

MATERIAL SAFETY DATA SHEETDate Updated: 03.08.2008
Version: 3.0**Organosilane U302******** SECTION 1 - PRODUCT AND COMPANY IDENTIFICATION ******

Product name: Organosilane U302
Chemical name: 3-Ureidopropyltriethoxysilane in methanol/ethanol
Company name: Dalian Onichem Co., Ltd.
18-220, No. 2 Gaoxin Street, Qixianling, Dalian 116023, P.R. China
Tel: 86-411-84794022, Fax: 86-411-84794077
Emergency telephone number: CHEMTREC (24 hours) 800-424-9300

****** SECTION 2 - COMPOSITION / INFORMATION ON INGREDIENTS ******

CHEMICAL NAME	CAS#	CONCENTRATION
3-Ureidopropyltriethoxysilane	23779-32-0	< 50.0 %
Methanol	67-56-1	< 50.0 %
Ethanol	64-17-5	< 25.0 %

****** SECTION 3 - HAZARDS IDENTIFICATION ********APPEARANCE**

Physical state: Liquid
Color: Transparent, colorless
Odor: Alcohol

EMERGENCY SURVEY**DANGER!****FLAMMABLE.**

HARMFUL OR FATAL IF SWALLOWED.

HARMFUL IF INHALED.

HARMFUL IF ABSORBED THROUGH SKIN.

MAY CAUSE EYE DAMAGE AND BLINDNESS IF SWALLOWED.

MAY CAUSE DIZZINESS AND DROWSINESS.

MAY CAUSE HEART MUSCLE DAMAGE.

MAY CAUSE LIVER AND KIDNEY DAMAGE.

POTENTIAL HEALTH EFFECTS**Swallowing****Acute effects**

Contains methanol.

Methanol may cause nausea, abdominal pain, vomiting, headache, dizziness, shortness of breath, weakness, fatigue, leg cramps, restlessness, confusion, drunken behavior, visual disturbances, drowsiness, coma, and death. There may be a delay of several hours between swallowing methanol and the onset of signs and symptoms. The effects observed are in part due to acidosis and partially to cerebral edema. Visual effects include blurred vision, diplopia, changes in color perception, restriction of visual fields, complete blindness. Ingestion of moderate quantities of methanol also produces metabolic acidosis. Onset of symptoms may be delayed up to 48 hours. 60-200 ml methanol is fatal dose for most adults. Ingestion of as little as 10 ml methanol has caused blindness. With massive overdoses, liver, kidney and heart muscle injuries have been described.

Effects of repeated overexposure

Long-term repeated oral exposure to ethanol may result in the development of progressive liver injury with fibrosis.

Skin absorption**Acute effects**

Prolonged and/or widespread contact may result in:

- absorption of potentially harmful amounts of methanol

Inhalation

MATERIAL SAFETY DATA SHEETDate Updated: 03.08.2008
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High vapor concentrations may cause a burning sensation in the throat and nose, stinging and watering in the eyes. At concentrations which cause irritation, dizziness, faintness, drowsiness, nausea and vomiting may also occur. Methanol vapor may cause dizziness, drowsiness, disturbances of vision, and tingling, numbness, and shooting pains in the hands and forearms.

Effects of repeated overexposure

Long-term repeated overexposure to methanol vapor concentrations of 3000 ppm or greater may allow a cumulative effect to occur with resulting nausea, vomiting, headache, ringing in the ears, insomnia, trembling, unsteady gait, vertigo, clouded and double vision. Liver and/or kidney injury may occur. Prolonged overexposure at levels of 800- 1000 ppm may result in severe eye damage in some persons.

Skin contact**Acute effects**

Prolonged and/or repeated contact may result in:

- defatting of the skin
- drying of the skin

Eye contact**Acute effects**

Causes slight irritation.

May cause the following effects:

- discomfort
- excess redness of the conjunctivae

Medical conditions aggravated by overexposure

May aggravate:

- an existing kidney disease
- an existing liver disease

Skin contact may aggravate:

- an existing dermatitis

Other effects of overexposure

Repeated ingestion of ethanol by pregnant mothers has been shown to adversely affect the central nervous system of the fetus, producing a collection of effects which together constitute the fetal alcohol syndrome. These include mental and physical retardation, disturbances of learning, motor and language deficiencies, behavioral disorders, and small size head.

POTENTIAL ENVIRONMENTAL EFFECTS

All available ecological data have been taken into account for the development of the hazard and precautionary information contained in this Safety Data Sheet.

****** SECTION 4 - FIRST AID MEASURES ******

Swallowing: If patient is fully conscious, give two glasses of water. Induce vomiting. Obtain medical attention immediately. If medical advice is delayed, and if the person has swallowed a moderate volume of material (50 ml or more), then give 100 ml of hard liquor, such as whiskey. =For children, give proportionally less liquor, according to weight.

Skin: Remove contaminated clothing. Wash skin with soap and water. If irritation persists or if contact has been prolonged, obtain medical attention.

Inhalation: Remove to fresh air. Give artificial respiration if not breathing. If breathing is difficult, oxygen may be given by qualified personnel. Obtain medical attention.

Eye contact: Immediately flush eyes with water and continue washing for several minutes. =Obtain medical attention.

Notes to physician: The combination of visual disturbances, metabolic acidosis, and formic acid in the urine is evidence of methanol poisoning. The therapeutic intravenous administration of ethanol (10 ml /hour) allows it to be preferentially oxidized and reduces production of methanol metabolites. Acidosis must be treated by means of intravenous sodium bicarbonate, and methanol elimination may be increased by hemodialysis, as indicated. Treatment should be based on blood methanol levels and acid-base balance.

MATERIAL SAFETY DATA SHEETDate Updated: 03.08.2008
Version: 3.0****** SECTION 5 - FIRE-FIGHTING MEASURES ******

Flash point: 14 °C (58 °F)

Flammable limits

Lower limit: 6 %(V); Upper limit: 36 %(V)

Special fire fighting procedures

Use water spray to disperse vapors. Re-ignition possible! Use water spray to cool fire-exposed containers and structures. Use remote spray monitors or fight fire from behind shields.

Special protective equipment for firefighters

Self-contained breathing apparatus. Body covering protective clothing.

Extinguishing media

Large fires: - alcohol-type foam or universal-type foams

Small fires: - CO₂, - dry chemical

Unusual fire and explosion hazards

Vapors form from this product and may travel or be moved by air currents and ignited by pilot lights, other flames, sparks, heaters, electrical equipment, static discharges or other ignition sources at locations distant from product handling point. Vapors from this material may settle in low or confined areas or travel a long distance to an ignition source and flash back explosively. Flammable liquid. Vapor may be ignited by static sparks. Use proper bonding and grounding during liquid transfer as described in National Fire Protection Association document NFPA 77.

****** SECTION 6 - ACCIDENTAL RELEASE MEASURES ******

Personal precautions

Avoid contact with liquid and vapors. Wear suitable protective equipment.

Environmental precautions

Prevent runoff.

Methods for cleaning up

Cover with absorbent or contain.

Collect for disposal.

Extinguish and do not turn on any ignition source until the area is determined to be free from fire or explosion hazards.

Observe government regulations.

****** SECTION 7 - HANDLING AND STORAGE ********HANDLING**

Handling precautions

Do not swallow. Electrically bond and ground all containers and equipment. Avoid breathing vapor.

Use with adequate ventilation. Avoid contact with skin and clothing. Wash thoroughly after handling.

Other precautions

DANGER!

Contains methanol. Harmful or fatal if swallowed.

STORAGE

Storage requirements

Keep away from heat, sparks and flame. Keep container closed.

****** SECTION 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION ******

Respiratory protection

Self-contained breathing apparatus in high vapor concentrations.

Hand protection / protective gloves

Recommended order of use:

4H

Butyl

Neoprene

Nitrile (NBR)

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PVC-coated

Eye protection

Safety glasses.

Other protective equipment

Chemical apron

Eye bath

Safety shower

ENGINEERING CONTROLS

Ventilation

General (mechanical) room ventilation is expected to be satisfactory where this product is stored and handled in closed equipment. Special, local ventilation is needed at points where vapors can be expected to escape to the workplace air.

EXPOSURE LIMITS

Component	Type	Value
Methanol	TWA (skin), OSHA	200.0 ppm
	STEL (skin), ACGIH	250.0 ppm
	TWA (skin), ACGIH	200.0 ppm
Ethanol	TWA, OSHA	1,000.0 ppm
	TWA, ACGIH	1,000.0 ppm

****** SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES ********APPEARANCE**

Physical state: Liquid

Color: Transparent, colorless

Odor: Alcohol

OTHER PROPERTIES

Boiling point > 64.7 °C at STP unless specified below.

Melting point not available

PH not available

Specific gravity (H₂O=1) 0.920 at 25 °C (1,013 hPa)

Vapor pressure < 129.01 hPa (97.00 mmHg) at 20 °C

Vapor density (air=1) Heavier than air

Solubility in water Soluble

Evaporation rate (Butyl Acetate=1) 5.90

Flash point 14.4 °C (58 °F) Method: Pensky-Martens closed cup ASTM D 93

Upper explosion limits 36 %(V)

Lower explosion limits 6 %(V)

Percent volatiles Not determined

Molecular weight Mixture

****** SECTION 10 - STABILITY AND REACTIVITY ******

Stability: Stable.

Stability - Conditions to avoid: None known.

Incompatible materials: Strong oxidizing agents.

Hazardous combustion products: None known.

****** SECTION 11 - TOXICOLOGICAL INFORMATION ******

Oral Toxicity: Toxic. Possible risks of irreversible effects.

Inhalation Toxicity: Toxic. Possible risks of irreversible effects.

Skin Irritation: Toxic. Possible risks of irreversible effects.

****** SECTION 12 - ECOLOGICAL INFORMATION ******

All available ecological data have been taken into account for the development of the hazard and

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precautionary information contained in this Safety Data Sheet.

****** SECTION 13 - DISPOSAL CONSIDERATIONS ******

General: Incinerate in a furnace where permitted under appropriate Federal, State, and local regulations.

****** SECTION 14 - TRANSPORT INFORMATION ********DOT Classification**

Proper shipping name: FLAMMABLE LIQUID, N.O.S. (3-ureidopropyltrialkoxysilane in methanol)

Class: 3

UN ID #: UN1230

Packing group: II

Freight description road: SIZING, NOI

IMDG Classification

Proper shipping name: FLAMMABLE LIQUID, TOXIC, N.O.S. (3-ureidopropyltrialkoxysilane in methanol)

Class: 3

Subsidiary risk: 6.1

UN ID #: UN 1230

Packing group: II

ICAO Classification

Proper shipping name: FLAMMABLE LIQUID, TOXIC, N.O.S. (3-ureidopropyltrialkoxysilane in methanol)

Class: 3

Subsidiary risk: 6.1

UN ID #: UN 1230

Packing group: II

****** SECTION 15 - REGULATORY INFORMATION ******

Labelling according to EC Directives

Statutory basis/list: According to Directive 67/548/EEC

Hazard Symbols:	F	Flammable
	T	Toxic
Risk Phrases:	R11	Highly flammable.
	R23/24/25	Toxic by inhalation, in contact with skin and if swallowed.
	R39/23/24/25	Toxic: danger of very serious irreversible effects through inhalation, in contact with skin and if swallowed.
Safety Phrases:	S7	Keep container tightly closed.
	S16	Keep away from sources of ignition - No smoking.
	S36/37	Wear suitable protective clothing and gloves
	S45	In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible)

****** SECTION 17 - ADDITIONAL INFORMATION ******

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no way shall we be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, howsoever arising, even if we have been advised of the possibility of such damages.