# **SAFETY DATA SHEET**



#### **Dioctyl Phthalate**

### **Section 1. Identification**

**GHS** product identifier

: Dioctyl Phthalate

**Product code** 

: 1400000

**Chemical name** 

: bis(2-ethylhexyl) phthalate

Other means of identification

: di-(2-ethylhexyl) phthalate; DEHP; 1,2-Benzenedicarboxylic acid, 1,2-bis(2-ethylhexyl) ester; DI-2-ETHYLHEXYL PHTHALATE; 1,2-Benzenedicarboxylic acid, bis(2-ethylhexyl) ester; Dioctylphthalate; Di-s-octyl phthalate; Di-sec octyl phthalate (Di-2-ethylhexyl-

phthalate; Di-sec octyl phthalate; Di(2-ethylhexyl)phthalate; DI-SEC-OCTYL

PHTHALATE

**Product type** 

: Liquid.

Supplier's details

: Barton Solvents, Inc.

1920 NE Broadway P.O. Box 221 Des Moines, IA 50306-0221

(515) 265-7998

**Emergency telephone** 

number

: CHEMTREC (800) 424-9300 (AVAILABLE 24 HOURS A DAY)

#### Section 2. Hazards identification

**OSHA/HCS** status

: This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Classification of the substance or mixture

: CARCINOGENICITY - Category 2

TOXIC TO REPRODUCTION (Fertility) - Category 1B TOXIC TO REPRODUCTION (Unborn child) - Category 1B

**GHS label elements** 

**Hazard pictograms** 



Signal word

word : Danger

**Hazard statements** 

: May damage fertility or the unborn child. Suspected of causing cancer.

**Precautionary statements** 

**General** 

: Read label before use. Keep out of reach of children. If medical advice is needed, have product container or label at hand.

**Prevention** 

: Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wear protective gloves. Wear eye or face protection.

Wear protective clothing.

Response

: IF exposed or concerned: Get medical attention.

Storage

: Store locked up.

**Disposal** 

: Dispose of contents and container in accordance with all local, regional, national and international regulations.

**Hazards not otherwise** 

classified

: None known.

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# Section 3. Composition/information on ingredients

Substance/mixture

**Chemical name** 

Other means of identification

: Substance

: bis(2-ethylhexyl) phthalate

: di-(2-ethylhexyl) phthalate; DEHP; 1,2-Benzenedicarboxylic acid, 1,2-bis(2-ethylhexyl) ester; DI-2-ETHYLHEXYL PHTHALATE; 1,2-Benzenedicarboxylic acid, bis(2-ethylhexyl) ester; Dioctylphthalate; Di-s-octyl phthalate; Di-sec octyl phthalate (Di-2-ethylhexyl-phthalate); Di-sec octyl phthalate; Di(2-ethylhexyl)phthalate; DI-SEC-OCTYL PHTHALATE

#### **CAS** number/other identifiers

**CAS number** : 117-81-7

Ingredient name	%	CAS number
bis(2-ethylhexyl) phthalate	60-100	117-81-7

The Specific percentage of composition is being withheld as a trade secret. Further information is available as required by 29 CFR 1910.1200(i). Any concentration shown as a range is to protect confidentiality or is due to batch variation

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

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

#### Section 4. First aid measures

#### **Description of necessary first aid measures**

**Eye contact** 

: Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention.

Inhalation

: Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

**Skin contact** 

: Wash contaminated skin with soap and water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. Get medical attention. Wash clothing before reuse. Clean shoes thoroughly before reuse.

Ingestion

: Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

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

#### Potential acute health effects

Eye contact
 Inhalation
 No known significant effects or critical hazards.
 Skin contact
 No known significant effects or critical hazards.
 Ingestion
 No known significant effects or critical hazards.
 No known significant effects or critical hazards.

#### Over-exposure signs/symptoms

Eye contact : No specific data.

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### Section 4. First aid measures

**nhalation** : Adverse symptoms may include the following:

reduced fetal weight increase in fetal deaths skeletal malformations

**Skin contact**: Adverse symptoms may include the following:

reduced fetal weight increase in fetal deaths skeletal malformations

**Ingestion**: Adverse symptoms may include the following:

reduced fetal weight increase in fetal deaths skeletal malformations

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

Notes to physician : Treat symptomatically. Contact poison treatment specialist immediately if large

quantities have been ingested or inhaled.

**Specific treatments**: No specific treatment.

Protection of first-aiders : No action shall be taken involving any personal risk or without suitable training. If it is

suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water

before removing it, or wear gloves.

See toxicological information (Section 11)

## Section 5. Fire-fighting measures

#### **Extinguishing media**

Suitable extinguishing media

: Use an extinguishing agent suitable for the surrounding fire.

Unsuitable extinguishing media

: None known.

Specific hazards arising from the chemical

Hazardous thermal decomposition products

: In a fire or if heated, a pressure increase will occur and the container may burst.

 Decomposition products may include the following materials: carbon dioxide

carbon monoxide

Special protective actions for fire-fighters

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

Special protective equipment for fire-fighters

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

## Section 6. Accidental release measures

#### Personal precautions, protective equipment and emergency procedures

For non-emergency personnel

: No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

For emergency responders

: If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

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### Section 6. Accidental release measures

#### **Environmental precautions**

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

#### Methods and materials for containment and cleaning up

#### **Small spill**

: Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

#### Large spill

Stop leak if without risk. Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

# Section 7. Handling and storage

#### **Precautions for safe handling**

#### **Protective measures**

: Put on appropriate personal protective equipment (see Section 8). Avoid exposure obtain special instructions before use. Avoid exposure during pregnancy. Do not handle until all safety precautions have been read and understood. Do not get in eyes or on skin or clothing. Do not ingest. Avoid breathing vapor or mist. If during normal use the material presents a respiratory hazard, use only with adequate ventilation or wear appropriate respirator. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.

#### Advice on general occupational hygiene

: Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

# including any incompatibilities

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

# Section 8. Exposure controls/personal protection

#### **Control parameters**

#### Occupational exposure limits

Ingredient name	Exposure limits		
bis(2-ethylhexyl) phthalate	OSHA PEL 1989 (United States, 3/1989). TWA: 5 mg/m³ 8 hours. STEL: 10 mg/m³ 15 minutes. NIOSH REL (United States, 10/2016). TWA: 5 mg/m³ 10 hours. STEL: 10 mg/m³ 15 minutes. ACGIH TLV (United States, 3/2018). TWA: 5 mg/m³ 8 hours. OSHA PEL (United States, 5/2018). TWA: 5 mg/m³ 8 hours.		

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# Section 8. Exposure controls/personal protection

# Appropriate engineering controls

# : If user operations generate dust, fumes, gas, vapor or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.

# **Environmental exposure** controls

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

#### **Individual protection measures**

**Hygiene measures** 

: Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period.

Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

**Eye/face protection** 

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

#### **Skin protection**

**Hand protection** 

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

**Body protection** 

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

Other skin protection

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

**Respiratory protection** 

: Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use.

# Section 9. Physical and chemical properties

#### **Appearance**

Physical state : Liquid. [Viscous liquid.]

Color : Colorless. Clear.

Odor : Characteristic.

Odor threshold : Not available.

pH : Not available.

Melting point : -55°C (-67°F)

Boiling point : 385°C (725°F)

Flash point : Open cup: 215°C (419°F).

**Evaporation rate** : <0.005 compared with butyl acetate

Flammability (solid, gas) : Not available.

Lower and upper explosive : Not available.

(flammable) limits

Vapor pressure : 0 kPa (0 mm Hg) (at 20°C)

Vapor density : 13.45 (Air = 1)

Relative density : 0.986 (Water = 1)

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# Section 9. Physical and chemical properties

Solubility: Not available.Solubility in water: 0.000003 g/l

Partition coefficient: n-

**Auto-ignition temperature** 

octanol/water

: 390°C (734°F)

7.6

Decomposition temperature : Not available.

Viscosity : Dynamic: 81 cP

Flow time (ISO 2431) : Not available.

Molecular weight : 390.62 g/mole

## Section 10. Stability and reactivity

**Reactivity**: No specific test data related to reactivity available for this product or its ingredients.

**Chemical stability**: The product is stable.

Possibility of hazardous

reactions

: Under normal conditions of storage and use, hazardous reactions will not occur.

Conditions to avoid : No specific data.

Incompatible materials : No specific data.

Hazardous decomposition products

: Under normal conditions of storage and use, hazardous decomposition products should

not be produced.

## **Section 11. Toxicological information**

### Information on toxicological effects

#### **Acute toxicity**

Product/ingredient name	Result	Species	Dose	Exposure
bis(2-ethylhexyl) phthalate	LD50 Dermal LD50 Oral		25 g/kg 30 g/kg	-

#### **Irritation/Corrosion**

Product/ingredient name	Result	Species	Score	Exposure	Observation
bis(2-ethylhexyl) phthalate	Eyes - Mild irritant	Rabbit	-	24 hours 500 milligrams	-
	Eyes - Mild irritant	Rabbit	-	500 milligrams	-
	Skin - Mild irritant	Rabbit	-	24 hours 500 milligrams	-

#### **Sensitization**

Not available.

#### **Mutagenicity**

Not available.

#### Carcinogenicity

Not available.

#### Classification

Product/ingredient name	OSHA	IARC	NTP
bis(2-ethylhexyl) phthalate	-	2B	Reasonably anticipated to be a human carcinogen.

# **Section 11. Toxicological information**

#### Reproductive toxicity

Not available.

#### **Teratogenicity**

Not available.

#### Specific target organ toxicity (single exposure)

Not available.

#### Specific target organ toxicity (repeated exposure)

Not available.

#### **Aspiration hazard**

Not available.

Information on the likely

routes of exposure

: Not available.

#### Potential acute health effects

**Eye contact** : No known significant effects or critical hazards. Inhalation : No known significant effects or critical hazards. **Skin contact** : No known significant effects or critical hazards. : No known significant effects or critical hazards. Ingestion

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

**Eye contact** : No specific data.

**Inhalation** : Adverse symptoms may include the following:

> reduced fetal weight increase in fetal deaths skeletal malformations

**Skin contact** : Adverse symptoms may include the following:

> reduced fetal weight increase in fetal deaths skeletal malformations

Ingestion : Adverse symptoms may include the following:

> reduced fetal weight increase in fetal deaths skeletal malformations

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

#### **Short term exposure**

**Potential immediate** 

: Not available.

effects

effects

**Potential delayed effects** : Not available.

Long term exposure

**Potential immediate** 

: Not available.

**Potential delayed effects** : Not available.

#### Potential chronic health effects

Not available.

General : No known significant effects or critical hazards.

Carcinogenicity : Suspected of causing cancer. Risk of cancer depends on duration and level of

exposure.

: No known significant effects or critical hazards. Mutagenicity

: May damage the unborn child. **Teratogenicity** 

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# **Section 11. Toxicological information**

**Developmental effects** 

: No known significant effects or critical hazards.

**Fertility effects** 

: May damage fertility.

#### **Numerical measures of toxicity**

#### **Acute toxicity estimates**

Route	ATE value
	30000 mg/kg 25000 mg/kg

# **Section 12. Ecological information**

#### **Toxicity**

Product/ingredient name	Result	Species	Exposure
bis(2-ethylhexyl) phthalate	Acute EC50 31000000 µg/l Marine water	Algae - Karenia brevis	96 hours
	Acute EC50 133 μg/l Fresh water	Daphnia - Daphnia pulex - Neonate	48 hours
	Acute LC50 1106.2 mg/l Fresh water	Fish - Pimephales promelas	96 hours
	Chronic NOEC 76 µg/l Marine water	Algae - Hormosira banksii - Gamete	72 hours
	Chronic NOEC 109 μg/l Fresh water	Crustaceans - Eurytemora affinis - Nauplii	21 days
	Chronic NOEC 77 µg/l Fresh water	Daphnia - Daphnia magna	21 days
	Chronic NOEC 12 µg/l Fresh water	Fish - Pimephales promelas - Adult	28 days

#### Persistence and degradability

Not available.

#### **Bioaccumulative potential**

Product/ingredient name	LogPow	BCF	Potential
bis(2-ethylhexyl) phthalate	7.6	1380	high

#### **Mobility in soil**

Soil/water partition coefficient (Koc)

: Not available.

Other adverse effects

: No known significant effects or critical hazards.

# Section 13. Disposal considerations

#### **Disposal methods**

: The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

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# **Section 14. Transport information**

	DOT Classification
UN number	UN3082
UN proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (bis(2-ethylhexyl) phthalate)
Transport hazard class(es)	9
Packing group	III
Environmental hazards	Yes.
Additional information	Non-bulk packages of this product are not regulated as hazardous materials in package sizes less than the product reportable quantity, unless transported by inland waterway. The marine pollutant mark is not required when transported on inland waterways in sizes of ≤5 L or ≤5 kg.  Reportable quantity 100 lbs / 45.4 kg [12.164 gal / 46.045 L]. Package sizes shipped in quantities less than the product reportable quantity are not subject to the RQ (reportable quantity) transportation requirements.

Special precautions for user : Transport within user's premises: always transport in closed containers that are

upright and secure. Ensure that persons transporting the product know what to do in the

event of an accident or spillage.

Transport in bulk according : Not available. to Annex II of MARPOL and

the IBC Code

## Section 15. Regulatory information

U.S. Federal regulations

: TSCA 8(a) CDR Exempt/Partial exemption: Not determined

United States inventory (TSCA 8b): This material is listed or exempted.

Clean Water Act (CWA) 307: bis(2-ethylhexyl) phthalate

Clean Air Act Section 112

(b) Hazardous Air **Pollutants (HAPs)**  : Listed

Clean Air Act Section 602

**Class I Substances** 

: Not listed

Clean Air Act Section 602

: Not listed

**Class II Substances DEA List I Chemicals** 

: Not listed

(Precursor Chemicals)

: Not listed

**DEA List II Chemicals** (Essential Chemicals)

**SARA 302/304** 

**Composition/information on ingredients** 

No products were found.

**SARA 304 RQ** 

: Not applicable.

**SARA 311/312** 

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# Section 15. Regulatory information

Classification : CARCINOGENICITY - Category 2

TOXIC TO REPRODUCTION (Fertility) - Category 1B TOXIC TO REPRODUCTION (Unborn child) - Category 1B

#### **Composition/information on ingredients**

Name		hazard	Sudden release of pressure	Reactive	(acute) health	Delayed (chronic) health hazard
bis(2-ethylhexyl) phthalate	100	No.	No.	No.	No.	Yes.

#### **SARA 313**

	Product name	CAS number	%
Form R - Reporting requirements	bis(2-ethylhexyl) phthalate	117-81-7	100
Supplier notification	bis(2-ethylhexyl) phthalate	117-81-7	100

SARA 313 notifications must not be detached from the SDS and any copying and redistribution of the SDS shall include copying and redistribution of the notice attached to copies of the SDS subsequently redistributed.

#### **State regulations**

Massachusetts: This material is listed.New York: This material is listed.New Jersey: This material is listed.Pennsylvania: This material is listed.

#### California Prop. 65

**WARNING**: This product can expose you to Di(2-ethylhexyl)phthalate, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

Ingredient name	Cancer	Reproductive		Maximum acceptable dosage level
bis(2-ethylhexyl) phthalate	Yes.	Yes.	Yes.	Yes.

#### International regulations

Chemical Weapon Convention List Schedules I, II & III Chemicals

Not listed.

#### **Montreal Protocol**

Not listed.

#### **Stockholm Convention on Persistent Organic Pollutants**

Not listed.

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

Not listed.

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

Not listed.

#### **International lists**

#### **National inventory**

Australia : This material is listed or exempted.

Canada : This material is listed or exempted.

China : This material is listed or exempted.

Europe : This material is listed or exempted.

Japan : Japan inventory (ENCS): This material is listed or exempted.

Japan inventory (ISHL): This material is listed or exempted.

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# **Section 15. Regulatory information**

Malaysia : This material is listed or exempted.

New Zealand : This material is listed or exempted.

Philippines : This material is listed or exempted.

Republic of Korea : This material is listed or exempted.

Taiwan : This material is listed or exempted.

Turkey : This material is listed or exempted.

### Section 16. Other information

#### **Hazardous Material Information System (U.S.A.)**



Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® ratings and the associated label are not required on SDSs or products leaving a facility under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered trademark and service mark of the American Coatings Association, Inc.

The customer is responsible for determining the PPE code for this material. For more information on HMIS® Personal Protective Equipment (PPE) codes, consult the HMIS® Implementation Manual.

#### **National Fire Protection Association (U.S.A.)**



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Copyright ©2001, National Fire Protection Association, Quincy, MA 02269. This warning system is intended to be interpreted and applied only by properly trained individuals to identify fire, health and reactivity hazards of chemicals. The user is referred to certain limited number of chemicals with recommended classifications in NFPA 49 and NFPA 325, which would be used as a guideline only. Whether the chemicals are classified by NFPA or not, anyone using the 704 systems to classify chemicals does so at their own risk.

#### Procedure used to derive the classification

Classification	Justification
TOXIC TO REPRODUCTION (Fertility) - Category 1B	Expert judgment Expert judgment Expert judgment

#### **History**

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### Section 16. Other information

#### **Key to abbreviations**

: ATE = Acute Toxicity Estimate

BCF = Bioconcentration Factor

GHS = Globally Harmonized System of Classification and Labelling of Chemicals

IATA = International Air Transport Association

IBC = Intermediate Bulk Container

IMDG = International Maritime Dangerous Goods

LogPow = logarithm of the octanol/water partition coefficient

MARPOL = International Convention for the Prevention of Pollution From Ships, 1973

as modified by the Protocol of 1978. ("Marpol" = marine pollution)

UN = United Nations

References

: New 08/19/2015; Updated 07/11/2019.

▼ Indicates information that has changed from previously issued version.

#### **Notice to reader**

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

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

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