

SAFETY DATA SHEET

according to US Regulation 29 CFR 1910.1200 and the Canadian HPA

Bardac™ 2050

Version 1.2

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SECTION 1. IDENTIFICATION

Commercial Product Name : BARDAC 2050

Product name : Bardac™ 2050

PMRA Registration number : 21899

Manufacturer or supplier's detailsCompany : Lonza America Inc.
412 Mount Kemble Avenue, Suite 200S
Morristown, NJ 07960
USA
Business Telephone 1-201-316-9200

E-mail address : prodinfo@lonza.com

Emergency telephone number : +41 61 313 94 94 (24h)

For US only CHEMTREC 1-800-424-9300

Recommended use of the chemical and restrictions on useRecommended use : Active ingredient for biocidal products
Active ingredient for medical devices
Detergent
Corrosion inhibitor**SECTION 2. HAZARDS IDENTIFICATION****GHS Classification**

Flammable liquids : Category 3

Acute toxicity (Oral) : Category 4

Acute toxicity (Dermal) : Category 3

Skin corrosion : Category 1B

Serious eye damage : Category 1

Short-term (acute) aquatic hazard : Category 1

Long-term (chronic) aquatic hazard : Category 1

GHS label elements

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Hazard pictograms

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Signal word

: Danger

Hazard statements

: H226 Flammable liquid and vapour.
H302 Harmful if swallowed.
H311 Toxic in contact with skin.
H314 Causes severe skin burns and eye damage.
H410 Very toxic to aquatic life with long lasting effects.

Precautionary statements

: **Prevention:**
P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P233 Keep container tightly closed.
P240 Ground and bond container and receiving equipment.
P241 Use explosion-proof electrical/ ventilating/ lighting equipment.
P242 Use non-sparking tools.
P243 Take action to prevent static discharges.
P264 Wash skin thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P273 Avoid release to the environment.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.
Response:
P301 + P312 + P330 IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell. Rinse mouth.
P301 + P330 + P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water.
P304 + P340 + P310 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/doctor.
P305 + P351 + P338 + P310 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/doctor.
P361 + P364 Take off immediately all contaminated clothing and wash it before reuse.
P370 + P378 In case of fire: Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide to extinguish.
P391 Collect spillage.
Storage:
P403 + P235 Store in a well-ventilated place. Keep cool.
P405 Store locked up.
Disposal:
P501 Dispose of contents/container in accordance with local regulation.

Other hazards

None known.

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SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

Hazardous components

Chemical name / Synonyms	CAS-No.	Concentration (% w/w)
Quaternary ammonium compounds, di-C8-10-alkyldimethyl, chlorides	68424-95-3	>= 50 - < 70
Ethanol	64-17-5	>= 10 - < 15

SECTION 4. FIRST AID MEASURES

- If inhaled : Move to fresh air.
If unconscious, place in recovery position and seek medical advice.
If breathing is irregular or stopped, administer artificial respiration.
Call a physician or poison control centre immediately.
Keep respiratory tract clear.
- In case of skin contact : After contact with skin, wash immediately with plenty of soap and water.
Take off contaminated clothing and shoes immediately.
Immediate medical treatment is necessary as untreated wounds from corrosion of the skin heal slowly and with difficulty.
Take victim immediately to hospital.
- In case of eye contact : Rinse immediately with plenty of lukewarm water, also under the eyelids, for at least 15 minutes.
Call a physician immediately.
Remove contact lenses.
Keep eye wide open while rinsing.
Protect unharmed eye.
Continue rinsing eyes during transport to hospital.
Small amounts splashed into eyes can cause irreversible tissue damage and blindness.
- If swallowed : Clean mouth with water and drink afterwards plenty of water.
Do NOT induce vomiting.
Never give anything by mouth to an unconscious person.
Take victim immediately to hospital.
- Most important symptoms and effects, both acute and delayed : No information available.
- Notes to physician : Treat symptomatically.

SECTION 5. FIREFIGHTING MEASURES

- Suitable extinguishing media : Water spray
Alcohol-resistant foam
Dry chemical

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- | | | |
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| Unsuitable extinguishing media | : | High volume water jet |
| Specific hazards during firefighting | : | Heating or fire can release toxic gas.
Do not allow run-off from fire fighting to enter drains or water courses. |
| Further information | : | Use water spray to cool unopened containers.
Collect contaminated fire extinguishing water separately. This must not be discharged into drains. |
| Special protective equipment for firefighters | : | In the event of fire, wear self-contained breathing apparatus.
Use personal protective equipment. |
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SECTION 6. ACCIDENTAL RELEASE MEASURES

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| Personal precautions, protective equipment and emergency procedures | : | Wear personal protective equipment.
Remove all sources of ignition.
Use personal protective equipment.
Remove all sources of ignition.
Evacuate personnel to safe areas.
Use respirator when performing operations involving potential exposure to vapour of the product.
Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas. |
| Environmental precautions | : | Prevent product from entering drains.
Prevent further leakage or spillage if safe to do so. |
| Methods and materials for containment and cleaning up | : | Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13).
Non-sparking tools should be used. |
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SECTION 7. HANDLING AND STORAGE

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| Advice on protection against fire and explosion | : | Keep away from open flames, hot surfaces and sources of ignition.
Take precautionary measures against static discharges. |
| Advice on safe handling | : | Avoid formation of aerosol.
Do not breathe vapours/dust.
Avoid contact with skin and eyes.
Smoking, eating and drinking should be prohibited in the application area.
Take precautionary measures against static discharges.
Provide sufficient air exchange and/or exhaust in work rooms.
Open drum carefully as content may be under pressure.
To avoid spills during handling keep bottle on a metal tray.
Dispose of rinse water in accordance with local and national regulations. |
| Conditions for safe storage | : | Keep container tightly closed.
Keep in a well-ventilated place.
Containers which are opened must be carefully resealed and kept upright to prevent leakage. |

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Electrical installations / working materials must comply with the technological safety standards.
 To maintain product quality, do not store in heat or direct sunlight.
 To prevent leaks or spillages from spreading, provide a suitable liquid retention system.
 No smoking.

Materials to avoid : Keep away from food, drink and animal feedingstuffs.

Further information on storage stability : No decomposition if stored and applied as directed.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
Ethanol	64-17-5	STEL	1,000 ppm	ACGIH
		REL	1,000 ppm 1,900 mg/m ³	NIOSH/GUIDE
		PEL	1,000 ppm 1,900 mg/m ³	OSHA_TRANS
		TWA	1,000 ppm 1,900 mg/m ³	Z1A

Personal protective equipment

Respiratory protection : In the case of vapour formation use a respirator with an approved filter.
 Respirator with ABEK filter.

Respirator with a vapour filter (EN 141)

Hand protection

Material : Nitrile rubber

Remarks : Wear protective gloves. Break through time : > 480 min

Eye protection : Safety glasses with side-shields conforming to EN166
 Wear face-shield and protective suit for abnormal processing problems.

Skin and body protection : Choose body protection according to the amount and concentration of the dangerous substance at the work place.
 Impervious clothing

Hygiene measures : Avoid contact with skin, eyes and clothing.
 When using do not eat or drink.
 When using do not smoke.
 Wash hands before breaks and immediately after handling the product.

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SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	: liquid
Colour	: light yellow
Odour	: solvent-like
Odour Threshold	: no data available
pH	: 6.5 - 9 (68 °F / 20 °C) Concentration: 100 g/l
Melting point/range	: no data available
Boiling point/boiling range	: no data available
Flash point	: 109 °F / 43 °C Does not sustain combustion according to ASTM 4206
Evaporation rate	: no data available
Flammability (solid, gas)	: no data available
Flammability (liquids)	: no data available
Self-ignition	: no data available
Upper explosion limit	: no data available
Lower explosion limit	: no data available
Vapour pressure	: no data available
Relative vapour density	: no data available
Relative density	: no data available
Density	: 0.92 g/cm ³ (77 °F / 25 °C)
Water solubility	: soluble
Partition coefficient: n-octanol/water	: no data available
Auto-ignition temperature	: no data available
Decomposition temperature	: no data available
Viscosity, dynamic	: < 100 mPa.s (77 °F / 25 °C)
Viscosity, kinematic	: no data available
Explosive properties	: no data available
Oxidizing properties	: no data available
Minimum ignition energy	: no data available

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SECTION 10. STABILITY AND REACTIVITY

Reactivity	:	No decomposition if stored and applied as directed.
Chemical stability	:	Stable under recommended storage conditions.
Possibility of hazardous reactions	:	Stable under recommended storage conditions. Vapours may form explosive mixture with air.
Conditions to avoid	:	Heat, flames and sparks.
Incompatible materials	:	Reducing agents Strong oxidizing agents
Hazardous decomposition products	:	Nitrogen oxides (NOx) hydrochloric acid Sulphur oxides No decomposition if used as directed.

SECTION 11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure	:	Inhalation Ingestion Eyes Skin
Acute toxicity		
Acute oral toxicity	:	LD50 (Rat): 455 mg/kg Method: FIFRA GLP: yes
Acute inhalation toxicity	:	Remarks: no data available
Acute dermal toxicity	:	LD50 (Rabbit): 880 mg/kg Method: FIFRA GLP: yes LD50 (Rabbit): 650 mg/kg

Skin corrosion/irritation

Species: Rabbit
Exposure time: 4 h
Method: DOT
Result: Causes burns.

Serious eye damage/eye irritation

Species: Rabbit
Result: Corrosive
Assessment: Risk of serious damage to eyes.
Method: FIFRA
GLP: yes

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Respiratory or skin sensitisation

Remarks: no data available

Germ cell mutagenicity

Genotoxicity in vitro : Remarks: no data available

Carcinogenicity

Remarks: no data available

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 on OSHA's list of regulated carcinogens.

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.

ACGIH

Confirmed animal carcinogen with unknown relevance to humans
Ethanol 64-17-5

Reproductive toxicity

Effects on fertility : Remarks: no data available

STOT - single exposure

Remarks: no data available

STOT - repeated exposure

Remarks: no data available

Aspiration toxicity

No aspiration toxicity classification

Further information

Remarks: No data is available on the product itself.
Information given is based on data on the components and the toxicology of similar products.

Remarks: Ingestion may cause nausea, vomiting, sore throat, stomach-ache and eventually lead to a perforation of the intestine.
Solvents may degrease the skin.

The following toxicological data refer to:

Quaternary ammonium compounds, di-C8-10-alkyldimethyl, chlorides(CAS-No.: 68424-95-3)

Skin corrosion/irritation

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Result: Causes severe skin burns and eye damage.

Serious eye damage/eye irritation

Result: Risk of serious damage to eyes.

Respiratory or skin sensitisation

Remarks: Not classified

Germ cell mutagenicity

Genotoxicity in vitro : Test Type: Ames test
 Metabolic activation: with and without metabolic activation
 Method: OECD Test Guideline 471
 Result: negative
 GLP: yes

Genotoxicity in vivo : Species: Rat
 Application Route: oral (gavage)
 Method: OECD Test Guideline 475
 Result: negative
 GLP: yes

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 2 mg/l
 Exposure time: 96 h
 Method: US-EPA

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): < 1 mg/l
 Exposure time: 48 h
 Test Type: Immobilization
 Method: EPA-FIFRA
 GLP: yes

Persistence and degradability

no data available

Bioaccumulative potential

Bioaccumulation : Remarks: no data available

Components:

Quaternary ammonium compounds, di-C8-10-alkyldimethyl, chlorides:

Partition coefficient: n-octanol/water : log Pow: 2.59 (20 °C)
 pH: 7
 Method: Calculation method

Ethanol:

Partition coefficient: n-octanol/water : log Pow: -0.3

Mobility in soil

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Distribution among environmental compartments : Remarks: no data available

Other adverse effects

Ozone-Depletion Potential : Regulation: US. EPA Clean Air Act (CAA) Section 602 Ozone-Depleting Substances (40 CFR 82, Subpt. A, App A & B)
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 information : Information given is based on data obtained from similar substances.

An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.
Very toxic to aquatic life.
Very toxic to aquatic life with long lasting effects.

The following ecotoxicological data refer to:

Quaternary ammonium compounds, di-C8-10-alkyldimethyl, chlorides(CAS-No.: 68424-95-3)

Ecotoxicity

M-Factor (Acute aquatic toxicity) : 10
M-Factor (Chronic aquatic toxicity) : 1

Persistence and degradability

Biodegradability : Test Type: CO2 Evolution Test
Result: Readily biodegradable.
Biodegradation: 80.92 %
Exposure time: 28 d

Bioaccumulative potential

no data available

Mobility in soil

no data available

Other adverse effects

Results of PBT and vPvB assessment : This substance is not considered to be persistent, bioaccumulating and toxic (PBT). This substance is not considered to be very persistent and very bioaccumulating (vPvB).

Additional ecological information : Information given is based on data obtained from similar substances.

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

Waste from residues : Dispose of contents/container in accordance with local regulation.
Contact waste disposal services.
Do not dispose of waste into sewer.
The product should not be allowed to enter drains, water

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courses or the soil.

Contaminated packaging : Dispose of as unused product.
Do not re-use empty containers.
Do not burn, or use a cutting torch on, the empty drum.

SECTION 14. TRANSPORT INFORMATION

DOT

UN number : 1903
Proper shipping name : Disinfectants, liquid, corrosive n.o.s.
 (Dialkyldimethylammonium chloride)
Transport hazard class : 8
Packing group : II
 Labels : 8
 Emergency Response Guidebook : 153
 Number
Environmental hazards : no

TDG

UN number : 2920
Proper shipping name : CORROSIVE LIQUID, FLAMMABLE, N.O.S.
 (Dialkyldimethylammonium chloride, Ethanol)
Transport hazard class : 8
Packing group : II
 Labels : 8 (3)
Environmental hazards : no

IATA

UN number : 2920
Proper shipping name : Corrosive liquid, flammable, n.o.s.
 (Dialkyldimethylammonium chloride, Ethanol)
Transport hazard class : 8
Packing group : II
 Labels : 8 (3)
Environmental hazards : no

IMDG

UN number : 2920
Proper shipping name : Corrosive liquid, flammable, n.o.s.
 (Dialkyldimethylammonium chloride, Ethanol)
Transport hazard class : 8
Packing group : II
 Labels : 8 (3)
 EmS Number 1 : F-E
 EmS Number 2 : S-C
Environmental hazards : Marine pollutant: yes

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ADR

UN number	: 2920
Proper shipping name	: CORROSIVE LIQUID, FLAMMABLE, N.O.S. (Dialkyldimethylammonium chloride, Ethanol)
Transport hazard class	: 8
Packing group	: II
Classification Code	: CF1
Hazard Identification Number	: 83
Labels	: 8 (3)
Environmental hazards	: yes

RID

UN number	: 2920
Proper shipping name	: CORROSIVE LIQUID, FLAMMABLE, N.O.S. (Dialkyldimethylammonium chloride, Ethanol)
Transport hazard class	: 8
Packing group	: II
Classification Code	: CF1
Hazard Identification Number	: 83
Labels	: 8 (3)
Environmental hazards	: yes

Special precautions for user : none

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code : Not applicable

SECTION 15. REGULATORY INFORMATION

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.

EPA Registration number	: 6836-52
Signal word	: DANGER!
Hazard statements	: Corrosive - causes irreversible eye damage. Corrosive. Causes skin burns. Harmful if absorbed through skin. Prolonged or frequently repeated skin contact may cause allergic reactions in some individuals. This pesticide is toxic to fish.

This chemical is a pest control product registered by Health Canada Pest Management Regulatory Agency and is subject to certain label.

Read the approved label, authorized under the Pest Control Products Act, prior to using or handling the pest control product.

PMRA Registration number : 21899

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Hazard pictograms

:



Signal word

: DANGER!

Hazard statements

: Corrosive - causes irreversible eye damage.
Harmful if swallowed.
This pesticide is toxic to fish.

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

CERCLA Reportable Quantity

Components	CAS-No.	Component RQ (lbs)	Calculated product RQ (lbs)
Ethanol	64-17-5	100	1000

SARA 304 Extremely Hazardous Substances Reportable Quantity

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

SARA 311/312 Hazards

See above: SECTION 2. Hazard Identification-GHS Classification

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 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):

Components	CAS-No.	Concentration
Ethanol	64-17-5	>= 10 - < 20 %

This product does not contain any VOC exemptions listed under the U.S. Clean Air Act Section 450.

Clean Water Act

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 Hazardous Substances listed under the U.S. CleanWater Act, Section 311, Table 116.4A.

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This product does not contain any toxic pollutants listed under the U.S. Clean Water Act Section 307

US State Regulations

Massachusetts Right To Know

Components	CAS-No.
Ethanol	64-17-5

Pennsylvania Right To Know

Components	CAS-No.
Quaternary ammonium compounds, di-C8-10-alkyldimethyl, chlorides	68424-95-3
Water	7732-18-5
Ethanol	64-17-5

California Prop. 65

This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

Canadian lists

NPRI

Canadian National Pollutant Release Inventory (NPRI): No component is listed on NPRI.

SECTION 16. OTHER INFORMATION

Full text of other abbreviations

ACGIH	: US. ACGIH Threshold Limit Values
NIOSH/GUIDE	: US. NIOSH: Pocket Guide to Chemical Hazards
OSHA_TRANS	: US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)
Z1A	: US. OSHA Table Z-1-A (29 CFR 1910.1000)

AICS - Australian Inventory of Chemical Substances; 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 Pro-

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tection 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; 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 : 2019.02.08

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.

Date format : yyyy/mm/dd

US / EN