

Material Safety Data Sheet

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Version 1.2

According to 91/155/EEC

Classified as Hazardous according to the criteria of EU Annex 1 and NOHSC.

1 - Product and Company Information

Product Name	TETRAHYDROFURAN-D8, 99.5 ATOM % D (1PK=10 X 0.75ML)
Product Number	441406
Company	Sigma-Aldrich Pty, Ltd Unit 2, 14 Anella Avenue Castle Hill NSW 1765 Australia
Technical Phone #	+61 2 9841 0555
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2 - Composition/Information on Ingredients

Product Name	CAS #	EC no	Annex I Index Number
OCTADEUTEROTETRAHYDROFURAN, >99.5 (ATOM % D)	1693-74-9	216-898-4	603-025-00-0

Formula	C4D8O
Molecular Weight	80.17 AMU
Synonyms	Agrisynth THF * Butane, 1,4-epoxy- * Butane, alpha,delta-oxide * Cyclotetramethylene oxide * Diethylene oxide * 1,4-Epoxybutane * Furanidine * NCI-C60560 * Oxacyclopentane * Oxolane * RCRA waste number U213 * Tetrahydrofuraan (Dutch) * Tetrahydrofuran (ACGIH:OSHA) * Tetrahydrofuranne (French) * Tetraidrofurano (Italian) * Tetramethylene oxide

3 - Hazards Identification

SPECIAL INDICATION OF HAZARDS TO HUMANS AND THE ENVIRONMENT

Highly flammable. May form explosive peroxides. Irritating to eyes and respiratory system.

4 - First Aid Measures

AFTER INHALATION

If inhaled, remove to fresh air. If not breathing give artificial respiration. If breathing is difficult, give oxygen.

AFTER SKIN CONTACT

In case of contact, immediately wash skin with soap and copious amounts of water.

AFTER EYE CONTACT

In case of contact, immediately flush eyes with copious amounts of water for at least 15 minutes.

AFTER INGESTION

If swallowed, wash out mouth with water provided person is conscious. Call a physician.

5 - Fire Fighting Measures

EXTINGUISHING MEDIA

Suitable: Carbon dioxide, dry chemical powder, or appropriate foam.

SPECIAL RISKS

Specific Hazard(s): Vapor may travel considerable distance to source of ignition and flash back. Flammable liquid. Emits toxic fumes under fire conditions.

Explosion Hazards: Vapor may travel considerable distance to source of ignition and flash back. Container explosion may occur under fire conditions.

SPECIAL PROTECTIVE EQUIPMENT FOR FIREFIGHTERS

Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.

SPECIFIC METHOD(S) OF FIRE FIGHTING

Use water spray to cool fire-exposed containers.

6 - Accidental Release Measures

PERSONAL PRECAUTION PROCEDURES TO BE FOLLOWED IN CASE OF LEAK OR SPILL

Evacuate area. Shut off all sources of ignition.

PROCEDURE(S) OF PERSONAL PRECAUTION(S)

Wear respirator, chemical safety goggles, rubber boots, and heavy rubber gloves.

METHODS FOR CLEANING UP

Cover with dry-lime, sand, or soda ash. Place in covered containers using non-sparking tools and transport outdoors. Ventilate area and wash spill site after material pickup is complete.

7 - Handling and Storage

HANDLING

Directions for Safe Handling: Avoid breathing vapor. Avoid contact with eyes, skin, and clothing. Avoid prolonged or repeated exposure.

STORAGE

Conditions of Storage: Keep container closed. Keep away from heat, sparks, and open flame.

SPECIAL REQUIREMENTS: Store under inert gas. Hygroscopic. Do not distill to dryness.

8 - Exposure Controls / Personal Protection

ENGINEERING CONTROLS

Safety shower and eye bath. Use nonsparking tools. Mechanical exhaust required.

GENERAL HYGIENE MEASURES

Wash thoroughly after handling. Wash contaminated clothing before reuse.

PERSONAL PROTECTIVE EQUIPMENT

Respiratory Protection: Government approved respirator.

Hand Protection: Compatible chemical-resistant gloves.

Eye Protection: Chemical safety goggles.

9 - Physical and Chemical Properties

Appearance	Color: Colorless Form: Clear liquid	
Property	Value	At Temperature or Pressure
pH	N/A	
BP/BP Range	65 - 66 °C	760 mmHg
MP/MP Range	-106 °C	
Flash Point	-17 °C	Method: closed cup
Flammability	N/A	
Autoignition Temp	N/A	
Oxidizing Properties	N/A	
Explosive Properties	N/A	
Explosion Limits	N/A	
Vapor Pressure	N/A	
SG/Density	0.989 g/cm3	
Partition Coefficient	N/A	
Viscosity	N/A	
Vapor Density	N/A	
Saturated Vapor Conc.	N/A	
Evaporation Rate	N/A	
Bulk Density	N/A	
Decomposition Temp.	N/A	
Solvent Content	N/A	
Water Content	N/A	
Surface Tension	N/A	
Conductivity	N/A	
Miscellaneous Data	N/A	
Solubility	N/A	

10 - Stability and Reactivity

STABILITY

Stable: Stable.

Conditions to Avoid: Moisture.

Materials to Avoid: Oxidizing agents, Oxygen.

HAZARDOUS DECOMPOSITION PRODUCTS

Hazardous Decomposition Products: Carbon monoxide, Carbon dioxide.

HAZARDOUS POLYMERIZATION

Hazardous Polymerization: Will not occur

11 - Toxicological Information

RTECS NUMBER: LU5950000

ACUTE TOXICITY

LD50

Oral
Rat
1650 mg/kg

LC50
Inhalation
Rat
21,000 ppm
3H

Remarks: Behavioral:Sleep. Lungs, Thorax, or
Respiration:Respiratory stimulation. Gastrointestinal:Nausea or
vomiting.

LD50
Intraperitoneal
Rat
2900 MG/KG

LD50
Intraperitoneal
Mouse
1900 MG/KG

LD50
Oral
Guinea pig
2300 mg/kg

SIGNS AND SYMPTOMS OF EXPOSURE

Can cause CNS depression. Exposure can cause: Coughing, chest
pains, difficulty in breathing. Exposure to high airborne
concentrations can cause anesthetic effects.

ROUTE OF EXPOSURE

Skin Contact: Causes skin irritation.
Skin Absorption: May be harmful if absorbed through the skin.
Eye Contact: Causes eye irritation.
Inhalation: May be harmful if inhaled. Material is irritating to
mucous membranes and upper respiratory tract.
Ingestion: Harmful if swallowed.

TARGET ORGAN INFORMATION

Central nervous system. Liver. Kidneys.

CHRONIC EXPOSURE - CARCINOGEN

Result: This product is or contains a component that has been
reported to be possibly carcinogenic based on its IARC, ACGIH,
NTP, or EPA classification.

Rat
Route of Application: Inhalation
Exposure Time: 6H/2Y
Result: Tumorigenic:Equivocal tumorigenic agent by RTECS
criteria. Kidney, Ureter, Bladder:Tumors.

Mouse
Route of Application: Inhalation
Exposure Time: 6H/2Y
Result: Tumorigenic:Carcinogenic by RTECS criteria. Liver:Tumors.

CHRONIC EXPOSURE - TERATOGEN

Species: Rat
Dose: 5000 PPM/6H
Route of Application: Inhalation
Exposure Time: (6-19D PREG)
Result: Effects on Embryo or Fetus: Fetotoxicity (except death, e.g., stunted fetus).

CHRONIC EXPOSURE - REPRODUCTIVE HAZARD

Species: Mouse
Dose: 1800 PPM/6H
Route of Application: Inhalation
Exposure Time: (6-17D PREG)
Result: Effects on Fertility: Post-implantation mortality (e.g., dead and/or resorbed implants per total number of implants).

12 - Ecological Information

No data available.

13 - Disposal Considerations

SUBSTANCE DISPOSAL

Contact a licensed professional waste disposal service to dispose of this material. Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Observe all federal, state, and local environmental regulations.

14 - Transport Information

RID/ADR

UN#: 2056
Class: 3
PG: II
Proper Shipping Name: Tetrahydrofuran

IMDG

UN#: 2056
Class: 3
PG: II
Proper Shipping Name: Tetrahydrofuran
Marine Pollutant: No
Severe Marine Pollutant: No

IATA

UN#: 2056
Class: 3
PG: II
Proper Shipping Name: Tetrahydrofuran
Inhalation Packing Group I: No

15 - Regulatory Information

CLASSIFICATION AND LABELING ACCORDING TO EU DIRECTIVES

ANNEX I INDEX NUMBER: 603-025-00-0
INDICATION OF DANGER: F Xi
Highly Flammable. Irritant.
R-PHRASES: 11 19 36/37
Highly flammable. May form explosive peroxides. Irritating to eyes and respiratory system.
S-PHRASES: 16 29 33

Keep away from sources of ignition - no smoking. Do not empty into drains. Take precautionary measures against static discharges.

SWITZERLAND

SWISS POISON CLASS: 3

16 - Other Information

WARRANTY

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Inc., shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale. Copyright 2005 Sigma-Aldrich Co. License granted to make unlimited paper copies for internal use only.

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