0.01 mg/m <sup>3</sup>	OSHA P0
1-Methoxy-2-propyl acetate	108-65-6	TWA	50 ppm	US WEEL

- Engineering measures** : Local exhaust or a laboratory hood should be used when handling the materials.  
Maintain air concentrations below occupational exposure standards.

**Personal protective equipment**

- Respiratory protection : Provide adequate ventilation.  
No personal respiratory protective equipment normally required.  
Where there is potential for airborne exposures in excess of applicable limits, wear approved respiratory protection with dust/mist cartridge.  
When workers are facing concentrations above the exposure

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limit they must use appropriate certified respirators. Consult the respirator manufacturer to determine the appropriate type of equipment for a given application. Observe respirator use limitations specified by the manufacturer.

Persons performing maintenance or repairs on exhaust system equipment (e.g. ducts) may need to use respirators and protective clothing to prevent exposure to any accumulated residues.

**Hand protection**

Material : Impervious gloves

Remarks : Gloves must be inspected prior to use. Gloves should be discarded and replaced if there is any indication of degradation or chemical breakthrough. 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. The exact break through time can be obtained from the protective glove producer and this has to be observed. 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.

Eye protection : Wear safety glasses with side shields.

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.  
Lightweight protective clothing  
Safety shoes

Hygiene measures : Handle in accordance with good industrial hygiene and safety practice.  
Avoid contact with skin, eyes and clothing.  
Contaminated work clothing should not be allowed out of the workplace.  
Remove contaminated clothing and protective equipment before entering eating areas.  
Remove and wash contaminated clothing before re-use.

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**SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES**

Appearance : viscous liquid

Colour : grey

Odour : acrylic-like

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pH : Substance/mixture is non-polar/aprotic.

Flash point : 124 °F / 51 °C  
Method: closed cup

Density : 3 g/cm<sup>3</sup> (68 °F / 20 °C)

Solubility(ies)  
Water solubility : slightly soluble (68 °F / 20 °C)

Viscosity  
Viscosity, kinematic : > 20.5 mm<sup>2</sup>/s (104 °F / 40 °C)  
estimated

**SECTION 10. STABILITY AND REACTIVITY**

Possibility of hazardous reactions : Polymerization will not occur.  
Stable at normal temperatures and storage conditions.

Conditions to avoid : Heat, flames and sparks.

Incompatible materials : Acids

Hazardous decomposition products : No decomposition if stored and applied as directed.

Under fire conditions:

Carbon monoxide, carbon dioxide and unburned hydrocarbons (smoke).  
Metal oxides

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

Not classified due to lack of data.

**Components:****Silver Powder (particle diameter >100 nm <1mm):**

Acute oral toxicity : LD50 (Rat): > 2,000 mg/kg  
Method: OECD Test Guideline 401  
Assessment: The substance or mixture has no acute oral toxicity

Acute inhalation toxicity : LC50 (Rat): > 5.16 mg/l  
Exposure time: 4 h  
Test atmosphere: dust/mist  
Method: OECD Test Guideline 436  
Assessment: The substance or mixture has no acute inhalation toxicity

Acute dermal toxicity : LD50 (Rat): > 2,000 mg/kg

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Method: OECD Test Guideline 402  
Assessment: The substance or mixture has no acute dermal toxicity

**1-Methoxy-2-propyl acetate:**

Acute oral toxicity : LD50 (Rat): 8,532 mg/kg  
Method: US EPA Test Guideline OPP 81-1

Acute inhalation toxicity : LC50 (Rat): > 35.2 mg/l  
Exposure time: 4 h  
Test atmosphere: vapour  
Method: OECD Test Guideline 403  
Assessment: The substance or mixture has no acute inhalation toxicity

Acute dermal toxicity : LD50 (Rabbit): > 5,000 mg/kg  
Method: OECD Test Guideline 402  
Assessment: The substance or mixture has no acute dermal toxicity

**Skin corrosion/irritation**

Not classified due to lack of data.

**Components:****Silver Powder (particle diameter >100 nm <1mm):**

Species : Rabbit  
Assessment : No skin irritation  
Method : OECD Test Guideline 404  
Result : Slight or no skin irritation  
Remarks : Minimal effects that do not meet the threshold for classification.

**1-Methoxy-2-propyl acetate:**

Species : Rabbit  
Assessment : Not classified as irritant  
Method : OECD Test Guideline 404  
Result : No skin irritation

**Serious eye damage/eye irritation**

Not classified due to lack of data.

**Components:****Silver Powder (particle diameter >100 nm <1mm):**

Species : Rabbit  
Result : No eye irritation  
Assessment : No eye irritation  
Method : OECD Test Guideline 405

**1-Methoxy-2-propyl acetate:**

Species : Rabbit  
Result : No eye irritation

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Assessment	:	Not classified as irritant
Method	:	OECD Test Guideline 405

**Respiratory or skin sensitisation****Skin sensitisation**

Not classified due to lack of data.

**Respiratory sensitisation**

Not classified due to lack of data.

**Components:****Silver Powder (particle diameter >100 nm <1mm):**

Species	:	Guinea pig
Assessment	:	Does not cause skin sensitisation.
Method	:	US EPA Test Guideline OPPTS 870.2600
Result	:	Does not cause skin sensitisation.
Remarks	:	Information given is based on data obtained from similar substances.

**1-Methoxy-2-propyl acetate:**

Species	:	Guinea pig
Assessment	:	Does not cause skin sensitisation.
Method	:	OECD Test Guideline 406
Result	:	Does not cause skin sensitisation.

**Germ cell mutagenicity**

Not classified due to lack of data.

**Components:****1-Methoxy-2-propyl acetate:**

Germ cell mutagenicity - Assessment	:	Tests on bacterial or mammalian cell cultures did not show mutagenic effects.
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**Carcinogenicity**

Not classified due to lack of data.

**Components:****1-Methoxy-2-propyl acetate:**

Carcinogenicity - Assessment	:	Not classifiable as a human carcinogen., Animal testing did not show any carcinogenic effects., Information given is based on data obtained from similar substances.
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<b>IARC</b>	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.
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<b>OSHA</b>	No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.
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<b>NTP</b>	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.
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**Reproductive toxicity**

Not classified due to lack of data.

**Components:****1-Methoxy-2-propyl acetate:**

Reproductive toxicity - Assessment : No toxicity to reproduction, Animal testing showed effects on reproduction at levels equal to or above those causing parental toxicity., Information given is based on data obtained from similar substances.  
Evidence suggests the substance is not a developmental toxin in animals., Information given is based on data obtained from similar substances.

**STOT - single exposure**

Not classified due to lack of data.

**Components:****1-Methoxy-2-propyl acetate:**

Exposure routes : Oral  
Target Organs : Central nervous system  
Assessment : The substance or mixture is classified as specific target organ toxicant, single exposure, category 3 with narcotic effects.

**STOT - repeated exposure**

Not classified due to lack of data.

**Components:****1-Methoxy-2-propyl acetate:**

Assessment : The substance or mixture is not classified as specific target organ toxicant, repeated exposure.

**Repeated dose toxicity****Components:****1-Methoxy-2-propyl acetate:**

Species : Rat  
Application Route : Inhalation  
Test atmosphere : vapour  
Exposure time : 24 Months  
Remarks : No toxicologically significant effects were found.  
Information given is based on data obtained from similar substances.

Species : Rabbit  
Application Route : Dermal  
Exposure time : 21 d  
Method : OECD Test Guideline 410  
Remarks : No toxicologically significant effects were found.  
Information given is based on data obtained from similar substances.

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**Aspiration toxicity**

Not classified due to lack of data.

**Components:****Silver Powder (particle diameter >100 nm <1mm):**

No aspiration toxicity classification

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**SECTION 12. ECOLOGICAL INFORMATION****Ecotoxicity****Components:****Silver Powder (particle diameter >100 nm <1mm):**

Toxicity to fish : LC50 (Pimephales promelas (fathead minnow)): 0.016 mg/l  
Exposure time: 96 h  
Remarks: Information given is based on data obtained from similar substances.

Toxicity to daphnia and other : EC50 (Daphnia magna (Water flea)): 0.0125 mg/l  
aquatic invertebrates Exposure time: 48 h  
Remarks: Information given is based on data obtained from similar substances.

Toxicity to algae/aquatic : EC50 (Pseudokirchneriella subcapitata (green algae)): 0.19  
plants mg/l  
Exposure time: 96 h  
Remarks: Information given is based on data obtained from similar substances.

EC10 (Pseudokirchneriella subcapitata (green algae)):  
0.03462 mg/l  
Exposure time: 72 h  
Remarks: Information given is based on data obtained from similar substances.

Toxicity to fish (Chronic : NOEC (Oncorhynchus mykiss (rainbow trout)): 0.0012 mg/l  
toxicity) Exposure time: 32 d  
Remarks: Information given is based on data obtained from similar substances.

Toxicity to daphnia and other : NOEC (Daphnia magna (Water flea)): 0.00327 mg/l  
aquatic invertebrates Exposure time: 21 d  
(Chronic toxicity) Remarks: Information given is based on data obtained from similar substances.

**Ecotoxicology Assessment**

Acute aquatic toxicity : Very toxic to aquatic life.

Chronic aquatic toxicity : Very toxic to aquatic life with long lasting effects.

**1-Methoxy-2-propyl acetate:**

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): &gt; 100 mg/l

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Exposure time: 96 h  
Method: OECD Test Guideline 203

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): > 500 mg/l  
Exposure time: 48 h

Toxicity to algae/aquatic plants : ErC50 (Pseudokirchneriella subcapitata (green algae)): > 1,000 mg/l  
Exposure time: 96 h  
Method: OECD Test Guideline 201

NOEC (Pseudokirchneriella subcapitata (green algae)): > 1,000 mg/l  
Exposure time: 96 h  
Method: OECD Test Guideline 201

Toxicity to fish (Chronic toxicity) : NOEC (Oryzias latipes (Orange-red killifish)): 47.5 mg/l  
Exposure time: 14 d  
Method: OECD Test Guideline 204

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC (Daphnia magna (Water flea)): > 100 mg/l  
Exposure time: 21 d  
Method: OECD Test Guideline 211

**Ecotoxicology Assessment**

Acute aquatic toxicity : This product has no known ecotoxicological effects.

Chronic aquatic toxicity : This product has no known ecotoxicological effects.

**Persistence and degradability****Components:****1-Methoxy-2-propyl acetate:**

Biodegradability : Result: Biodegradable  
Method: OECD Test Guideline 301  
Remarks: Readily biodegradable.

**Bioaccumulative potential****Components:****Silver Powder (particle diameter >100 nm <1mm):**

Bioaccumulation : Remarks: Bioaccumulation is unlikely.  
Information given is based on data obtained from similar substances.

Partition coefficient: n-octanol/water : Remarks: Not applicable

**1-Methoxy-2-propyl acetate:**

Bioaccumulation : Remarks: Bioaccumulation is unlikely.

Partition coefficient: n- : log Pow: 1.2 (68 °F / 20 °C)

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octanol/water

pH: 6.8

Method: High-performance liquid chromatography

**Mobility in soil**

No data available

**Other adverse effects****Product:**

Additional ecological information : No data is available on the product itself.

**SECTION 13. DISPOSAL CONSIDERATIONS****Disposal methods**

Waste from residues : If recycling is not practicable, dispose of in compliance with local regulations.  
Do not reuse empty container. Never place unused product down any indoor or out door drain.  
Contaminated/not cleaned containers should be treated/handled like product waste. Dispose of container properly. Refer to applicable Local, State/Provincial, and Federal Regulations, as well as industry Standards.

**SECTION 14. TRANSPORT INFORMATION****International Regulations****UNRTDG**

UN number : UN 1993  
Proper shipping name : FLAMMABLE LIQUID, N.O.S.  
Class : 3  
Packing group : III  
Labels : 3  
Environmentally hazardous : no

**IATA-DGR**

UN/ID No. : UN 1993  
Proper shipping name : Flammable liquid, n.o.s.  
(1-Methoxy-2-propyl acetate)  
Class : 3  
Packing group : III  
Labels : Flammable Liquids  
Packing instruction (cargo aircraft) : 366  
Packing instruction (passenger aircraft) : 355

**IMDG-Code**

UN number : UN 1993  
Proper shipping name : FLAMMABLE LIQUID, N.O.S.  
(1-Methoxy-2-propyl acetate)  
Class : 3  
Packing group : III  
Labels : 3

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EmS Code : F-E, S-E  
Marine pollutant : no

**Transport in bulk according to IMO instruments**

Not applicable for product as supplied.

**National Regulations****49 CFR**

UN/ID/NA number : UN 1993  
Proper shipping name : Flammable liquid, n.o.s.  
(1-Methoxy-2-propyl acetate)  
Class : 3  
Packing group : III  
Labels : FLAMMABLE LIQUID  
ERG Code : 128  
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.

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**SECTION 15. REGULATORY INFORMATION**

**SARA 311/312 Hazards** : Flammable (gases, aerosols, liquids, or solids)

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

Silver Powder 7440-22-4  
(particle diameter  
>100 nm <1mm)

**California Prop. 65**

This product does not contain any substances requiring a warning under the Safe Drinking Water and Toxic Enforcement Act.

**TSCA list**

In compliance with TSCA-active Inventory requirements for commercial purposes.

No substances are subject to a Significant New Use Rule.

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

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**SECTION 16. OTHER INFORMATION****Full text of other abbreviations**

ACGIH : USA. ACGIH Threshold Limit Values (TLV)  
NIOSH REL : USA. NIOSH Recommended Exposure Limits  
OSHA P0 : USA. Table Z-1-A Limits for Air Contaminants (1989 vacated values)

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US WEEL	:	USA. Workplace Environmental Exposure Levels (WEEL)
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
US WEEL / TWA	:	8-hr TWA

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

Revision Date : 07-22-2025

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 / EN

