

WD-931

MSDS

**** SECTION 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION ****

MSDS Name: Tetramethoxysilane,99.0%

Company name: WUHAN UNIVERSITY SILICONE NEW MATERIAL CO., LTD.

Telephone: +86-27-68756775 Fax:+86-27-68754159

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

CAS#	Chemical Name	%	RTECS #
681-84-5	Tetramethoxysilane	99.0	VV9800000

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

EMERGENCY OVERVIEW

Appearance: colorless transparent liquid.

Danger! Corrosive. Moisture sensitive. May be harmful if swallowed. Causes eye and skin burns. May cause severe respiratory tract irritation with possible burns. May cause severe digestive tractirritation with possible burns.

Potential Health Effects

Eye: Redness. Pain. Loss of vision.

Skin: Redness. Pain.

Ingestion: Abdominal pain.

Inhalation: Burning sensation. Cough. Shortness of breath. Sore throat. Symptoms may be delayed .

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

Eyes: First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.

Skin: Remove contaminated clothes. Rinse and then wash skin with water and soap.

Ingestion: Rinse mouth. Do NOT induce vomiting. Rest. Refer for medical attention.

Inhalation: Fresh air, rest. Half-upright position. Refer for medical attention.

**** SECTION 5 - FIRE FIGHTING MEASURES ****

Flammable.

NO open flames, NO sparks, and NO smoking.

Powder, water spray, foam, carbon dioxide.

**** SECTION 6 - EXPLOSION RELEASE MEASURES ****

Explosive vapour/air mixtures may be formed.

Use a closed system, ventilation, and explosion-proof electrical equipment.

**** SECTION 7 - HANDLING and STORAGE ****

UN Hazard Class: 6.1

UN Subsidiary Risks: 3

UN Pack Group: I

Do not transport with food and feedstuffs.

Fireproof. Separated from food and feedstuffs.

**** SECTION 8 - SPILLAGE DISPOSAL ****

Collect leaking and spilled liquid in sealable containers as far as possible. Carefully collect remainder, then remove to safe place (extra personal protection: chemical protection suit including self-contained breathing apparatus).

**** SECTION 9 - EMERGENCY RESPONSE ****

Transport Emergency Card: TEC (R)-61G60 NFPA Code: H3; F3; R1;

**** SECTION 10 - IMPORTANT DATA ****

PHYSICAL STATE; APPEARANCE:

COLOURLESS LIQUID.

OCCUPATIONAL EXPOSURE LIMITS:

TLV: 1 ppm; 6 mg/m³ (ACGIH 1997).

ROUTES OF EXPOSURE:

The substance can be absorbed into the body by inhalation of its vapour and by ingestion.

INHALATION RISK:

A harmful contamination of the air can be reached very quickly on evaporation of this substance at 20 °C.

EFFECTS OF SHORT-TERM EXPOSURE:

The substance irritates severely the eyes, the skin and the respiratory tract. Inhalation of vapour may cause lung oedema (see Notes). The effects may be delayed. Medical observation is indicated.

EFFECTS OF LONG-TERM OR REPEATED EXPOSURE:

The substance may have effects on the kidneys and liver.

**** SECTION 11 - PHYSICAL PROPERTIES ****

Boiling point: 121 degree

Melting point: -2 degree

Relative density (water = 1): 1.031

Solubility in water: none

Vapour pressure, kPa at 20 degree: 2.2

Relative vapour density (air = 1): 5.3

**** SECTION 12 – TOXICOLOGICAL INFORMATION ****

ACUTE EFFECTS

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WARNING: AVOID EYE CONTACT BECAUSE TETRAMETHYL ORTHOSILICATE UNDERGOES HYDROLYSIS READILY, PRODUCING METHANOL WHICH CAUSES IRREVERSIBLE BLINDNESS.

CONTACT WITH MOISTURE LIBERATES METHANOL. INGESTION OF METHANOL MAY CAUSE BLINDNESS, NAUSEA, HEADACHE, VOMITING, GASTROINTESTINAL UPSET, DIZZINESS, IRREGULAR BREATHING, WEAKNESS, CONFUSION, DROWSINESS, UNCONSCIOUSNESS, AND DEATH.

MATERIAL IS EXTREMELY DESTRUCTIVE TO TISSUE OF THE MUCOUS MEMBRANES AND UPPER RESPIRATORY TRACT, EYES AND SKIN.

INHALATION MAY RESULT IN SPASM, INFLAMMATION AND EDEMA OF THE LARYNX AND BRONCHI, CHEMICAL PNEUMONITIS AND PULMONARY EDEMA. SYMPTOMS OF EXPOSURE MAY INCLUDE BURNING SENSATION, COUGHING, WHEEZING, LARYNGITIS, SHORTNESS OF BREATH, HEADACHE, NAUSEA AND VOMITING.

TO THE BEST OF OUR KNOWLEDGE, THE CHEMICAL, PHYSICAL, AND TOXICOLOGICAL PROPERTIES HAVE NOT BEEN THOROUGHLY INVESTIGATED.

MAY BE HARMFUL IF ABSORBED THROUGH THE SKIN.

CAN CAUSE BLINDNESS.

TOXIC IF INHALED.

MAY BE HARMFUL IF SWALLOWED.

CHRONIC EFFECTS

TARGET ORGAN(S):

EYES

KIDNEYS

LUNGS

SILICIC ACID, TETRAMETHYL ESTER

TOXICITY DATA

ORL-RAT LD50 1.56 mg kg-1

IHL-RAT LC50 42 ppm/4h

SKN-RBT LD50 6.3 mg kg-1

TARGET ORGAN DATA

SENSE ORGANS AND SPECIAL SENSES (OTHER EYE EFFECTS)

LUNGS, THORAX OR RESPIRATION (ACUTE PULMONARY EDEMA)

KIDNEY, URETER, BLADDER (CHANGES IN TUBULES)

MUSCULO-SKELETAL (OTHER CHANGES)

ADDITIONAL INFORMATION

IHL-RAT LC50:0.4 MG/L/4H

ONLY SELECTED REGISTRY OF TOXIC EFFECTS OF CHEMICAL SUBSTANCES (RTECS) DATA IS PRESENTED HERE. SEE ACTUAL ENTRY IN RTECS FOR COMPLETE INFORMATION.

**** SECTION 13 – ECOLOGICAL INFORMATION ****

DATA NOT YET AVAILABLE.

**** SECTION 14 – DISPOSAL CONSIDERATIONS ****

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.

**** SECTION 15 – TRANSPORT INFORMATION ****

CONTACT FLUKA CHEMICAL COMPANY FOR TRANSPORTATION INFORMATION.

**** SECTION 16 – REGULATORY INFORMATION ****

EUROPEAN INFORMATION

FLAMMABLE

TOXIC

R 1

FLAMMABLE

R 23

TOXIC BY INHALATION.

R 34

CAUSES BURNS.

S 16

KEEP AWAY FROM SOURCES OF IGNITION - NO SMOKING.

S 45

IN CASE OF ACCIDENT OR IF YOU FEEL UNWELL, SEEK MEDICAL ADVICE IMMEDIATELY (SHOW THE LABEL WHERE POSSIBLE).

S 26

IN CASE OF CONTACT WITH EYES, RINSE IMMEDIATELY WITH PLENTY OF WATER AND SEEK MEDICAL ADVICE.

S 36/37/39

WEAR SUITABLE PROTECTIVE CLOTHING, GLOVES AND EYE/FACE PROTECTION.

REVIEWS, STANDARDS, AND REGULATIONS

OEL=MAK

ACGIH TLV-TWA 1 PPM DTLVS* TLV/BEI, 1999

MSHA STANDARD: AIR-CL 5 PPM (30 MG/M3)

DTLVS* 3,169, 1971

OSHA PEL (CONSTRUC): 8H TWA 5 PPM (30 MG/M3)

CFR GBR 29, 1926.55, 1994

OSHA PEL (SHIPYARD): 8H TWA 5 PPM (30 MG/M3)

CFR GBR 29, 1915.1000, 1993

OEL-AUSTRALIA: TWA 1 PPM (6 MG/M3), JAN 1993

OEL-BELGIUM: TWA 1 PPM (6 MG/M3), JAN 1993

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OEL-DENMARK: TWA 1 PPM (6 MG/M3), JAN1999
OEL-FINLAND: TWA 5 PPM (30 MG/M3), STEL 10 PPM (60 MG/M3), JAN1999
OEL-FRANCE: VME 1 PPM (6 MG/M3), JAN1999
OEL-JAPAN: OEL 1 PPM (6 MG/M3), JAN1999
OEL-THE NETHERLANDS: MAC-TGG 1 PPM (6 MG/M3), JAN1999
OEL-NORWAY: TWA 1 PPM (6 MG/M3), JAN1999
OEL-SWITZERLAND: TWA 1 PPM (6 MG/M3), JAN1999
OEL-UNITED KINGDOM: TWA 1 PPM (6.3 MG/M3), STEL 5 PPM (32 MG/M3),
SEP2000
OEL IN ARGENTINA, BULGARIA, COLOMBIA, JORDAN, KOREA CHECK ACGIH TLV;
OEL IN NEW ZEALAND, SINGAPORE, VIETNAM CHECK ACGIH TLV
NIOSH REL TO METHYL SILICATE-AIR:10H TWA 1 PPM
NIOSH* DHHS #92-100,1992
EPA TSCA SECTION 8(B) CHEMICAL INVENTORY
EPA TSCA TEST SUBMISSION (TSCATS) DATA BASE, JANUARY 2001

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

MSDS Creation Date: Sep. 20th, 2006

Revision #1 Date: March 7th, 2009

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