



BENZENE-D6 "100%" (D, 99.96%) (+0.03% V/V TMS)

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations
Revision date: 5/17/2023 Version: 4.1

SECTION 1: Identification

1.1. Identification

Product form : Mixture
Product name : BENZENE-D6 "100%" (D, 99.96%) (+0.03% V/V TMS)
CAS-No. : 71-43-2
Product code : DLM-40TC
Formula : C₆H₆

1.2. Recommended use and restrictions on use

No additional information available

1.3. Supplier

Cambridge Isotope Laboratories, Inc.
50 Frontage Rd
01810
ANDOVER, MA, 01810
USA
T 1-800-322-1174
cilsales@isotope.com - www.isotope.com

1.4. Emergency telephone number

Emergency number : 1-703-741-5970
Chemtrec 1-800-424-9300 24 hours

SECTION 2: Hazard(s) identification

2.1. Classification of the substance or mixture

GHS US classification

Flammable liquids Category 2	H225	Highly flammable liquid and vapor
Skin corrosion/irritation Category 2	H315	Causes skin irritation
Serious eye damage/eye irritation Category 2A	H319	Causes serious eye irritation
Germ cell mutagenicity Category 1A	H340	May cause genetic defects (Dermal, Inhalation, oral)
Carcinogenicity Category 1A	H350	May cause cancer (Dermal, Inhalation, oral)
Aspiration hazard Category 1	H304	May be fatal if swallowed and enters airways
Hazardous to the aquatic environment – Acute Hazard Category 2	H401	Toxic to aquatic life

Full text of H statements : see section 16

2.2. GHS Label elements, including precautionary statements

GHS US labeling

Hazard pictograms (GHS US) :



Signal word (GHS US) :

Danger

Hazard statements (GHS US) :

H225 - Highly flammable liquid and vapor
H304 - May be fatal if swallowed and enters airways
H315 - Causes skin irritation

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Precautionary statements (GHS US)	: H319 - Causes serious eye irritation H340 - May cause genetic defects (Dermal, Inhalation, oral) H350 - May cause cancer (Dermal, Inhalation, oral) H401 - Toxic to aquatic life P201 - Obtain special instructions before use. P202 - Do not handle until all safety precautions have been read and understood. P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. heat, hot surfaces, open flames, sparks P233 - Keep container tightly closed. P240 - Ground/Bond container and receiving equipment. P241 - Use explosion-proof electrical, lighting, ventilating equipment. P242 - Use only non-sparking tools. P243 - Take precautionary measures against static discharge. P264 - Wash hands, forearms and face thoroughly after handling. P273 - Avoid release to the environment. P280 - Wear protective clothing, protective gloves. P301+P310 - If swallowed: Immediately call a doctor, a POISON CENTER. P302+P352 - If on skin: Wash with plenty of water. P303+P361+P353 - If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P308+P313 - If exposed or concerned: Get medical advice/attention. P321 - Specific treatment (see Hazardous component(s) for labeling on this label). P331 - Do NOT induce vomiting. P332+P313 - If skin irritation occurs: Get medical advice/attention. P337+P313 - If eye irritation persists: Get medical advice/attention. P362 - Take off contaminated clothing and wash before reuse. P370+P378 - In case of fire: Use alcohol resistant foam, carbon dioxide (CO ₂), dry extinguishing powder to extinguish. P403+P235 - Store in a well-ventilated place. Keep cool. P405 - Store locked up. P501 - Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation.
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2.3. Other hazards which do not result in classification

No additional information available

2.4. Unknown acute toxicity (GHS US)

Not applicable

SECTION 3: Composition/Information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

Name	Product identifier	%	GHS US classification
BENZENE-D6 "100%" (D, 99.96%)	CAS-No.: 71-43-2	99.97	Flam. Liq. 2, H225 Skin Irrit. 2, H315 Muta. 1B, H340 Carc. 1A, H350 Asp. Tox. 1, H304

Full text of hazard classes and H-statements : see section 16

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SECTION 4: First-aid measures

4.1. Description of first aid measures

First-aid measures general	: If you feel unwell, seek medical advice (show the label where possible). Evacuate danger area.
First-aid measures after inhalation	: When symptoms occur: go into open air and ventilate suspected area. If not breathing, give artificial respiration. Get medical advice/attention.
First-aid measures after skin contact	: Wash with plenty of soap and water. Get immediate medical advice/attention. Rinse skin with water/shower. Remove/Take off immediately all contaminated clothing. Wash with plenty of soap and water. Wash contaminated clothing before reuse. If skin irritation occurs: Wash with plenty of soap and water, Get immediate medical advice/attention. Get medical advice/attention. Specific treatment (see Hazard pictograms (CLP) on this label).
First-aid measures after eye contact	: Rinse cautiously with water for several minutes.
First-aid measures after ingestion	: Never give anything by mouth to an unconscious person. Rinse mouth out with water. Get medical advice/attention. Immediately call a poison center or doctor/physician.

4.2. Most important symptoms and effects (acute and delayed)

Potential Adverse human health effects and symptoms	: Inhalation of high concentrations of benzene may have an initial stimulatory effect on the central nervous system characterized by exhilaration, nervous excitation and/or giddiness, depression, drowsiness, or fatigue. The victim may experience tightness in the chest, breathlessness, and loss of consciousness. Tremors, convulsions and death due to respiratory paralysis or circulatory collapse can occur in a few minutes to several hours following severe exposures. Aspirations of small amounts of liquid immediately causes pulmonary edema and hemorrhage of pulmonary disease. Direct skin contact may cause erythema. Repeated or prolonged skin contact may result in drying, scaling dermatitis or development of secondary skin infections. The chief target organ is the hematopoietic system. Bleeding from the nose, gums, or mucous membranes and the development of purpuric spots, pancytopenia, leukopenia, thrombocytopenia, aplastic anemia and leukemia may occur as the condition progresses. The bone marrow may appear normal, aplastic or hyperplastic and may not correlate with peripheral blood-forming tissues. The onset of effects of prolonged benzene exposure may be delayed for months or years after the actual exposure has ceased. Blood disorders. Effects on humans. stomach. This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.
Symptoms/effects	: May cause genetic defects (in contact with skin, if swallowed, if inhaled).
Symptoms/effects after inhalation	: May be fatal if inhaled. May cause respiratory irritation. May cause cancer by inhalation.
Symptoms/effects after skin contact	: Causes skin irritation.
Symptoms/effects after eye contact	: Causes serious eye irritation.
Symptoms/effects after ingestion	: May be fatal if swallowed and enters airways.

4.3. Immediate medical attention and special treatment, if necessary

No additional information available

SECTION 5: Fire-fighting measures

5.1. Suitable (and unsuitable) extinguishing media

Suitable extinguishing media	: Water spray. Dry chemical powder, alcohol-resistant foam, carbon dioxide (CO2).
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5.2. Specific hazards arising from the chemical

Fire hazard	: Highly flammable liquid and vapor.
Explosion hazard	: May cause flash fire or explosion. May form flammable/explosive vapor-air mixture.

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5.3. Special protective equipment and precautions for fire-fighters

Firefighting instructions	: Fight fire with normal precautions from a reasonable distance. Wear a self contained breathing apparatus. Do not enter fire area without proper protective equipment, including respiratory protection.
Protection during firefighting	: Do not enter fire area without proper protective equipment, including respiratory protection. Wear recommended personal protective equipment.
Other information	: Use water spray to cool exposed surfaces.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures	: Remove ignition sources. Use special care to avoid static electric charges. No open flames. No smoking.
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6.1.1. For non-emergency personnel

Emergency procedures	: Use personal protective equipment, and ensure adequate ventilation. Avoid breathing vapors, mist, gas. Remove ignition sources, and move personnel to safe area. Vapors accumulate especially in low areas to form explosive concentrations.
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6.1.2. For emergency responders

Protective equipment	: Do not attempt to take action without suitable protective equipment. For further information refer to section 8: "Exposure controls/personal protection".
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6.2. Environmental precautions

Prevent entry to sewers and public waters. Do not allow to enter drains or water courses. Avoid release to the environment.

6.3. Methods and material for containment and cleaning up

For containment	: Collect spillage. Clean up any spills as soon as possible, using an absorbent material to collect it. Soak up with inert absorbent material (for example sand, sawdust, a universal binder, silica gel). Small quantities of liquid spill: take up in non-combustible absorbent material and shovel into container for disposal. For large spills, confine the spill in a dike and charge it with wet sand or earth for subsequent safe disposal.
Methods for cleaning up	: This material and its container must be disposed of in a safe way, and as per local legislation.
Other information	: Dispose of materials or solid residues at an authorized site.

6.4. Reference to other sections

For further information refer to section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Additional hazards when processed	: Avoid all eye and skin contact and do not breathe vapor and mist. Keep away from sources of ignition - No smoking. Take precautionary measures against static discharges. Handle empty containers with care because residual vapors are flammable.
Precautions for safe handling	: Provide adequate ventilation to minimize dust and/or vapor concentrations. No open flames. No smoking. Use only non-sparking tools. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood.
Hygiene measures	: Wash hands, forearms and face thoroughly after handling.

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7.2. Conditions for safe storage, including any incompatibilities

Technical measures	: Store in a well-ventilated place. Keep container tightly closed. Containers which are opened should be properly resealed and kept upright to prevent leakage. Proper grounding procedures to avoid static electricity should be followed. Ground/bond container and receiving equipment. Use explosion-proof Lighting equipment, ventilating equipment.
Storage conditions	: Store at room temperature away from light and moisture.
Incompatible materials	: Heat sources.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

BENZENE-D6 "100%" (D, 99.96%) (+0.03% V/V TMS) (71-43-2)	
USA - ACGIH - Occupational Exposure Limits	
Local name	Benzene
ACGIH OEL TWA [ppm]	0.5 ppm Leukemia Substances for which there is a Biological Exposure Index or Indices.
ACGIH OEL STEL [ppm]	2.5 ppm Leukemia Substances for which there is a Biological Exposure Index or Indices.
Remark (ACGIH)	TLV® Basis: Leukemia. Notations: Skin; A1 (Confirmed Human Carcinogen); BEI
ACGIH chemical category	No component of this product present at levels greater than or equal to 0.1% is identifiable as a carcinogen or potential carcinogen by ACGIH.
Regulatory reference	ACGIH 2022
USA - ACGIH - Biological Exposure Indices	
Local name	BENZENE
BEI	25 µg/g Kreatinin Parameter: S-Phenylmercapturic acid - Medium: urine - Sampling time: End of shift - Notations: B 500 µg/g Kreatinin Parameter: t,t-Muconic acid - Medium: urine - Sampling time: End of shift - Notations: B
Regulatory reference	ACGIH 2022
USA - OSHA - Occupational Exposure Limits	
Local name	Benzene
OSHA PEL TWA [2]	10 ppm
OSHA PEL C [ppm]	25 ppm
Acceptable maximum peak above the acceptable ceiling concentration for an 8-hr shift	50 ppm 10 mins.
Regulatory reference (US-OSHA)	OSHA Annotated Table Z-2
BENZENE-D6 "100%" (D, 99.96%) (71-43-2)	
USA - ACGIH - Occupational Exposure Limits	
Local name	Benzene
ACGIH OEL TWA [ppm]	0.5 ppm Basis: USA. ACGIH Threshold Limit Values (TLV)
ACGIH OEL STEL [ppm]	2.5 ppm Basis: USA. ACGIH Threshold Limit Values (TLV)
ACGIH OEL C	0.03 mg/g Parameter: S-Phenylmercapturic acid Biological Specimen: in urine; 0.5000 mg/g Parameter: t,t-Muconic acid Biological Specimen: In Urine; Basis: ACGIH - Biological Exposure Indices (BEI) Remark: End of shift (As soon as possible after exposure ceases)

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BENZENE-D6 "100%" (D, 99.96%) (71-43-2)	
Remark (ACGIH)	Leukemia. Substances for which there is a Biological Exposure Index or Indices (see BEI section). Confirmed human carcinogen. Danger of cutaneous absorption.
ACGIH chemical category	No component of this product present at levels greater than or equal to 0.1% is identifiable as a carcinogen or potential carcinogen by ACGIH.
Regulatory reference	ACGIH 2022
USA - ACGIH - Biological Exposure Indices	
Local name	BENZENE
BEI	0.03 mg/g Parameter: S-Phenylmercaptric acid Biological Specimen: in urine; 0.5000 mg/g Parameter: t,t-Muconic acid Biological Specimen: In Urine; Basis: ACGIH - Biological Exposure Indices (BEI) Remark: End of shift (As soon as possible after exposure ceases)
Regulatory reference	ACGIH 2022
USA - OSHA - Occupational Exposure Limits	
Local name	Benzene
OSHA PEL TWA [2]	10 ppm Basis: USA. Occupational Exposure Limits (OSHA) - Table Z-2
OSHA PEL C [ppm]	25 ppm Basis: USA. Occupational Exposure Limits (OSHA) - Table Z-2
Acceptable maximum peak above the acceptable ceiling concentration for an 8-hr shift	50 ppm Basis: USA. Occupational Exposure Limits (OSHA) - Table Z-2
Remark (OSHA)	Acceptable maximum peak above the acceptable ceiling concentration for an 8-hr shift: 50 ppm Basis: USA. Occupational Exposure Limits (OSHA) - Table Z-2. Z37-40-1969 See 1910.1028. See Table Z-2 for limits applicable in the operations or sectors excluded in 1910.1028. The final benzene standard in 1910.1028 applies to all occupational exposures to benzene except some subsegments of industry where exposures are consistently under the action level (i.e., distribution and sale of fuels, sealed containers and pipelines, coke production, oil and gas drilling and production, natural gas processing, and the percentage exclusion for liquid mixtures); for the excepted subsegments, the benzene limits in Table Z-2 apply.
Regulatory reference (US-OSHA)	OSHA Annotated Table Z-2
USA - NIOSH - Occupational Exposure Limits	
NIOSH REL TWA [ppm]	0.1 ppm Basis: USA. NIOSH. Recommended Exposure Limits
NIOSH REL STEL [ppm]	1 ppm Basis: USA. NIOSH. Recommended Exposure Limits
Remark (NIOSH)	Potential Occupational Carcinogen. See Appendix A.

8.2. Appropriate engineering controls

Appropriate engineering controls	: Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work.
Environmental exposure controls	: Avoid release to the environment.

8.3. Individual protection measures/Personal protective equipment

Personal protective equipment:

Gloves. Protective clothing. Protective goggles. Self-contained breathing apparatus.

Materials for protective clothing:

Wear suitable protective clothing and gloves

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Hand protection:
Wear suitable protective clothing and gloves
Eye protection:
Wear eye protection. Chemical goggles or face shield with safety glasses
Skin and body protection:
Wear suitable protective clothing, gloves and eye/face protection
Respiratory protection:
In case of inadequate ventilation wear respiratory protection. Approved supplied air respirator

Personal protective equipment symbol(s):



SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Liquid
Appearance	: Liquid. clear.
Color	: Colorless
Odor	: Mixture contains one or more component(s) which have the following odour:
Odor threshold	: No data available
pH	: No data available
Melting point	: 5.5 °C (41.9 °F) - lit.
Freezing point	: No data available
Boiling point	: 80 °C (176 °F) - lit
Flash point	: -11 °C (12.2 °F) - closed cup
Relative evaporation rate (butyl acetate=1)	: No data available
Flammability (solid, gas)	: Not applicable. Highly flammable liquid and vapor.
Vapor pressure	: 221.3 hPa (166 mmHg) at 37.7 °C (99.9 °F); 99.5 hPa (74.6 mmHg) at 20 °C (68 °F)
Relative vapor density at 20°C	: No data available
Relative density	: No data available
Density	: 0.95 g/ml at 25 °C (77 °F) (Labeled)
Molecular mass	: 84.15 g/mol (Labeled)
Solubility	: No data available
Partition coefficient n-octanol/water (Log Pow)	: 2.13 at 25 °C (77 °F)
Auto-ignition temperature	: 562 °C (1,043.6 °F)
Decomposition temperature	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available
Explosion limits	: 1.3 – 8 % (V)
Explosive properties	: No data available
Oxidizing properties	: No data available

9.2. Other information

No additional information available

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SECTION 10: Stability and reactivity

10.1. Reactivity

Highly flammable liquid and vapor. May form flammable/explosive vapor-air mixture.

10.2. Chemical stability

Stable if stored under recommended conditions.

10.3. Possibility of hazardous reactions

No additional information available

10.4. Conditions to avoid

Open flame. Direct sunlight.

10.5. Incompatible materials

Acid chlorides, Acid anhydrides, Oxidizing agents, Alkali metals.

10.6. Hazardous decomposition products

Carbon oxides (CO, CO2).

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity (oral) : Not classified
Acute toxicity (dermal) : Not classified
Acute toxicity (inhalation) : Not classified

BENZENE-D6 "100%" (D, 99.96%) (+0.03% V/V TMS) (71-43-2)	
LD50 oral rat	> 5960 mg/kg male (OECD Test Guideline 401)
LD50 dermal rabbit	8263 mg/kg
LC50 Inhalation - Rat	43.7 mg/l/4h female - 4 h (OECD Test Guideline 403)
ATE US (oral)	2990 mg/kg body weight
ATE US (dermal)	8263 mg/kg body weight
ATE US (vapors)	44.7 mg/l/4h
ATE US (dust, mist)	44.7 mg/l/4h

BENZENE-D6 "100%" (D, 99.96%) (71-43-2)	
LD50 oral rat	> 5960 mg/kg male (OECD Test Guideline 401)
LD50 oral	1620 mg/kg
LD50 dermal rabbit	8263 mg/kg
LC50 Inhalation - Rat	43.7 mg/l/4h female - 4 h (OECD Test Guideline 403)
LC50 Inhalation - Rat (Vapours)	44.66 mg/l/4h
ATE US (dermal)	8263 mg/kg body weight
ATE US (vapors)	43.7 mg/l/4h
ATE US (dust, mist)	43.7 mg/l/4h

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Skin corrosion/irritation	: Causes skin irritation.
Serious eye damage/irritation	: Causes serious eye irritation.
Respiratory or skin sensitization	: Not classified
Germ cell mutagenicity	: May cause genetic defects (Dermal, Inhalation, oral).
Carcinogenicity	: May cause cancer (Dermal, Inhalation, oral).

BENZENE-D6 "100%" (D, 99.96%) (+0.03% V/V TMS) (71-43-2)	
NOAEL (chronic,oral,animal/male,2 years)	100 mg/kg body weight Rat - male and female - OECD Test Guideline 408
IARC group	1 - Carcinogenic to humans
National Toxicology Program (NTP) Status	Known Human Carcinogens

BENZENE-D6 "100%" (D, 99.96%) (71-43-2)	
NOAEL (chronic,oral,animal/male,2 years)	100 mg/kg body weight Rat - male and female - OECD Test Guideline 408
IARC group	1 - Carcinogenic to humans
National Toxicology Program (NTP) Status	Known Human Carcinogens
In OSHA Specifically Regulated Carcinogen list	Yes

Reproductive toxicity	: Not classified
STOT-single exposure	: Not classified
STOT-repeated exposure	: Not classified
Aspiration hazard	: May be fatal if swallowed and enters airways.
Viscosity, kinematic	: No data available
Potential Adverse human health effects and symptoms	: Inhalation of high concentrations of benzene may have an initial stimulatory effect on the central nervous system characterized by exhilaration, nervous excitation and/or giddiness, depression, drowsiness, or fatigue. The victim may experience tightness in the chest, breathlessness, and loss of consciousness. Tremors, convulsions and death due to respiratory paralysis or circulatory collapse can occur in a few minutes to several hours following severe exposures. Aspirations of small amounts of liquid immediately causes pulmonary edema and hemorrhage of pulmonary disease. Direct skin contact may cause erythema. Repeated or prolonged skin contact may result in drying, scaling dermatitis or development of secondary skin infections. The chief target organ is the hematopoietic system. Bleeding from the nose, gums, or mucous membranes and the development of purpuric spots, pancytopenia, leukopenia, thrombocytopenia, aplastic anemia and leukemia may occur as the condition progresses. The bone marrow may appear normal, aplastic or hyperplastic and may not correlate with peripheral blood-forming tissues. The onset of effects of prolonged benzene exposure may be delayed for months or years after the actual exposure has ceased. Blood disorders. Effects on humans. stomach. This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.
Symptoms/effects	: May cause genetic defects (in contact with skin, if swallowed, if inhaled).
Symptoms/effects after inhalation	: May be fatal if inhaled. May cause respiratory irritation. May cause cancer by inhalation.
Symptoms/effects after skin contact	: Causes skin irritation.
Symptoms/effects after eye contact	: Causes serious eye irritation.
Symptoms/effects after ingestion	: May be fatal if swallowed and enters airways.

SECTION 12: Ecological information

12.1. Toxicity

Ecology - water	: Toxic to aquatic life.
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BENZENE-D6 "100%" (D, 99.96%) (+0.03% V/V TMS) (71-43-2)	
LC50 - Fish [1]	5.3 mg/l

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EC50 - Crustacea [1]	17.2 mg/l Ceriodaphnia dubia (Water flea) - 48 h
EC50 - Other aquatic organisms [1]	29 mg/l Pseudokirchneriella subcapitata (green algae) - 72 h
EC50 - Crustacea [2]	100 mg/l Growth inhibition EC50 - Pseudokirchneriella subcapitata (green algae) - 72 h (OECD Test Guideline 201)
ErC50 algae	29 mg/l
NOEC chronic fish	0.8 mg/l

BENZENE-D6 "100%" (D, 99.96%) (71-43-2)	
LC50 - Fish [1]	5.3 mg/l
EC50 - Crustacea [1]	17.2 mg/l Ceriodaphnia dubia (Water flea) - 48 h
EC50 - Other aquatic organisms [1]	29 mg/l Pseudokirchneriella subcapitata (green algae) - 72 h
EC50 - Crustacea [2]	100 mg/l Growth inhibition EC50 - Pseudokirchneriella subcapitata (green algae) - 72 h (OECD Test Guideline 201)
ErC50 algae	29 mg/l
NOEC chronic fish	0.8 mg/l

12.2. Persistence and degradability

BENZENE-D6 "100%" (D, 99.96%) (+0.03% V/V TMS) (71-43-2)	
Persistence and degradability	Aerobic - exposure time: 28 d.
Biodegradation	96 % - Readily biodegradable (OECD Test Guideline 301F)

BENZENE-D6 "100%" (D, 99.96%) (71-43-2)	
Not rapidly degradable	
Persistence and degradability	Aerobic - exposure time: 28 d.
Biodegradation	96 % - Readily biodegradable (OECD Test Guideline 301F)

12.3. Bioaccumulative potential

BENZENE-D6 "100%" (D, 99.96%) (+0.03% V/V TMS) (71-43-2)	
BCF - Fish [1]	0.05 mg/l Leuciscus idus (Golden ofe) - 3 d
Bioconcentration factor (BCF REACH)	10
Partition coefficient n-octanol/water (Log Pow)	2.13 at 25 °C (77 °F)

BENZENE-D6 "100%" (D, 99.96%) (71-43-2)	
BCF - Fish [1]	0.05 mg/l Leuciscus idus (Golden ofe) - 3 d
Bioconcentration factor (BCF REACH)	10
Partition coefficient n-octanol/water (Log Pow)	2.13 at 25 °C (77 °F)

12.4. Mobility in soil

No additional information available

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12.5. Other adverse effects

Other adverse effects : Toxic to aquatic life with long lasting effects. Avoid release to the environment. Disposal must be done according to official regulations.

SECTION 13: Disposal considerations

13.1. Disposal methods

Regional legislation (waste) : Waste materials should be disposed of under conditions which meet Federal, State, and local environmental control regulations.

Product/Packaging disposal recommendations : Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material.

Additional information : Handle empty containers with care because residual vapors are flammable.

Ecology - waste materials : Dispose of as unused product.

SECTION 14: Transport information

In accordance with DOT / TDG / IMDG / IATA

14.1. UN number

DOT NA No : UN1114

UN-No. (TDG) : Not applicable

UN-No. (IMDG) : 1114

UN-No. (IATA) : 1114

14.2. UN proper shipping name

Proper Shipping Name (DOT) : Benzene

Proper Shipping Name (TDG) : Not applicable

Proper Shipping Name (IMDG) : BENZENE

Proper Shipping Name (IATA) : Benzene

14.3. Transport hazard class(es)

DOT

Transport hazard class(es) (DOT) : 3

Hazard labels (DOT) : 3



TDG

Transport hazard class(es) (TDG) : Not applicable

IMDG

Transport hazard class(es) (IMDG) : 3

Hazard labels (IMDG) : 3



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IATA

Transport hazard class(es) (IATA) : 3
Hazard labels (IATA) : 3



14.4. Packing group

Packing group (DOT) : II
Packing group (TDG) : Not applicable
Packing group (IMDG) : II
Packing group (IATA) : II

14.5. Environmental hazards

Other information : No supplementary information available.

14.6. Special precautions for user

DOT

UN-No.(DOT) : UN1114
DOT Special Provisions (49 CFR 172.102) : IB2 - Authorized IBCs: Metal (31A, 31B and 31N); Rigid plastics (31H1 and 31H2); Composite (31HZ1). Additional Requirement: Only liquids with a vapor pressure less than or equal to 110 kPa at 50 C (1.1 bar at 122 F), or 130 kPa at 55 C (1.3 bar at 131 F) are authorized.
T4 - 2.65 178.274(d)(2) Normal..... 178.275(d)(3)
TP1 - The maximum degree of filling must not exceed the degree of filling determined by the following: Degree of filling = $97 / 1 + a (tr - tf)$ Where: tr is the maximum mean bulk temperature during transport, and tf is the temperature in degrees celsius of the liquid during filling.
DOT Packaging Exceptions (49 CFR 173.xxx) : 150
DOT Packaging Non Bulk (49 CFR 173.xxx) : 202
DOT Packaging Bulk (49 CFR 173.xxx) : 242
DOT Quantity Limitations Passenger aircraft/rail (49 CFR 173.27) : 5 L
DOT Quantity Limitations Cargo aircraft only (49 CFR 175.75) : 60 L
DOT Vessel Stowage Location : B - (i) The material may be stowed "on deck" or "under deck" on a cargo vessel and on a passenger vessel carrying a number of passengers limited to not more than the larger of 25 passengers, or one passenger per each 3 m of overall vessel length; and (ii) "On deck only" on passenger vessels in which the number of passengers specified in paragraph (k)(2)(i) of this section is exceeded.
DOT Vessel Stowage Other : 40 - Stow "clear of living quarters"

TDG

Emergency Response Guide (ERG) Number : 130

IMDG

Limited quantities (IMDG) : 1 L
Excepted quantities (IMDG) : E2
Packing instructions (IMDG) : P001
IBC packing instructions (IMDG) : IBC02
Tank instructions (IMDG) : T4
Tank special provisions (IMDG) : TP1
EmS-No. (Fire) : F-E - FIRE SCHEDULE Echo - NON-WATER-REACTIVE FLAMMABLE LIQUIDS
EmS-No. (Spillage) : S-D - SPILLAGE SCHEDULE Delta - FLAMMABLE LIQUIDS
Stowage category (IMDG) : B
Stowage and handling (IMDG) : SW2
Flash point (IMDG) : -11°C c.c.

BENZENE-D6 "100%" (D, 99.96%) (+0.03% V/V TMS)

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Properties and observations (IMDG) : Colourless liquid with a characteristic odour. Flashpoint: -11°C c.c. Explosive limits: 1.4% to 8%
Freezing point 5°C, flashes below its freezing point. Immiscible with water. Narcotic. Exposure to this substance may produce serious chronic effects of a toxic nature.

MFAG-No : 130

IATA

PCA Excepted quantities (IATA) : E2
PCA Limited quantities (IATA) : Y341
PCA limited quantity max net quantity (IATA) : 1L
PCA packing instructions (IATA) : 353
PCA max net quantity (IATA) : 5L
CAO packing instructions (IATA) : 364
CAO max net quantity (IATA) : 60L
ERG code (IATA) : 3H

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable

SECTION 15: Regulatory information

15.1. US Federal regulations

BENZENE-D6 "100%" (D, 99.96%) (+0.03% V/V TMS) (71-43-2)

Subject to reporting requirements of United States SARA Section 313
Listed on EPA Hazardous Air Pollutant (HAPS)

CERCLA RQ	10 lb
SARA Section 311/312 Hazard Classes	Fire hazard Immediate (acute) health hazard Delayed (chronic) health hazard

Commercial status of components according to the United States Environmental Protection Agency's Toxic Substances Control Act (TSCA):

Name	CAS-No.	Listing	Commercial status	Flags
BENZENE-D6 "100%" (D, 99.96%)	71-43-2	Present	Active	

BENZENE-D6 "100%" (D, 99.96%) (71-43-2)

Subject to reporting requirements of United States SARA Section 313
Listed on EPA Hazardous Air Pollutant (HAPS)

CERCLA RQ	10 lb
SARA Section 311/312 Hazard Classes	Fire hazard Immediate (acute) health hazard Delayed (chronic) health hazard

15.2. International regulations

CANADA

BENZENE-D6 "100%" (D, 99.96%) (+0.03% V/V TMS) (71-43-2)

Listed on the Canadian DSL (Domestic Substances List)

BENZENE-D6 "100%" (D, 99.96%) (71-43-2)

Listed on the Canadian DSL (Domestic Substances List)

BENZENE-D6 "100%" (D, 99.96%) (+0.03% V/V TMS)

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EU-Regulations

No additional information available

National regulations

BENZENE-D6 "100%" (D, 99.96%) (+0.03% V/V TMS) (71-43-2)
Listed on IARC (International Agency for Research on Cancer) Listed as carcinogen on NTP (National Toxicology Program) Listed on INSQ (Mexican National Inventory of Chemical Substances)

BENZENE-D6 "100%" (D, 99.96%) (71-43-2)
Listed on IARC (International Agency for Research on Cancer) Listed as carcinogen on NTP (National Toxicology Program) Listed on INSQ (Mexican National Inventory of Chemical Substances) Listed on TECI (Thailand Existing Chemicals Inventory)

15.3. US State regulations

BENZENE-D6 "100%" (D, 99.96%) (+0.03% V/V TMS) (71-43-2)	
U.S. - California - Proposition 65 - Carcinogens List	Yes
U.S. - California - Proposition 65 - Developmental Toxicity	Yes
U.S. - California - Proposition 65 - Reproductive Toxicity - Female	No
U.S. - California - Proposition 65 - Reproductive Toxicity - Male	Yes
No significant risk level (NSRL)	6.4 µg/day (oral); 13 µg/day (inhalation)
Maximum allowable dose level (MADL)	24 µg/day (oral); 49 µg/day (inhalation)
State or local regulations	U.S. - Massachusetts - Right To Know List U.S. - New Jersey - Right to Know Hazardous Substance List U.S. - Pennsylvania - RTK (Right to Know) List

BENZENE-D6 "100%" (D, 99.96%) (71-43-2)					
U.S. - California - Proposition 65 - Carcinogens List	U.S. - California - Proposition 65 - Developmental Toxicity	U.S. - California - Proposition 65 - Reproductive Toxicity - Female	U.S. - California - Proposition 65 - Reproductive Toxicity - Male	No significant risk level (NSRL)	Maximum allowable dose level (MADL)
Yes	Yes	Yes	Yes	6.4 µg/day (oral); 13 µg/day (inhalation)	24 µg/day (oral); 49 µg/day (inhalation)

Component	State or local regulations
BENZENE-D6 "100%" (D, 99.96%)(71-43-2)	U.S. - Massachusetts - Right To Know List; U.S. - New Jersey - Right to Know Hazardous Substance List; U.S. - Pennsylvania - RTK (Right to Know) List

SECTION 16: Other information

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Revision date : 05/17/2023

BENZENE-D6 "100%" (D, 99.96%) (+0.03% V/V TMS)

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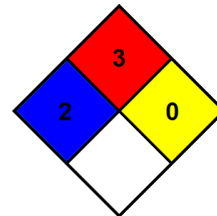
Other information : This product is not radioactive. The data given for this product are those of the corresponding unlabeled compound, unless specifically indicated otherwise. Health and safety data for labeled compounds are generally not available, but are assumed to be similar or identical to the corresponding unlabeled compound.

Full text of H-phrases	
H225	Highly flammable liquid and vapor
H304	May be fatal if swallowed and enters airways
H315	Causes skin irritation
H319	Causes serious eye irritation
H340	May cause genetic defects
H350	May cause cancer
H401	Toxic to aquatic life

NFPA health hazard : 2 - Materials that, under emergency conditions, can cause temporary incapacitation or residual injury.

NFPA fire hazard : 3 - Liquids and solids (including finely divided suspended solids) that can be ignited under almost all ambient temperature conditions.

NFPA reactivity : 0 - Material that in themselves are normally stable, even under fire conditions.



Hazard Rating

Health : 2 Moderate Hazard - Temporary or minor injury may occur

Flammability : 3 Serious Hazard - Materials capable of ignition under almost all normal temperature conditions. Includes flammable liquids with flash points below 73 F and boiling points above 100 F. as well as liquids with flash points between 73 F and 100 F. (Classes IB IC)

Physical : 0 Minimal Hazard - Materials that are normally stable, even under fire conditions, and will NOT react with water, polymerize, decompose, condense, or self-react. Non-Explosives.

Safety Data Sheet (SDS), USA

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.