1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1 Product identifiers

Product Name	(3-Mercaptopropyl)trimethoxysilane
Product No.	80
Brand	WD
CAS No.	4420-74-0

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

Manufacture of substances

1.3 Details of the supplier of the safety data sheet

Company	WD Silicone Co., Ltd. Maple Garden, Wuhan University Wuhan, Hubei, China
Telephone	+86-27-87215023
Fax	+86-27-87214371
Email Address	Sale@wdsilicone.cn

1.4 Emergency telephone number

Emergency telephone No. +8618971680837

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008 [EU-GHS/CLP]

Acute toxicity, Oral (Category 4)
Skin sensitization (Category 1)
Chronic aquatic toxicity (Category 2)

Classification according to EU Directives 67/548/EEC as amended

Harmful if swallowed. May cause sensitization by skin contact. Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

2.2 Label elements

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

Pictogram

Signal word	Danger
Hazard statement(s)	
H302	Harmful if swallowed.
H317	May cause an allergic skin reaction.
H411	Toxic to aquatic life with long lasting effects.
Precautionary statement(s)	
P273	Avoid release to the environment.
P280	Wear protective gloves.

According to European Directive 67/548/EEC as amended

Hazard Symbol(s)

R-phrase(s)	
R22	Harmful if swallowed.
R43	May cause sensitization by skin contact.
R51/53	Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
S-phrase(s)	
S24/25	Avoid contact with skin and eyes.
S36/37	Wear suitable protective clothing and gloves.

	S61	Avoid release to the environment. Refer to special instructions/ Safety data sheets.
2.3	**Other hazards**	This material is capable of forming methanol if hydrolyzed. Methanol vapour may cause dizziness, drowsiness, disturbances of vision, and tingling, numbness, and shooting pains in the hands and forearms.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Synonyms	3-(Trimethoxysilyl)-1-propanethiol
Linear Formula	$HS(CH_2)_3Si(OCH_3)_3$
Molecular Weight	196.37 g/mol

Component	CAS No.	EC No.	Concentration
(3-Mercaptopropyl)trimethoxysilane	4420-74-0	224-588-5	-

4. FIRST AID MEASURES

4.1 Description of first aid measures

General advice

Consult a physician. Show this safety data sheet to the doctor in attendance.

If inhaled

If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact

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

In case of eye contact

Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

If swallowed

Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

5. FIRE-FIGHTING 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

Carbon oxides, sulfur oxides, silicon oxides

5.3 Precautions for fire-fighters

Wear self contained breathing apparatus for fire fighting if necessary.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. Avoid breathing vapors, mist or gas. Ensure adequate ventilation.
Evacuate personnel to safe areas.

6.2 Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

6.3 Methods and materials for containment and cleaning up

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

7. HANDLING AND STORAGE

7.1 Precautions for safe handling

Avoid contact with skin and eyes. Avoid inhalation of vapour or mist.
Normal measures for preventive fire protection.

7.2 Conditions for safe storage, including any incompatibilities

Keep container tightly closed in a cool, dry and well-ventilated place. Containers which are opened must be carefully resealed. Store under inert gas. Moisture sensitive.

7.3 Specific end uses

no data available

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Components with workplace control parameters

Contains no substances with occupational exposure limit values. However, methanol will be produced if the product undergoes hydrolysis. The amount of methanol produced depends on the level of hydrolysis reaction.

8.2 Exposure controls

Appropriate engineering controls

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

8.3 Personal protective equipment

Eye/face protection

Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it.

Body protection

Complete suit protecting against chemicals, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection

Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance	: Colorless transparent liquid
Odour	: no data available
Odour Threshold	: no data available
pH	: no data available
Melting/freezing point	: no data available
Initial boiling point and boiling range	: 210-212 °C @ 1,013 hPa
Flash point	: 96 °C (closed cup)
Evaporation rate	: no data available
Flammability (solid, gas)	: no data available
Upper explosion limit	: no data available
Lower explosion limit	: no data available
Vapour pressure	: < 7 hPa @ 20 °C
Vapour density	: 6.77 (Air = 1.0)
Relative density	: 1.05 g/ml @ 25 °C
Water solubility	: no data available
Autoignition temperature	: no data available
Decomposition temperature	: no data available
Viscosity	: 2 cSt @ 25 °C
Explosive properties	: no data available
Oxidizing properties	: no data available

9.2 Other safety information

no data available

10. STABILITY AND REACTIVITY

10.1 Chemical stability

Stable under recommended storage conditions.

10.2 Conditions to avoid

Fire or humid condition.

10.3 Materials to avoid

Strong oxidizing agents, strong acids or bases and moisture.

10.4 Hazardous decomposition products

Hazardous decomposition products formed under fire conditions-carbon oxides, sulphur oxides, silicon oxides. Hazardous decomposition products formed under hydrolysis-methanol.

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity

LD50 Oral - rat - 730 mg/kg

LD50 Dermal - rabbit - 2140 mg/kg

Skin corrosion/irritation

no data available

Serious eye damage/eye irritation

no data available

Respiratory or skin sensitization

no data available

Germ cell mutagenicity

no data available

Carcinogenicity

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

Reproductive toxicity

no data available

Specific target organ toxicity - single exposure

no data available

Specific target organ toxicity - repeated exposure

no data available

Aspiration hazard

no data available

Potential health effects

Inhalation	May be harmful if inhaled. Causes respiratory tract irritation.
Ingestion	Harmful if swallowed.
Skin	May be harmful if absorbed through skin. Causes skin irritation.
Eyes	Causes eye irritation.

Signs and Symptoms of Exposure

Nausea, Headache, Vomiting, To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Additional Information

RTECS: Not available.

Caution has to be taken when the component undergoes hydrolysis as it will release methanol.

12. ECOLOGICAL INFORMATION

12.1 Toxicity

Toxicity to fish LC50 - Danio rerio (zebra fish) - 439 mg/l - 96.0 h

Toxicity to daphnia and other aquatic invertebrates EC50 - Daphnia magna (Water flea) - 6.7 mg/l - 48 h

Toxicity to algae EC50 - Desmodesmus subspicatus (green algae) - 267 mg/l - 72 h

12.2 Persistence and degradability

no data available

12.3 Bioaccumulative potential

no data available

12.4 Mobility in soil

no data available

12.5 Results of PBT and vPvB assessment

no data available

12.6 Other adverse effects

no data available

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Product

Hand it to a licensed disposal company.

Contaminated packaging

Dispose of as unused product.

14. TRANSPORT INFORMATION

		ADR/RID	IMDG	IATA
14.1	**UN No.**	3082	3082	3334
14.2	**Proper shipping name**	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (3-Trimethoxysilylpropane-1-thiol)		Aviation regulated liquid, n.o.s. (3-Trimethoxysilylpropane-1-thiol)
14.3	**Transport hazard class**	9	9	9
14.4	**Packaging group**	III	III	III
14.5	**Environmental hazards**	no	Marine pollutant	no
14.6	**EMS No.**		F-A, S-F	

14.7 Further information

EHS-Mark required (ADR 2.2.9.1.10, IMDG code 2.10.3) for single packaging and combination packaging containing inner packaging with Dangerous Goods > 5L for liquids or > 5kg for solids.

15. REGULATORY INFORMATION

This safety datasheet complies with the requirements of Regulation (EC) No. 1907/2006.

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

no data available

15.2 Chemical Safety Assessment

no data available

15.3 Other International Regulations

Listed on or in accordance with the following inventories:

IECSC - China
PICCS - Philippines
ECL - Korea
AICS - Australia
DSL - Canada
TSCA - USA
ENCS - Japan

16. OTHER INFORMATION

The above information does not purport to be all inclusive and shall be used only as a guide.