



## 2,5,7,10-TETRAOXAUNDECANE (TOU)

## Safety Data Sheet

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


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Version: 3.1

**SECTION 1: Identification****1.1. Identification**

Product form	: Substance
Trade name	: 2,5,7,10-TETRAOXAUNDECANE (TOU)
Chemical name	: 1-Methoxy-2-(2-methoxyethoxymethoxy)ethane
IUPAC name	: 2,5,7,10-Tetraoxaundecane
CAS N°	: 4431-83-8
Product code	: 1200
Formula	: C7H16O4
Chemical structure	: 

**1.2. Recommended use and restrictions on use**

Recommended use	: Industrial uses: Uses of substances as such or in preparations at industrial sites, Professional uses: Public domain (administration, education, entertainment, services, craftsmen)
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**1.3. Supplier****Distributor**

Silver Fern Chemical, Inc.  
2226 Queen Anne Ave. North, Suite C  
Seattle, WA 98109, USA  
Phone: 1-866-282-3384  
info@silverfernchemical.com

**1.4. Emergency telephone number**

24 Emergency Contact:	Infotrac 1-800-535-5053 (USA & Canada)
Outside USA & Canada:	1-352-323-3500

**SECTION 2: Hazard(s) identification****2.1. Classification of the substance or mixture****GHS-US classification**

Flammable liquids	H227	Combustible liquid
Category 4		

Full text of H statements : see section 16

**2.2. GHS Label elements, including precautionary statements****GHS-US labeling**

Signal word (GHS-US)	: Warning
Hazard statements (GHS-US)	: H227 - Combustible liquid
Precautionary statements (GHS-US)	: P210 - Keep away from open flames. - No smoking P280 - Wear eye protection P370+P378 - In case of fire: Use foam, extinguishing powder, carbon dioxide (CO2) to extinguish P403+P235 - Store in a well-ventilated place. Keep cool P501 - Dispose of contents/container to Draining points

**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**

Substance type	: Mono-constituent
Chemical name	: 1-Methoxy-2-(2-methoxyethoxymethoxy)ethane
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Name	Product identifier	%	GHS-US classification
2,5,7,10-Tetraoxaundecane	(CAS N°) 4431-83-8	99 - 100	Flam. Liq. 4, H227
Water	(CAS N°) 7732-18-5	0 - 0.25	Not classified

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

### 3.2. Mixtures

Not applicable

## SECTION 4: First-aid measures

### 4.1. Description of first aid measures

- First-aid measures general : Seek medical attention if ill effect or irritation develops.
- First-aid measures after inhalation : Move the affected person to the fresh air. Obtain medical attention if breathing difficulty persists.
- First-aid measures after skin contact : Wash skin thoroughly with mild soap and water. Seek medical attention if ill effect or irritation develops.
- First-aid measures after eye contact : Wash off with plenty of water.
- First-aid measures after ingestion : Call a POISON CENTER or doctor/physician if you feel unwell.

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

- Symptoms/effects : Not expected to present a significant hazard under anticipated conditions of normal use.
- Symptoms/effects after inhalation : None under normal use.
- Symptoms/effects after skin contact : None under normal use.
- Symptoms/effects after eye contact : None under normal use.

### 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 : powder, water spray, foam, carbon dioxide.

### 5.2. Specific hazards arising from the chemical

- Fire hazard : Combustible liquid.
- Explosion hazard : Not applicable.
- Reactivity : Strong acids and oxidants.

### 5.3. Special protective equipment and precautions for fire-fighters

No additional information available

## SECTION 6: Accidental release measures

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

- General measures : Use handling and disposal procedures appropriate for the absorbent material used.

#### 6.1.1. For non-emergency personnel

- Protective equipment : Equip cleanup crew with proper protection.

#### 6.1.2. For emergency responders

- Protective equipment : Equip cleanup crew with proper protection.

### 6.2. Environmental precautions

Prevent entry to sewers and public waters. Clean up any spills as soon as possible, using an absorbent material to collect it.

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

- For containment : Use suitable disposal containers.
- Methods for cleaning up : Clean up any spills as soon as possible, using an absorbent material to collect it.

### 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 : Minimize exposure to air and light.
- Precautions for safe handling : Handle in accordance with good industrial hygiene and safety procedures.

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Hygiene measures : Do not eat, drink or smoke during use. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work.

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

Technical measures : Comply with applicable regulations.  
Storage conditions : Store in dry, well-ventilated area.  
Incompatible products : Strong acids and oxidants.  
Storage temperature : -30 / 40 °C

## SECTION 8: Exposure controls/personal protection

### 8.1. Control parameters

<b>2,5,7,10-Tetraoxaundecane (4431-83-8)</b>
Not applicable

### 8.2. Appropriate engineering controls

No additional information available

### 8.3. Individual protection measures/Personal protective equipment

#### Hand protection:

protective gloves

#### Eye protection:

Safety glasses with side guards should be worn to prevent injury from airborne particles and/or other eye contact with this product

## SECTION 9: Physical and chemical properties

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

Physical state : Liquid  
Appearance : Clear.  
Color : Colorless  
Odor : characteristic  
Odor threshold : No data available  
pH : Not applicable  
Melting point : -65 °C  
Freezing point : No data available  
Boiling point : 210 °C  
Flash point : 88 °C (ASTM D 93)  
Relative evaporation rate (butyl acetate=1) : 17.38  
Flammability (solid, gas) : No data available  
Vapor pressure : 0.22 mbar (25 °C )  
Relative vapor density at 20 °C : No data available  
Relative density : 0.9921  
Molecular mass : 164.2 g/mol  
Solubility : Soluble in water.  
Log Pow : - 0.69 (OECD 107)  
Auto-ignition temperature Decomposition temperature : 210 °C  
Viscosity, kinematic : 1.532 mm<sup>2</sup>/s  
Viscosity, dynamic : No data available  
Explosion limits : LEL: 0.75 vol % (100°C)  
UEL: 38.2 vol % (180°C)  
Explosive properties : Not classified.  
Oxidizing properties : Not classified.

### 9.2. Other information

No additional information available

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### SECTION 10: Stability and reactivity

#### 10.1. Reactivity

Strong acids and oxidants.

#### 10.2. Chemical stability

The product is stable at normal handling and storage conditions.

#### 10.3. Possibility of hazardous reactions

Refer to section 10.1 on Reactivity.

#### 10.4. Conditions to avoid

No additional information available

#### 10.5. Incompatible materials

No additional information available

#### 10.6. Hazardous decomposition products

None under normal conditions.

### SECTION 11: Toxicological information

#### 11.1. Information on toxicological effects

Acute toxicity : Not classified

2,5,7,10-Tetraoxaundecane (4431-83-8)	
LD50 oral rat	> 5000 mg/kg (OECD 423 method)
LD50 dermal rat	> 2000 mg/kg (OECD 402 method)

Skin corrosion/irritation : Not classified  
pH: Not applicable

Serious eye damage/irritation : Not classified  
pH: Not applicable

Respiratory or skin sensitization : Not classified

Germ cell mutagenicity : Not classified

Carcinogenicity : Not classified

Reproductive toxicity : Not classified

Specific target organ toxicity – single exposure : Not classified

Specific target organ toxicity – repeated exposure : Not classified

Aspiration hazard : Not classified

Symptoms/effects : Not expected to present a significant hazard under anticipated conditions of normal use.

Symptoms/effects after inhalation : None under normal use.

Symptoms/effects after skin contact : None under normal use.

Symptoms/effects after eye contact : None under normal use.

### SECTION 12: Ecological information

#### 12.1. Toxicity

2,5,7,10-Tetraoxaundecane (4431-83-8)	
LC50 fish 1	> 100 mg/l (OECD 203 method)
EC50 Daphnia 1	> 100 mg/l (OECD 202 method)
EC50 other aquatic organisms 1	> 1000 mg/l EU Method C.11
ErC50 (algae)	> 100 mg/l 72h (OECD 201 method)

#### 12.2. Persistence and degradability

2,5,7,10-Tetraoxaundecane (4431-83-8)	
Biodegradation	4.3 % 28 days (OECD 301D method)

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### 12.3. Bioaccumulative potential

2,5,7,10-Tetraoxaundecane (4431-83-8)	
Log Kow	- 0.69 (OECD 107 method)
Bioaccumulative potential	Weak.

### 12.4. Mobility in soil

2,5,7,10-Tetraoxaundecane (4431-83-8)	
Log Koc	0.181 estimated

### 12.5. Other adverse effects

Effect on the global warming : No known effects from this product.  
GWPmix comment : No known effects from this product.

## SECTION 13: Disposal considerations

### 13.1. Disposal methods

Regional legislation (waste) : Disposal must be done according to official regulations.

## SECTION 14: Transport information

### Department of Transportation (DOT)

In accordance with DOT

Transport document description : NA1993 Combustible liquid, n.o.s. (CONTAINS2,5,7,10-Tetraoxaundecane), 3, III  
UN-No.(DOT) : NA1993  
Proper Shipping Name (DOT) : Combustible liquid, n.o.s.  
CONTAINS2,5,7,10-Tetraoxaundecane  
Class (DOT) : 3 - Class 3 - Flammable and combustible liquid 49 CFR 173.120  
Packing group (DOT) : III - Minor Danger  
DOT Packaging Non Bulk (49 CFR 173.xxx) : 203  
DOT Packaging Bulk (49 CFR 173.xxx) : 241  
DOT Symbols : D - Proper shipping name for domestic use only, or to and from Canada,G - Identifies PSN  
requiring a technical name  
DOT Special Provisions (49 CFR 172.102) : 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).  
T1 - 1.5 178.274(d)(2) Normal..... 178.275(d)(2)  
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 Quantity Limitations Passenger aircraft/rail (49 CFR 173.27) : 60 L  
DOT Quantity Limitations Cargo aircraft only (49 CFR 175.75) : 220 L  
DOT Vessel Stowage Location : A - The material may be stowed "on deck" or "under deck" on a cargo vessel and on a passenger vessel.  
Emergency Response Guide (ERG) Number : 128  
Other information : No supplementary information available.

### TDG

### Transport by sea

Not regulated

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### Air transport

Not regulated

## SECTION 15: Regulatory information

### 15.1. US Federal regulations

#### 1-Methoxy-2-(2-methoxyethoxymethoxy)ethane (4431-83-8)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

All components of this product are listed, or excluded from listing, on the United States Environmental Protection Agency Toxic Substances Control Act (TSCA) inventory

Chemical(s) subject to the reporting requirements of Section 313 or Title III of the Superfund Amendments and Reauthorization Act (SARA) of 1986 and 40 CFR Part 372.

formaldehyde	CAS N° 50-00-0	0 - 0.1%
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#### 2-methoxyethanol, ethylene glycol monomethyl ether (109-86-4)

EPA TSCA Regulatory Flag	S - S - indicates a substance that is identified in a proposed or final Significant New Uses Rule.
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#### formaldehyde (50-00-0)

Listed on EPA Hazardous Air Pollutant (HAPS)

CERCLA RQ	100 lb
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SARA Section 302 Threshold Planning Quantity (TPQ)	500 lb
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### 15.2. International Regulations

#### CANADA

#### 2,5,7,10-Tetraoxaundecane (4431-83-8)

Listed on the Canadian NDSL (Non-Domestic Substances List)

#### 2-methoxyethanol, ethylene glycol monomethyl ether (109-86-4)

Listed on the Canadian DSL (Domestic Substances List)

#### Water (7732-18-5)

Listed on the Canadian DSL (Domestic Substances List)

#### formaldehyde (50-00-0)

Listed on the Canadian DSL (Domestic Substances List)

### EU-Regulations

#### 2,5,7,10-Tetraoxaundecane (4431-83-8)

Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

### National regulations

#### formaldehyde (50-00-0)

Listed on IARC (International Agency for Research on Cancer)

Listed as carcinogen on NTP (National Toxicology Program)

Listed on EPA Hazardous Air Pollutant (HAPS)

### 15.3. US State regulations

#### 2-methoxyethanol, ethylene glycol monomethyl ether (109-86-4)

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)
No	Yes	No	Yes		63 µg/day (oral)

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formaldehyde (50-00-0)					
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	No	No	No	40 µg/day	

### 2-methoxyethanol, ethylene glycol monomethyl ether (109-86-4)

U.S. - New Jersey - Right to Know Hazardous Substance List

### formaldehyde (50-00-0)

U.S. - Massachusetts - RTK (Right to Know) List

U.S. - Pennsylvania - RTK (Right to Know) Lis

U.S. - Rhode Island - Hazardous Substance List

## SECTION 16: Other information

Revision date : 01/13/2017

Full text of H-phrases:

H227	Combustible liquid
H302	Harmful if swallowed
H311	Toxic in contact with skin
H350	May cause cancer

NFPA health hazard

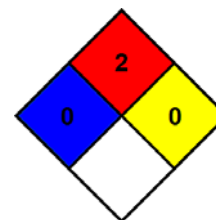
: 0 - Materials that, under emergency conditions, would offer no hazard beyond that of ordinary combustible materials.

NFPA fire hazard

: 2 - Materials that must be moderately heated or exposed to relatively high ambient temperatures before ignition can occur.

NFPA reactivity

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



HMIS III Rating

Flammability

: 2 Moderate Hazard - Materials which must be moderately heated or exposed to high ambient temperatures before ignition will occur. Includes liquids having a flash point at or above 100 F but below 200 F. (Classes II & IIIA)

SDS US (GHS HazCom 2012)

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