SAFETY DATA SHEET

according to the OSHA Hazard Communication Standard

PERODOX 101

Version	Reversion Date	Market/LAN./Code	Date of last issue:01/07/2025
4.15	04/15/2025	U.S./EN/500W	Date of first issue:04/25/2017

SECTION 1. IDENTIFICATION

Product name : PERODOX 101

Manufacturer or supplier's details

Company name of supplier : Shandong Do Sender Chemicals Co.,Ltd.
Room 1007, South Office Building, Jinshi International Plaza, No. 157, Jinggangshan Road,
Huangdao District, Qingdao, Shandong Province.
CN

Telephone : +86 532 8591 3578

E-mail address : msds@dosenderchem.com.cn

Emergency telephone : +86 532 8388 9090

Recommended use of the chemical and restrictions on use

Recommended use : Polymerization initiator
Cross-linking agent

SECTION 2. HAZARDS IDENTIFICATION

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

Flammable liquids : Category 4

Organic peroxides : Type C

Skin sensitization : Category 2

aquatic hazard

GHS label elements

Hazard pictograms :

Signal Word : Danger

Hazard Statements : H227 Combustible liquid.
H242 Heating may cause a fire.
H315 Causes skin irritation.

Precautionary Statements :

Prevention:

P210 Keep away from heat/ sparks/ open flames/ hot surfaces.
No smoking.
P220 Keep/Store away from clothing/ combustible materials.
P234 Keep only in original container.
P264 Wash skin thoroughly after handling.
P280 Wear protective gloves/ eye protection/ face protection.

Response:

P302 + P352 IF ON SKIN: Wash with plenty of soap and water
P332 + P313 If skin irritation occurs: Get medical advice/ attention.
P362 Take off contaminated clothing and wash before reuse.
P370 + P378 In case of fire: Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide to extinguish.

Storage:

P403 + P235 Store in a well-ventilated place. Keep cool.
P410 Protect from sunlight.
P420 Store away from other materials.

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

Other hazards
None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture	: Substance
Substance name	: Di-tert-butyl 1,1,4,4-tetramethyltetramethylene diperoxide
CAS-No.	: 78-63-7
Synonyms	Di-tert-butyl 1,1,4,4-tetramethyltetramethylene diperoxide

Components

Chemical name	CAS No./ Unique ID	Concentration (% w/w)
2,5-Dimethyl-2,5-di(tertbutylperoxy)hexane	78-63-7	>= 92 - <= 100

SECTION 4. FIRST AID MEASURES

General advice	: Move out of dangerous area. Consult a physician. Show this material safety data sheet to the doctor in attendance.
If inhaled	: If breathed in, move person into fresh air. Consult a physician after significant exposure.
In case of skin contact	: Take off contaminated clothing and shoes immediately Rinse immediately with plenty of water. If skin irritation persists, call a physician.
In case of eye contact	: Rinse with plenty of water. Remove contact lenses. Protect unharmed eye. Keep eye wide open while rinsing If eye irritation persists, consult a specialist
If swallowed	: Clean mouth with water and drink afterwards plenty of water. Never give anything by mouth to an unconscious person. Obtain medical attention.
Most important symptoms and effects, both acute and delayed	: The symptoms and effects are as expected from the hazards as shown in section 2. No specific product related symptoms are known. Causes skin irritation.
Notes to physician	: Treat symptomatically.

SECTION 5. FIRE-FIGHTING MEASURES

Suitable extinguishing media	: Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.
Unsuitable extinguishing media	High volume water jet
Specific hazards during fire fighting	: CAUTION: reignition may occur. Supports combustion. Do not use a solid water stream as it may scatter and spread fire. Water spray may be ineffective unless used by experienced firefighters. Do not allow run-off from fire fighting to enter drains or water courses. Hazardous decomposition products formed under fire conditions.

Hazardous combustion products	: Fire will produce smoke containing hazardous combustion products (see section 10).
Further information	: Use water spray to cool unopened containers. Collect contaminated fire extinguishing water separately. This must not be discharged into drains. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.
Special protective equipment for fire-fighters	: In the event of fire, wear self-contained breathing apparatus.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures	: Use personal protective equipment. Ensure adequate ventilation. Remove all sources of ignition. Beware of vapors accumulating to form explosive concentrations. Vapors can accumulate in low areas. Evacuate personnel to safe areas. Only qualified personnel equipped with suitable protective equipment may intervene. Prevent unauthorized persons entering the zone.
Environmental precautions	: Prevent product from entering drains
Methods and materials for containment and cleaning up	: Soak up with inert absorbent material and dispose of as hazardous waste. Use only inert inorganic material such as vermiculite or perlite as absorbent. Keep mixture of absorbent material and spilled product wetted with water. Confinement must be avoided. Never return spills in original containers for re-use.

SECTION 7. HANDLING AND STORAGE

Advice on protection against fire and explosion	: Use explosion protected equipment. Avoid formation of aerosol. Keep away from sources of ignition - No smoking. No sparking tools should be used. Keep away from reducing agents (e.g. amines), acids, alkalies and heavy metal compounds (e.g. accelerators, driers, metal soaps). Do not cut or weld on or near this container even when empty. Take measures to prevent the build up of electrostatic charge. Keep away from combustible material.
Advice on safe handling	: For personal protection see section 8. Avoid contact with skin, eyes and clothing. Smoking, eating and drinking should be prohibited in the application area. Open drum carefully as content may be under pressure.
Conditions for safe storage	: No smoking. Keep in a well-ventilated place. Electrical installations / working materials must comply with the technological safety standards. Keep only in original container. Store away from other materials.
Further information on storage stability	: If product freezes or separates, contact the manufacturer. Maximum storage temperature is for quality only.
Minimum storage temperature	: Avoid temperatures below: 10 °C (50 °F)

Maximum storage temperature : 40 °C (104 °F)

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Ingredients with workplace control parameters
Contains no substances with occupational exposure limit values.
Occupational exposure limits of decomposition products

Components	CAS No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
tert-Butanol	75-65-0	TWA	100 ppm	ACGIH
		TWA	100 ppm 300 mg/m3	NIOSH REL
		ST	150 ppm 450 mg/m3	NIOSH REL
		TWA	100 ppm 300 mg/m3	OSHA Z-1
		TWA	100 ppm 300 mg/m3	OSHA P0
		STEL	150 ppm 450 mg/m3	OSHA P0
Acetone	67-64-1	TWA	250 ppm	ACGIH
		STEL	500 ppm	ACGIH
		TWA	250 ppm 590 mg/m3	NIOSH REL
		TWA	250 ppm	ACGIH
		TWA	1,000 ppm 2,400 mg/m3	OSHA Z-1
		STEL	500 ppm	ACGIH
		STEL	1,000 ppm 2,400 mg/m3	OSHA P0
		TWA	750 ppm 1,800 mg/m3	OSHA P0
Ethane	74-84-0	TWA	0.1 mg/m3 (Formaldehyde)	OSHA P0
		TWA	0.1 mg/m3 (Formaldehyde)	NIOSH REL

Engineering measures : Explosion proof ventilation recommended.
Provide appropriate exhaust ventilation at places where dust is formed.

Personal protective equipment
Respiratory protection : In the case of vapor or aerosol formation use a respirator with an approved filter.
Filter A

Hand protection Material
Material : Neoprene
Material : Nitrile rubber
Eye protection : Tightly fitting safety goggles

Skin and body protection : Protective suit
Hygiene measures : Handle in accordance with good industrial hygiene and safety practice.
Wash hands before breaks and at the end of workday.
When using do not eat or drink.
When using do not smoke.
Wash hands before breaks and at the end of workday.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance : liquid

Color	: light yellow, clear
Odor	: characteristic
Odor Threshold	: No data available
pH	: Not applicable
Melting point	: 34 - 50 °F / 1 - 10 °C
Boiling point/boiling range	: Decomposes below the boiling point.
Flash point	: 154 °F / 68 °C (1,013 hPa)
Evaporation rate	: Not applicable
Flammability (liquids)	: Combustible liquid. Remarks: Decomposition products may be flammable.
Upper explosion limit / Upper flammability limit	: No data available
Lower explosion limit / Lower flammability limit	: No data available
Vapor pressure	: < 0.01 hPa (68 °F / 20 °C)
Relative vapor density	: No data available
Relative density	: 0.872 (68 °F / 20 °C)
Solubility(ies)	
Water solubility	: immiscible
Solubility in other solvents	: soluble Solvent: organic solvent
Partition coefficient: noctanol/water	: log Pow: 7.34 (68 °F / 20 °C)
Autoignition temperature	: Test method not applicable
Decomposition temperature	: SADT - (Self accelerating decomposition temperature) is the lowest temperature at which self accelerating decomposition may occur with a substance in the packaging as used in transport. A dangerous self-accelerating decomposition reaction and, under certain circumstances, explosion or fire can be caused by thermal decomposition at and above the SADT. Contact with incompatible substances can cause decomposition below the SADT.
Self-Accelerating decomposition temperature (SADT)	: 176 °F / 80 °C
Viscosity	
Viscosity, dynamic	: 7.35 mPa.s (68 °F / 20 °C)
Viscosity, kinematic	: 8.54 mm2/s (68 °F / 20 °C)
Explosive properties	: Not explosive
Oxidizing properties	: The substance or mixture is not classified as oxidizing.
Active Oxygen Content	10.14 %
Organic peroxides	: > 92 %

SECTION 10. STABILITY AND REACTIVITY

Reactivity	: Stable under normal conditions.
Chemical stability	: Stable under recommended storage conditions.
Possibility of hazardous reactions	: No dangerous reaction known under conditions of normal use.
Conditions to avoid	: Confinement must be avoided. Heat, flames and sparks.
Incompatible materials	: Contact with the following incompatible materials will result in hazardous decomposition: Acids and bases Iron Copper Reducing agents Heavy metals Rust Do not mix with peroxide accelerators, unless under controlled processing. Use only stainless steel 316, PP, polyethylene or glass-lined equipment. For queries regarding the suitability of other materials please contact the supplier.
Hazardous decomposition products	: No decomposition if stored and applied as directed.
Hazardous decomposition products	: tert-Butanol Acetone Methane Ethane Carbon oxides
Thermal decomposition	: SADT - (Self accelerating decomposition temperature) is the lowest temperature at which self accelerating decomposition may occur with a substance in the packaging as used in transport. A dangerous self-accelerating decomposition reaction and, under certain circumstances, explosion or fire can be caused by thermal decomposition at and above the SADT. Contact with incompatible substances can cause decomposition below the SADT.
Self-Accelerating decomposition temperature (SADT)	: 80 °C

SECTION 11. TOXICOLOGICAL INFORMATION

Acute toxicity
Not classified due to lack of data.

Product:

Acute oral toxicity	: Assessment: The substance or mixture has no acute oral toxicity
Acute inhalation toxicity	: Assessment: The substance or mixture has no acute inhalation toxicity
Acute dermal toxicity	: Acute toxicity estimate: 2,640 mg/kg Method: Calculation method

Components:
2,5-Dimethyl-2,5-di(tert-butylperoxy)hexane:

Acute oral toxicity	: LD50 (Rat, male and female): > 2,000 mg/kg Method: OECD Test Guideline 401 GLP: yes LD50 (Rat, male and female): > 32,000 mg/kg Method: OECD Test Guideline 401 Assessment: The substance or mixture has no acute oral toxicity
Acute dermal toxicity	: LD50 (Rat, male): 2,800 - 5,400 mg/kg

Method: OECD Test Guideline 402

Skin corrosion/irritation
Causes skin irritation.

Components:
2,5-Dimethyl-2,5-di(tert-butylperoxy)hexane:

Species	: Rabbit
Exposure time	: 4 h
Method	: OECD Test Guideline 404
Result	: Severe skin irritation
GLP	: yes

Serious eye damage/eye irritation
Not classified due to lack of data.

Components:
2,5-Dimethyl-2,5-di(tert-butylperoxy)hexane:

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

Respiratory or skin sensitization

Skin sensitization
Not classified due to lack of data

Respiratory sensitization
Not classified due to lack of data.

Components:
2,5-Dimethyl-2,5-di(tert-butylperoxy)hexane:

Test Type	: Maximization Test
Species	Guinea pig
Assessment	Does not cause skin sensitization.
Method	OECD Test Guideline 406
GLP	yes

Germ cell mutagenicity
Not classified due to lack of data.

Components:
2,5-Dimethyl-2,5-di(tert-butylperoxy)hexane:

Genotoxicity in vitro	: Test Type: Chromosome aberration test in vitro Test system: mouse lymphoma cells Metabolic activation: with and without metabolic activation Method: OECD Test Guideline 476 Result: negative GLP: yes
Genotoxicity in vivo	: Test Type: In vivo micronucleus test Species: Mouse (male and female) Application Route: Oral Method: OECD Test Guideline 474 Result: negative GLP: yes

Carcinogenicity
Not classified due to lack of data.

IARC No ingredient 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 on OSHA's list of regulated carcinogens.

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

Reproductive toxicity
Not classified due to lack of data.
Components:
2,5-Dimethyl-2,5-di(tert-butylperoxy)hexane:
Effects on fetal development : Species: Rat
Strain: Sprague-Dawley
Application Route: Oral
General Toxicity Maternal: NOAEL: 300 mg/kg bw/day
Developmental Toxicity: NOAEL F1: 300 mg/kg bw/day
Method: OECD Test Guideline 414
GLP: yes

STOT-single exposure
Not classified due to lack of data.
STOT-repeated exposure
Not classified due to lack of data.

Repeated dose toxicity

Components:
2,5-Dimethyl-2,5-di(tert-butylperoxy)hexane:

Species	: Rat, male and female
NOAEL	: 150 mg/kg bw/day
Application Route	: Oral
Exposure time	: 90 d
Method	: OECD Test Guideline 408
GLP	: yes

Species	: Rat, male and female
NOAEL	: 200 mg/kg bw/day
Application Route	: Oral
Exposure time	: 28 d
Method	: OECD Test Guideline 407
GLP	: yes

Aspiration toxicity
Not classified due to lack of data.

Further information
Product:
Remarks : No further data available.

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity
Product:
Toxicity to fish : LC50 (Oryzias latipes (Japanese medaka)): 4.5 mg/l
Exposure time: 96 h
Test Type: semi-static test
Method: OECD Test Guideline 203
GLP: yes
Remarks: No toxicity at the limit of solubility.

Toxicity to algae/ : EC50 (Pseudokirchneriella subcapitata (green algae)): > 236

aquatic plants	Exposure time: 72 h Test Type: Growth inhibition Analytical monitoring: yes Method: OECD Test Guideline 201 GLP: yes Remarks: No toxicity at the limit of solubility.
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	: NOEC (Daphnia magna (Water flea)): > 6.5 End point: reproduction rate Exposure time: 21 d Test Type: semi-static test Analytical monitoring: yes Method: OECD Test Guideline 211 GLP: yes Remarks: No toxicity at the limit of solubility.
Toxicity to microorganisms	: NOEC (activated sludge): > 1,000 mg/l Exposure time: 3 h Test Type: Respiration inhibition Method: OECD Test Guideline 209 GLP: yes Remarks: No toxicity at the limit of solubility.

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:

2,5-Dimethyl-2,5-di(tert-butylperoxy)hexane:

Biodegradability	: Ready biodegradability Inoculum: activated sludge, non-adapted Concentration: 1 mg/l Result: Not readily biodegradable. Biodegradation: 0 % Exposure time: 28 d Method: OECD Test Guideline 301D

Bioaccumulative potential

Components:

2,5-Dimethyl-2,5-di(tert-butylperoxy)hexane:

Bioaccumulation	: Bioconcentration factor (BCF): 521 - 839 GLP: yes
Partition coefficient: noctanol/water	: log Pow: 7.34 (68 °F / 20 °C)

Mobility in soil

No data available

Other adverse effects

Product:

Results of PBT and vPvB assessment	: Not classified as PBT or vPvB
Ozone-Depletion Potential	: Regulation: 40 CFR Protection of Environment; Part 82 Protection of Stratospheric Ozone - CAA Section 602 Class I Substances 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).
Additional ecological	: None known.

information

Components:
2,5-Dimethyl-2,5-di(tert-butylperoxy)hexane:

Results of PBT and vPvB assessment	: Not classified as PBT or vPvB
Ozone-Depletion Potential	

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

Waste from residues	: Do not dispose of waste into sewer. Do not contaminate ponds, waterways or ditches with chemical or used container. Dispose of contents/container in accordance with local regulation.
Contaminated packaging	: Empty remaining contents. Dispose of as unused product. Do not burn, or use a cutting torch on, the empty drum. Due to the high risk of contamination recycling/recovery is not recommended. Follow all warnings even after the container is emptied.

SECTION 14. TRANSPORT INFORMATION

International Regulations

UNRTDG

UN number	: UN 3103
Proper shipping name	: ORGANIC PEROXIDE TYPE C, LIQUID (2,5-Dimethyl-2,5-di(tert-butylperoxy)hexane, >92%)
Class	: 5.2
Packing group	: Not assigned by regulation
Labels	: 5.2
Environmentally hazardous	no

IATA-DGR

UN/ID No.	: UN 3103
Proper shipping name	: ORGANIC PEROXIDE TYPE C, LIQUID (2,5-Dimethyl-2,5-di(tert-butylperoxy)hexane, >92%)
Class	: 5.2
Packing group	: Not assigned by regulation
Labels	: Organic Peroxides, Keep Away From Heat
Packing instruction (cargo aircraft)	: 570
Packing instruction (passenger aircraft)	: 570

IMDG-Code

UN number	: UN 3103
Proper shipping name	: ORGANIC PEROXIDE TYPE C, LIQUID (2,5-Dimethyl-2,5-di(tert-butylperoxy)hexane, >92%)
Class	: 5.2
Packing group	: Not assigned by regulation
Labels	: 5.2
EmS Code	: F-J, S-R
Marine pollutant	: no

Transport in bulk according to IMO instruments
Not applicable for product as supplied.

Domestic regulation
49 CFR

UN/ID/NA number	: UN 3103
Proper shipping name	: ORGANIC PEROXIDE TYPE C, LIQUID (2,5-Dimethyl-2,5-di(tert-butylperoxy)hexane, >92%)

Class	: 5.2
Packing group	: Not assigned by regulation
Labels	: ORGANIC PEROXIDE
ERG Code	: 146
Marine pollutant	: no
Reportable Quantity	: This product does not contain an environmentally hazardous substance per 49 CFR 172.101, Appendix A.

Special precautions for user
The transport classification(s) provided herein are for informational purposes only. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

SECTION 15. REGULATORY INFORMATION

CERCLA Reportable Quantity
This material does not contain any components with a CERCLA RQ.
SARA 304 Extremely Hazardous Substances Reportable Quantity
This material does not contain any components with a section 304 EHS RQ.
SARA 302 Extremely Hazardous Substances Threshold Planning Quantity
This material does not contain any components with a section 302 EHS TPQ.

SARA 311/312 Hazards	: Flammable (gases, aerosols, liquids, or solids) Organic peroxides Skin corrosion or irritation
SARA 313	: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

Clean Air Act
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).
This product does not contain any hazardous air pollutants (HAP), as defined by the U.S. Clean Air Act Section 112 (40 CFR 61).
This product does not contain any chemicals subject to disclosure and listed under the U.S.
Clean Air Act Section 112(r) for Accidental Release Prevention (40 CFR 68.130, Subpart F).F).
This product does not contain any chemicals listed under the U.S. Clean Air Act Section 111 SOCMI Intermediate or Final VOC's (40 CFR 60.489).

Clean Water Act
This product does not contain any Hazardous Substances listed under the U.S. CleanWater Act, Section 311, Table 116.4A.
This product does not contain any Hazardous Chemicals listed under the U.S. CleanWater Act, Section 311, Table 117.3.
This product does not contain any toxic pollutants listed under the U.S. Clean Water Act Section 307
This product does not contain any priority pollutants related to the U.S. Clean Water Act

US State Regulations
Massachusetts Right To Know
No components are subject to the Massachusetts Right to Know Act
Pennsylvania Right To Know
2,5-Dimethyl-2,5-di(tert-butylperoxy)hexane 78-63-7
Maine Chemicals of High Concern
This product does not contain any chemicals that are listed as Maine Chemicals of High Concern.
California Prop. 65
This product does not contain any chemicals known to the State of California to cause cancer, birth, or any other reproductive defects.

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

TCSI	: On the inventory, or in compliance with the inventory
TSCA	: All substances listed as active on the TSCA inventory
AIIC	: On the inventory, or in compliance with the inventory
DSL	: All components of this product are on the Canadian DSL
ENCS	: Not in compliance with the inventory

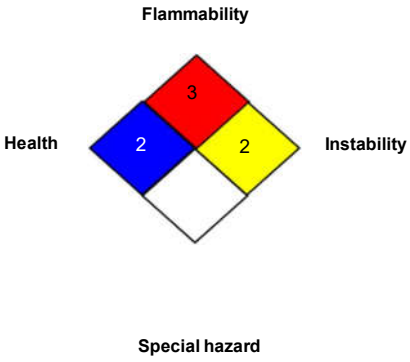
ISHL	: On the inventory, or in compliance with the inventory
KECI	: On the inventory, or in compliance with the inventory
PICCS	: On the inventory, or in compliance with the inventory
IECSC	: On the inventory, or in compliance with the inventory
NZIoC	: Not in compliance with the inventory
TECI	: Not in compliance with the inventory

TSCA list
No substances are subject to a Significant New Use Rule.
No substances are subject to TSCA 12(b) export notification requirements.

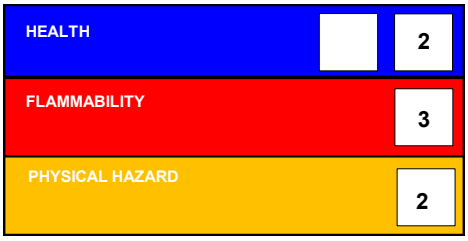
SECTION 16. OTHER INFORMATION

Further information

NFPA 704:



HMIS® IV:



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

Full text of other abbreviations

ACGIH	: USA. ACGIH Threshold Limit Values (TLV)
NIOSH REL	: USA. NIOSH Recommended Exposure Limits
OSHA P0	: USA. Table Z-1-A Limits for Air Contaminants (1989 vacated values)
OSHA Z-1	: USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
ACGIH / TWA	: 8-hour, time-weighted average
ACGIH / STEL	: Short-term exposure limit
NIOSH REL / TWA	: Time-weighted average concentration for up to a 10-hour workday during a 40-hour workweek
NIOSH REL / ST	: STEL - 15-minute TWA exposure that should not be exceeded at any time during a workday
OSHA P0 / TWA	: 8-hour time weighted average
OSHA P0 / STEL	: Short-term exposure limit
OSHA Z-1 / TWA	: 8-hour time weighted average

AIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CERCLA - Comprehensive Environmental Response, Compensation,and Liability Act; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DOT - Department of Transportation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; EHS - Extremely Hazardous Substance; ELx - Loading rate associated with x% response; EmS - Emergency Schedule;ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; HMIS - Hazardous Materials Identification System; IARC -International Agency for Research on Cancer; IATA - International Air Transport Association; IBC- International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI

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;

Revision Date : 04/15/2025

This material safety datasheet only contains information relating to safety and does not replace any product information or product specification.

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/500W