

Revision date: 29/01/2016

Safety Data Sheet

according to Regulation (EC) No. 453/2010 and according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Supersedes: 27/02/2012

Version: 3.0

Date of issue: 30/03/2011

DLM-1943

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product form : Substance

Substance name : ISOPHORONE (3-METHYL-D3;2,4,4,6,6-D5,97%)

 EC index no
 : 606-012-00-8 (Unlabeled)

 EC no
 : 201-126-0 (Unlabeled)

 CAS No
 : 78-59-1 (Unlabeled)

Product code : DLM-1943 Formula : C9H6D8O

1.2. Relevant identified uses of the substance or mixture and uses advised against

1.2.1. Relevant identified uses

Industrial/Professional use spec : For professional use only.

1.2.2. Uses advised against

No additional information available

1.3. Details of the supplier of the safety data sheet

Cambridge Isotope Laboratories, Inc.

50 Frontage Road Andover, MA 01810

USA

USA: 1-800-322-1174 Int: 1-978-749-8000 cilsales@isotope.com www.isotope.com

Emergency telephone number

Emergency numbers:

Chemtrec: 1-800-424-9300 (24 hours) International: 1-703-741-5970 (24 hours)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP]

Acute Tox. 4 (Oral) H302 Acute Tox. 4 (Dermal) H312 Eye Irrit. 2 H319 Carc. 2 H351 STOT SE 3 H335

Full text of H-phrases: see section 16

Classification according to Directive 67/548/EEC or 1999/45/EC

Carc.Cat.3; R40 Xn; R21/22 Xi; R36/37

Full text of R-phrases: see section 16

Classification (GHS-US)

Acute Tox. 4 (Oral) H302 Acute Tox. 4 (Dermal) H312 Eye Irrit. 2A H319 Carc. 2 H351 STOT SE 3 H335

Adverse physicochemical, human health and environmental effects

Lungs, Liver, Kidney, Central nervous system.

04/02/2016 EN (English US) 1/9

Safety Data Sheet

according to Regulation (EC) No. 453/2010 and according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

2.2. Label elements

Labeling according to Regulation (EC) No. 1272/2008 [CLP]

Hazard pictograms (CLP)





Signal word (CLP) : Warning

Hazard statements (CLP) : H302+H312 - Harmful if swallowed or in contact with skin

H319 - Causes serious eye irritation H335 - May cause respiratory irritation H351 - Suspected of causing cancer

Precautionary statements (CLP) : P261 - Avoid breathing dust, fume, gas, mist, spray, vapors

P264 - Wash both hands thoroughly after handling P270 - Do no eat, drink or smoke when using this product P271 - Use only outdoors or in a well-ventilated area

P280 - Wear eye protection, face protection, protective clothing, protective gloves P301+P312 - IF SWALLOWED: Call a POISON CENTER/doctor/.../if you feel unwell

P302+P352 - IF ON SKIN: Wash with plenty of water/...

P304+P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing

GHS-US labeling

Hazard pictograms (GHS-US)





GHS07

GHS08

Signal word (GHS-US) : Warning

Hazard statements (GHS-US) : H302+H312 - Harmful if swallowed or in contact with skin

H319 - Causes serious eye irritation H335 - May cause respiratory irritation

H351 - Suspected of causing cancer (Dermal, Inhalation, oral)

Precautionary statements (GHS-US) : P201 - Obtain special instructions before use

P202 - Do not handle until all safety precautions have been read and understood

P261 - Avoid breathing dust, fume, gas, mist, spray, vapors P264 - Wash Both hands thoroughly after handling P270 - Do no eat, drink or smoke when using this product P271 - Use only outdoors or in a well-ventilated area

P280 - Wear eye protection, face protection, protective clothing, protective gloves

P301+P312 - IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell

P302+P352 - IF ON SKIN: Wash with plenty of soap and water

P304+P340 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable

for breathing

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 P312 - Call a POISON CENTER/doctor/physician if you feel unwell P321 - Specific treatment (see Hazard pictograms (CLP) on this label)

P330 - If swallowed, rinse mouth

P337+P313 - If eye irritation persists: Get medical advice/attention P362+P364 - Take off contaminated clothing and wash it before reuse P403+P233 - Store in a well-ventilated place. Keep container tightly closed

P405 - Store locked up

P501 - Dispose of contents/container to Comply with applicable regulations.

2.3. Other hazards

No additional information available

SECTION 3: Composition/information on ingredients

3.1. Substances

04/02/2016 EN (English US) 2/9

Safety Data Sheet

according to Regulation (EC) No. 453/2010 and according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Name	Product identifier	%	Classification according to Directive 67/548/EEC
ISOPHORONE (3-METHYL-D3;2,4,4,6,6-D5,97%) (Main constituent)	(CAS No) 78-59-1 (Unlabeled) (EC no) 201-126-0 (Unlabeled) (EC index no) 606-012-00-8 (Unlabeled)	100	Carc.Cat.3; R40 Xn; R21/22 Xi; R36/37
Name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
ISOPHORONE (3-METHYL-D3;2,4,4,6,6-D5,97%) (Main constituent)	(CAS No) 78-59-1 (Unlabeled) (EC no) 201-126-0 (Unlabeled) (EC index no) 606-012-00-8 (Unlabeled)	100	Acute Tox. 4 (Oral), H302 Acute Tox. 4 (Dermal), H312 Eye Irrit. 2, H319 Carc. 2, H351 STOT SE 3, H335

Full text of R-, H- and EUH-phrases: see section 16

Name	Product identifier	%	Classification (GHS-US)
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Full text of H-phrases: see section 16

3.2. Mixtures

Not applicable

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures general : Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

First-aid measures after inhalation : If breathed in, move person to fresh air. If not breathing, give artificial respiration. Consult a

physician.

First-aid measures after skin contact : Wash with soap and plenty of water. Consult a physician.

First-aid measures after eye contact : Flush eye with water for 15 minutes. Get medical attention.

First-aid measures after ingestion : Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a

physician.

4.2. Most important symptoms and effects, both acute and delayed

Symptoms/injuries after inhalation : May be harmful if inhaled. Causes respiratory tract irritation. Symptoms/injuries after skin contact : Harmful if absorbed through skin. Causes skin irritation.

Symptoms/injuries after eye contact : Causes eye irritation. Symptoms/injuries after ingestion : Harmful if swallowed.

4.3. Indication of any immediate medical attention and special treatment needed

No additional information available

SECTION 5: Firefighting measures

5.1. Extinguishing media

suitable extinguishing media : Use water spray, alcohol-resistant foam, dry chemical, or carbon dioxide.

5.2. Special hazards arising from the substance or mixture

No additional information available

5.3. Advice for firefighters

Protection during firefighting : Do not enter fire area without proper protective equipment, including respiratory protection.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

Emergency procedures : Use personal protective equipment. Avoid breathing vapors, mist, or gas. Ensure adequate

ventilation.

6.1.2. For emergency responders

No additional information available

6.2. Environmental precautions

Do not let product enter drains.

04/02/2016 EN (English US) 3/9

Safety Data Sheet

according to Regulation (EC) No. 453/2010 and according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Methods and material for containment and cleaning up

For containment

: Soak up with inert absorbent material and dispose of as hazardous waste. Keep in suitable, closed containers for disposal.

Reference to other sections

No additional information available

SECTION 7: Handling and storage

Precautions for safe handling

Additional hazards when processed

: Avoid contact with skin and eyes. Avoid inhalation of vapour or mist. Normal measures for

Hygiene measures Handle in accordance with good industrial hygiene and safety practice. Wash hands before

breaks and at the end of workday.

Conditions for safe storage, including any incompatibilities

Storage conditions : Store at room temperature away from light and moisture.

7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

Control parameters

ISOPHORONE (3-METHYL-D3;2,4,4,6,6-D5,97%) (78-59-1 (Unlabeled))		
Italy - Portugal - USA ACGIH	ACGIH TWA (ppm)	5 ppm Central Nervous System impairment; Upper Respiratory Tract irritation; Eye irritation; Mailaise; Fatigue; Confirmed animal carcinogen with unknown relevance to humans
USA NIOSH	NIOSH REL (TWA) (mg/m3)	23 The value in mg/m3 is approximate.
USA NIOSH	NIOSH REL (TWA) (ppm)	4 ppm
USA OSHA	OSHA PEL (TWA) (mg/m3)	140 The value in mg/m3 is approximate.
USA OSHA	OSHA PEL (TWA) (ppm)	25 ppm

Exposure controls

Personal protective equipment : Safety glasses. Gloves. Respiratory protection of the dependent type. Protective clothing.









Hand protection : Wear suitable protective clothing and gloves.

Wear safety glasses with side shields (or goggles) and a face shield. Eye protection

Skin and body protection Choose body protection according to the amount and concentration of the dangerous substance

at the work place.

Respiratory protection When appropriate, use NIOSH/CEN approved respirator.

SECTION 9: Physical and chemical properties

Information on basic physical and chemical properties

Physical state : Liquid : Liquid, clear, **Appearance**

: 146.26 g/mol (Unlabeled) Molecular mass

Color : Light yellow. Odor : No data available Odor threshold No data available рΗ : No data available Relative evaporation rate (butyl acetate=1) : No data available : -8 °C (18 °F) - lit Melting point Freezing point : No data available

: 213 - 214 °C (415 - 417 °F) - lit **Boiling point** : 96.0 °C (204.8 °F) - closed cup Flash point

Self ignition temperature : 462 °C (863.6 °F) Decomposition temperature : No data available Flammability (solid, gas) : No data available

Vapor pressure : 1.3 hPa (1.0 mmHg) at 38.0 °C (100.4 °F)

04/02/2016 EN (English US) 4/9

Safety Data Sheet

according to Regulation (EC) No. 453/2010 and according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Relative vapor density at 20 °C : No data available Relative density : No data available

Density : 0.923 g/ml at 25.0 °C (77 °F)

Solubility : No data available Log Pow : No data available Log Kow : No data available : No data available Viscosity, kinematic : No data available Viscosity, dynamic Explosive properties : No data available : No data available Oxidizing properties Explosive limits : 0.8 - 3.8 % (V)

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

No additional information available

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

Not available.

10.5. Incompatible materials

Strong oxidizing agents, Strong acids, Strong bases.

10.6. Hazardous decomposition products

formed under fire conditions: Carbon oxides.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Harmful if swallowed. Harmful in contact with skin.

ISOPHORONE (3-METHYL-D3;2,4,4,6,6-D5,97%) (78-59-1 (Unlabeled))	
LD50 oral rat	1870 mg/kg
LD50 dermal rabbit	1382 mg/kg
ATE (oral)	1870.000 mg/kg body weight
ATE (dermal)	1382.000 mg/kg body weight

Skin corrosion/irritation : Not classified

Skin - rabbit - Mild skin irritation - 24 h

Serious eye damage/irritation : Causes serious eye irritation.

Eyes - rabbit - Eye irritation - 24 h

Respiratory or skin sensitization : Not available

No data available

Germ cell mutagenicity : Not available

Carcinogenicity : This product is or contains a component that has been reported to be possibly carcinogenic

based on its IARC, ACGIH, NTP, or EPA classification. Limited evidence of carcinogenicity in

animal studies.

Reproductive toxicity : Not available

Specific target organ toxicity (single exposure) : May cause respiratory irritation.

No data available

Specific target organ toxicity (repeated

exposure)

Not classifiedNo data available

. Not aloogified

Aspiration hazard : Not classified

Potential Adverse human health effects and

symptoms

Burning sensation. Cough. Wheezing. Shortness of breath. Headache. Nausea. Vomiting.

Central nervous system depression. Narcosis.

Symptoms/injuries after inhalation : May be harmful if inhaled. Causes respiratory tract irritation. Symptoms/injuries after skin contact : Harmful if absorbed through skin. Causes skin irritation.

04/02/2016 EN (English US) 5/9

Safety Data Sheet

according to Regulation (EC) No. 453/2010 and according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Symptoms/injuries after eye contact : Causes eye irritation.
Symptoms/injuries after ingestion : Harmful if swallowed.

SECTION 12: Ecological information

12.1. Toxicity

ISOPHORONE (3-METHYL-D3;2,4,4,6,6-D5,97%) (78-59-1 (Unlabeled))	
LC50 fish 1	145 mg/l Pimephales promelas (fathead minnow) - 96 h
EC50 Daphnia 1	120 mg/l Daphnia magna (Water flea) - 48 h
NOEC (chronic)	170 mg/l Cyprinodon variegatus (sheephead minnow) - 96 h

12.2. Persistence and degradability

ISOPHORONE (3-METHYL-D3;2,4,4,6,6-D5,97%) (78-59-1 (Unlabeled))		
	Persistence and degradability	Not available.

12.3. Bioaccumulative potential

ISOPHORONE (3-METHYL-D3;2,4,4,6,6-D5,97%) (78-59-1 (Unlabeled))	
BCF fish 1	0.0924 mg/l Lepomis macrochirus (Bluegill) - 14d
Bioconcentration factor (BCF REACH)	7

12.4. Mobility in soil

ISOPHORONE (3-METHYL-D3;2,4,4,6,6-D5,97%) (78-59-1 (Unlabeled))		
	Ecology - soil	Not available.

12.5. Results of PBT and vPvB assessment

No additional information available

12.6. Other adverse effects

Other adverse effects : Not available.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Regional legislation (waste) : Waste materials should be disposed of under conditions which meet Federal, State, and Local

: 9 - Class 9 - Miscellaneous hazardous material 49 CFR 173.140

environmental control regulations.

Waste disposal recommendations : Dispose in a safe manner in accordance with local/national regulations.

SECTION 14: Transport information

In accordance with ADR / RID / ADNR / IMDG / ICAO / IATA

14.1. UN number

UN-No.(DOT) : 3082 DOT NA no. UN3082

14.2. UN proper shipping name

DOT Proper Shipping Name : Environmentally hazardous substances, liquid, n.o.s.

Department of Transportation (DOT) Hazard

Classes

Hazard labels (DOT) : 9 - Class 9 (Miscellaneous dangerous materials)



DOT Symbols : G - Identifies PSN requiring a technical name

Packing group (DOT) : III - Minor Danger

04/02/2016 EN (English US) 6/9

Safety Data Sheet

according to Regulation (EC) No. 453/2010 and according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

DOT Special Provisions (49 CFR 172.102)

: 8 - A hazardous substance that is not a hazardous waste may be shipped under the shipping description "Other regulated substances, liquid or solid, n.o.s.", as appropriate. In addition, for solid materials, special provision B54 applies.

146 - This description may be used for a material that poses a hazard to the environment but does not meet the definition for a hazardous waste or a hazardous substance, as defined in 171.8 of this subchapter, or any hazard class as defined in Part 173 of this subchapter, if it is designated as environmentally hazardous by the Competent Authority of the country of origin, transit or destination.

173 - An appropriate generic entry may be used for this material.

335 - Mixtures of solids that are not subject to this subchapter and environmentally hazardous liquids or solids may be classified as "Environmentally hazardous substances, solid, n.o.s," UN3077 and may be transported under this entry, provided there is no free liquid visible at the time the material is loaded or at the time the packaging or transport unit is closed. Each transport unit must be leak-proof when used as bulk packaging.

IB3 - Authorized IBCs: Metal (31A, 31B and 31N); Rigid plastics (31H1 and 31H2); Composite (31HZ1 and 31HA2, 31HB2, 31HN2, 31HD2 and 31HH2). 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, except for UN2672 (also see Special Provision IP8 in Table 2 for UN2672).

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. TP29 - A portable tank having a minimum test pressure of 1.5 bar (150.0 kPa) may be used provided the calculated test pressure is 1.5 bar or less based on the MAWP of the hazardous materials, as defined in 178.275 of this subchapter, where the test pressure is 1.5 times the

DOT Packaging Exceptions (49 CFR 173.xxx) : 155
DOT Packaging Non Bulk (49 CFR 173.xxx) : 203
DOT Packaging Bulk (49 CFR 173.xxx) : 241
DOT RQ : 5000 lbs
Marine pollutant : No

14.3. Additional information

Other information : No supplementary information available.

Special transport precautions : IMDG/IATA - Not dangerous goods.

Overland transport

Packing group (ADR) : III

Class (ADR) : 9 - Miscellaneous dangerous substances and articles

Hazard identification number (Kemler No.) : 90
Classification code (ADR) : M6

Danger labels (ADR) : 9 - Miscellaneous dangerous compounds



Orange plates

90 3082

Tunnel restriction code : E
Limited quantities (ADR) 5L
EAC : •3Z
Excepted quantities (ADR) : E1

Transport by sea

DOT Vessel Stowage Location : A - The material may be stowed "on deck" or "under deck" on a cargo vessel and on a

passenger vessel.

MFAG-No : 171

Air transport

DOT Quantity Limitations Passenger aircraft/rail : No limit

(49 CFR 173.27)

04/02/2016 EN (English US) 7/9

Safety Data Sheet

according to Regulation (EC) No. 453/2010 and according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

DOT Quantity Limitations Cargo aircraft only (49 : No limit

CFR 175.75)

Civil Aeronautics Law : Miscellaneous dangerous substances & articles

14.4. Environmental hazards

Other information : No supplementary information available.

14.5. Special precautions for user

Special transport precautions : IMDG/IATA - Not dangerous goods.

14.6. 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

ISOPHORONE (3-METHYL-D3;2,4,4,6,6-D5,97%) (78-59-1 (Unlabeled))

SARA Section 311/312 Hazard Classes Immediate (acute) health hazard

15.2. International regulations

CANADA

ISOPHORONE (3-METHYL-D3;2,4,4,6,6-D5,97%) (78-59-1 (Unlabeled))

Listed on the Canadian DSL (Domestic Substances List) inventory.

15.2.1. National regulations

No additional information available

15.3. US State regulations

ISOPHORONE (3-METHYL-D3;2,4,4,6,6-D5,97%)(78-59-1 (Unlabeled))	
State or local regulations	U.S Massachusetts - Right To Know List U.S Pennsylvania - RTK (Right to Know) List U.S New Jersey - Right to Know Hazardous Substance List This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

SECTION 16: Other information

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 R-, H- and EUH-phrases::

Acute Tox. 4 (Dermal)	Acute toxicity (dermal) Category 4
Acute Tox. 4 (Oral)	Acute toxicity (oral) Category 4
Carc. 2	Carcinogenicity Category 2
Eye Irrit. 2	Serious eye damage/eye irritation Category 2
STOT SE 3	Specific target organ toxicity (single exposure) Category 3
H302	Harmful if swallowed
H312	Harmful in contact with skin
H319	Causes serious eye irritation
H335	May cause respiratory irritation
H351	Suspected of causing cancer
R21/22	Harmful in contact with skin and if swallowed
R36/37	Irritating to eyes and respiratory system
R40	Limited evidence of a carcinogenic effect
Xi	Irritant
Xn	Harmful

04/02/2016 EN (English US) 8/9

Safety Data Sheet

according to Regulation (EC) No. 453/2010 and according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

NFPA health hazard : 2 - Intense or continued exposure could cause temporary incapacitation or possible residual injury unless prompt

modical attention is given

medical attention is given.

NFPA fire hazard : 1 - Must be preheated before ignition can occur.

: 0 - Normally stable, even under fire exposure conditions,

and are not reactive with water.



HMIS III Rating

NFPA reactivity

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

Flammability : 1 Slight Hazard
Physical : 0 Minimal Hazard

CIL Multi-Solvent Mixture SDS

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

04/02/2016 EN (English US) 9/9