

## 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

Date of issue: 10/12/2015 Revision date: : Version: 1.0

**ULM-9687-S** 

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

1.1. Product identifier

Product form : Mixture

Product name. : HEXAMETHYLCYCLOTRISILOXANE "D3" UNLABELED 100 UG/ML IN MTBE

Product code : ULM-9687-S

#### 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 <a href="mailto:cilsales@isotope.com">cilsales@isotope.com</a> 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]

Flam. Liq. 2 H225 Skin Irrit. 2 H315

Full text of H-phrases: see section 16

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

F; R11 Xn; R22 Xi; R38

Full text of R-phrases: see section 16

## **GHS-US** classification

Flam. Liq. 2 H225 Skin Irrit. 2 H315

## Adverse physicochemical, human health and environmental effects

Kidney, Central nervous system.

### 2.2. Label elements

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

Hazard pictograms (CLP)





GHS02

Signal word (CLP) : Danger

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Hazard statements (CLP) : H225 - Highly flammable liquid and vapour

H315 - Causes skin irritation

Precautionary statements (CLP) : P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No

smoking

P233 - Keep container tightly closed

P240 - Ground/bond container and receiving equipment
P241 - Use explosion-proof electrical equipment
P264 - Wash Both hands thoroughly after handling
P280 - Wear protective clothing, protective gloves
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

#### **GHS-US** labelling

Hazard pictograms (GHS-US)





GHS07

Signal word (GHS-US) : Danger

Hazard statements (GHS-US) : H225 - Highly flammable liquid and vapour

H315 - Causes skin irritation

Precautionary statements (GHS-US) : P210 - Keep away from heat, hot surfaces, open flames, sparks. - No smoking

P233 - Keep container tightly closed

P240 - Ground/bond container and receiving equipment P241 - Use explosion-proof electrical equipment

P242 - Use only non-sparking tools

P243 - Take precautionary measures against static discharge

P264 - Wash Both hands thoroughly after handling P280 - Wear protective clothing, protective gloves

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

P303+P361+P353 - IF ON SKIN (or hair): Remove/Take off immediately all contaminated

clothing. Rinse skin with water/shower

P321 - Specific treatment (see Hazard pictograms (CLP) on this label)
P332+P313 - If skin irritation occurs: Get medical advice/attention
P362 - Take off contaminated clothing and wash before reuse

P370+P378 - In case of fire: Use Use personal protective equipment as required for extinction

P403+P235 - Store in a well-ventilated place. Keep cool

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

Not applicable

### 3.2. Mixture

Name	Product identifier	%	Classification according to Directive 67/548/EEC
METHYL TERT-BUTYL ETHER UNLABELED	(CAS No) 1634-04-4 (EC no) 216-653-1 (EC index no) 603-181-00-X	99.9865	Xn; R22 Xi; R38
HEXAMETHYLCYCLOTRISILOXANE "D3" UNLABELED	(CAS No) 541-05-9 (EC no) 208-765-4	0.0135	F; R11
Name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
METHYL TERT-BUTYL ETHER UNLABELED	(CAS No) 1634-04-4 (EC no) 216-653-1 (EC index no) 603-181-00-X	99.9865	Flam. Liq. 2, H225 Skin Irrit. 2, H315
HEXAMETHYLCYCLOTRISILOXANE "D3" UNLABELED	(CAS No) 541-05-9 (EC no) 208-765-4	0.0135	Flam. Sol. 1, H228

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Name	Product identifier	%	GHS-US classification
METHYL TERT-BUTYL ETHER UNLABELED	(CAS No) 1634-04-4	99.9865	Flam. Liq. 2, H225 Acute Tox. Not classified (Oral) Skin Irrit. 2, H315

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

#### **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.

: Wash with soap and plenty of water. Consult a physician.

First-aid measures after skin contact First-aid measures after eye contact

: Flush eyes with water as a precaution.

First-aid measures after ingestion

Do NOT induce vomiting. 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 Symptoms/injuries after eye contact : Causes skin irritation.: Causes eye irritation.

Symptoms/injuries after ingestion

: May be 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

Fire hazard

: Highly flammable liquid and vapour.

Explosion hazard

: May form flammable/explosive vapour-air mixture.

Reactivity

: Vapors may form explosive mixture with air.

#### 5.3. Advice for firefighters

Firefighting instructions

: Use water spray to cool unopened containers.

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

General measures

: Remove ignition sources. Use special care to avoid static electric charges. No naked lights. No smoking.

## 6.1.1. For non-emergency personnel

Emergency procedures

: Use personal protective equipment. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas.

#### 6.1.2. For emergency responders

No additional information available

#### 6.2. Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

#### 6.3. Methods and material for containment and cleaning up

For containment

: Contain spillage, and then collect with an electrically protected vacuum cleaner or by wetbrushing and place in container for disposal according to local regulations.

#### 6.4. Reference to other sections

No additional information available

#### **SECTION 7: Handling and storage**

## 7.1. Precautions for safe handling

Additional hazards when processed

: Handle empty containers with care because residual vapours are flammable.

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Precautions for safe handling : No naked lights. No smoking. Use only non-sparking tools.

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

breaks and at the end of workday.

#### 7.2. Conditions for safe storage, including any incompatibilities

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

Incompatible materials : Heat sources

#### 7.3. Specific end use(s)

No additional information available

#### **SECTION 8: Exposure controls/personal protection**

## 8.1. Control parameters

#### HEXAMETHYLCYCLOTRISILOXANE "D3" UNLABELED 100 UG/ML IN MTBE

#### **METHYL TERT-BUTYL ETHER UNLABELED (1634-04-4)**

#### 8.2. Exposure controls

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







Hand protection : Wear suitable protective clothing and gloves.

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

Skin and body protection : Wear suitable protective clothing.

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

## **SECTION 9: Physical and chemical properties**

### 9.1. Information on basic physical and chemical properties

The properties listed below are for the solvent, the main component of this mixture. Physical state : Liquid Appearance : Liquid. Molecular mass : 88.15 g/mol Colour : Colourless. Odour : No data available. Odour threshold : No data available : No data available pН Relative evaporation rate (butylacetate=1) : No data available : No data available Melting point Freezing point : No data available

Boiling point :  $55 - 56 \,^{\circ}\text{C} \, (131 - 133 \,^{\circ}\text{F}) - \text{lit}$  Flash point :  $-33.0 \,^{\circ}\text{C} \, (-27.4 \,^{\circ}\text{F}) - \text{closed cup}$ 

Self ignition temperature : 374 °C (705 °F)

Decomposition temperature : No data available

Flammability (solid, gas) : Highly flammable liquid and vapour

Vapour pressure : 1018.7 hPa (764.1 mmHg) at 55°C (131°F), 279.2 hPa (209.4 mmHg) at 55°C (131°F)

Relative vapour density at 20 °C : No data available : No data available Relative density Solubility : No data available Log Pow : 0.94 - 1.77 Log Kow : No data available Viscosity, kinematic : No data available : No data available Viscosity, dynamic Explosive properties : No data available

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Oxidising properties : No data available Explosive limits : 1.6 - 15.1 % (V)

#### 9.2. Other information

No additional information available

## SECTION 10: Stability and reactivity

#### 10.1. Reactivity

Vapors may form explosive mixture with air.

#### 10.2. Chemical stability

See storage and expiration date on CoA.

#### 10.3. Possibility of hazardous reactions

No additional information available

#### 10.4. Conditions to avoid

Open flame. Direct sunlight.

#### 10.5. Incompatible materials

Oxidizing agents, Strong acids.

## 10.6. Hazardous decomposition products

May release flammable gases.

## **SECTION 11: Toxicological information**

## 11.1. Information on toxicological effects

Acute toxicity : Not classified

HEXAMETHYLCYCLOTRISILOXANE "D3"	IEXAMETHYLCYCLOTRISILOXANE "D3" UNLABELED 100 UG/ML IN MTBE	
LD50 oral rat	4000 mg/kg	
LC50 inhalation rat (ppm)	23576 ppm - 4h	
ATE (oral)	4000.000 mg/kg bodyweight	

METHYL TERT-BUTYL ETHER UNLABELED (1634-04-4)	
LD50 oral rat	4000 mg/kg
LC50 inhalation rat (ppm)	23576 ppm - 4h
ATE (oral)	4000,000 ma/ka bodyweiaht

Skin corrosion/irritation : Causes skin irritation.

Skin - rabbit - Skin irritation

Serious eye damage/irritation : Not classified

Eyes - rabbit - No eye irritation

Respiratory or skin sensitisation : Will not occur.

No data available

Germ cell mutagenicity : Not available

Carcinogenicity : This product is or contains a component that is not classifiable as to its carcinogenicity on its

IARC, ACGIH, NTP, or EPA classification.

Reproductive toxicity : Not available Specific target organ toxicity (single exposure) : Not classified

No data available

Specific target organ toxicity (repeated

exposure)

Not classifiedNo data available

Aspiration hazard : Not classified

Potential Adverse human health effects and

symptoms

: Nausea. Vomiting. Dizziness. Central nervous system depression. Pneumonitis. The chemical, physical, and toxicological properties have not been thoroughly investigated.

IARC group :

Symptoms/injuries after inhalation : May be harmful if inhaled. Causes respiratory tract irritation.

Symptoms/injuries after skin contact : Causes skin irritation.

Symptoms/injuries after eye contact : Causes eye irritation.

Symptoms/injuries after ingestion : May be harmful if swallowed.

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SECT	ION 12: Ecological information	
12 1	Toxicity	

HEXAMETHYLCYCLOTRISILOXANE "D3" U	JNLABELED 100 UG/ML IN MTBE

LC50 fishes 1 672 mg/l Pimephales promelas (fathead minnow) - 96h

#### **METHYL TERT-BUTYL ETHER UNLABELED (1634-04-4)**

LC50 fishes 1 672 mg/l Pimephales promelas (fathead minnow) - 96h

HEXAMETHYLCYCLOTRISILOXANE "D3" UNLABELED (541-05-9)	
LC50 fishes 1	> 1.6 mg/l Oncorhynchus mykiss (rainbow trout) 96 h
EC50 Daphnia 1	> 1.6 mg/l Daphnia magna (Water flea) - 48 h
EC50 other aquatic organisms 1	> 1.6 mg/l Pseudokirchneriella subcapitata - 72 h
EC50 other aquatic organisms 2	> 100 mg/l Sludge Treatment - 3 h
ErC50 (algae)	- 72 h, Pseudokirchneriella subcapitata -
NOEC (chronic)	- > 100 mg/l - 3 h, Respiration Inhibition -

## 12.2. Persistence and degradability

#### HEXAMETHYLCYCLOTRISILOXANE "D3" UNLABELED 100 UG/ML IN MTBE

Persistence and degradability Not available.

#### METHYL TERT-BUTYL ETHER UNLABELED (1634-04-4)

Persistence and degradability Not available.

## 12.3. Bioaccumulative potential

HEXAMETHYLCYCLOTRISILOXANE "D3" UN	LABELED 100 UG/ML IN MTBE
Log Pow	0.94 - 1.77

Biodocari	nulative potenti	<u> </u>		Not available
METHVI	TEDT_DI ITVI	ETHED HMI	ARELED /	1624-04-4\

METHIC TEXT-BOTTE ETHER UNLABELED (1034-04-4)	
Log Pow	0.94 - 1.77
Bioaccumulative potential	Not available.

#### HEXAMETHYLCYCLOTRISILOXANE "D3" UNLABELED (541-05-9)

Bioaccumulative potential Not available.

#### 12.4. Mobility in soil

#### HEXAMETHYLCYCLOTRISILOXANE "D3" UNLABELED 100 UG/ML IN MTBE

Ecology - soil Not available.

## METHYL TERT-BUTYL ETHER UNLABELED (1634-04-4)

Ecology - soil Not available.

### HEXAMETHYLCYCLOTRISILOXANE "D3" UNLABELED (541-05-9)

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

environmental control regulations.

Waste disposal recommendations : Dispose of contents/container to ...

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

## **SECTION 14: Transport information**

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

14.1. UN number

UN-No.(DOT) : 2398 DOT NA no. UN2398

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: Methyl tert-butyl ether

#### **UN proper shipping name**

**DOT Proper Shipping Name** 

Department of Transportation (DOT) Hazard

Classes

: 3 - Class 3 - Flammable and combustible liquid 49 CFR 173.120

Hazard labels (DOT) : 3 - Flammable liquid

Packing group (DOT) : II - Medium Danger

IB2 - Authorized IBCs: Metal (31A, 31B and 31N); Rigid plastics (31H1 and 31H2); Composite DOT Special Provisions (49 CFR 172.102) (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.

T7 - 4 178.274(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

#### **Additional information**

Other information : No supplementary information available.

#### **Overland transport**

Packing group (ADR) : 11

Class (ADR) : 3 - Flammable liquids

Hazard identification number (Kemler No.) : 33 Classification code (ADR) : F1

Danger labels (ADR) : 3 - Flammable liquids



Orange plates

Tunnel restriction code : D/E Limited quantities (ADR) 11 : •3YE EAC code Excepted quantities (ADR) : E2

## Transport by sea

**DOT Vessel Stowage Location** : E - 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, but is prohibited from carriage on passenger vessels in which the limiting number of passengers is exceeded.

MFAG-No

#### Air transport

DOT Quantity Limitations Passenger aircraft/rail : 5 L

(49 CFR 173.27)

DOT Quantity Limitations Cargo aircraft only (49 : 60 L

CFR 175.75)

Civil Aeronautics Law Flammable liquids(Hazardous materials notice Appended Table 1 Article 194 of the Enforcement

Regulations)

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#### 14.4. Environmental hazards

Other information : No supplementary information available.

14.5. Special precautions for user

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

HEXAMETHYLCYCLOTRISILOXANE "D3" UNLABELED 100 UG/ML IN MTBE	
Listed on SARA Section 313 (Specific toxic chemical listings)	
SARA Section 311/312 Hazard Classes	Fire hazard
	Immediate (acute) health hazard
	Delayed (chronic) health hazard

#### METHYL TERT-BUTYL ETHER UNLABELED (1634-04-4)

Listed on SARA Section 313 (Specific toxic chemical listings)	
SARA Section 311/312 Hazard Classes	Fire hazard
	Immediate (acute) health hazard
	Delayed (chronic) health hazard

#### 15.2. International regulations

#### **CANADA**

#### HEXAMETHYLCYCLOTRISILOXANE "D3" UNLABELED 100 UG/ML IN MTBE

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

## **METHYL TERT-BUTYL ETHER UNLABELED (1634-04-4)**

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

#### 15.2.1. National regulations

No additional information available

## 15.3. US State regulations

HEXAMETHYLCYCLOTRISILOXANE "D3" UNLABELED 100 UG/ML IN MTBE()	
State or local regulations	U.S Massachusetts - 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.

#### **METHYL TERT-BUTYL ETHER UNLABELED (1634-04-4)**

U.S. - Massachusetts - 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::

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	Flam. Liq. 2	Flammable liquids, Category 2
	Flam. Sol. 1	Flammable solids, Category 1
	Skin Irrit. 2	Skin corrosion/irritation, Category 2
	H225	Highly flammable liquid and vapour
	H228	Flammable solid
	H315	Causes skin irritation

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R11	Highly flammable
R22	Harmful if swallowed
R38	Irritating to skin
F	Highly flammable
Xi	Irritant
Xn	Harmful

NFPA health hazard : 2 - Intense or continued exposure could cause temporary

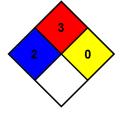
incapacitation or possible residual injury unless prompt medical attention is given.

NFPA fire hazard : 3 - Liquids and solids that can be ignited under almost all

ambient conditions.

0 - Normally stable, even under fire exposure conditions, NFPA reactivity

and are not reactive with water.



#### **HMIS III Rating**

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

Flammability : 3 Serious Hazard Physical : 0 Minimal Hazard

**CIL 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

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