

Material Safety Data Sheet

OS[®] 2200

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: OS[®] 2200 Crosslinking Agent.

OTHER/GENERIC NAMES: Trifunctional Ketoximino Silane, Vinyl (tri-MIBKO) Silane, vinyl tris (methylisobutylketoxime)silane, tris(4-methylpentan-2-oximino), (Vinyl tris(4-methyl-2-pentanone oximino)silane, 2-Pentanone, 4-methyl-, O,O',O''-(ethenylsilylidyne)trioxime

PRODUCT USE: For Use Only As A Silicone Crosslinking Agent. See Section 15 for regulatory information.

MANUFACTURER: Honeywell Specialty Materials
101 Columbia Road
Box 1053
Morristown, New Jersey 07962-1053

FOR MORE INFORMATION CALL:
(Monday-Friday, 9:00am-4:30pm)
1-800-322-2766

IN CASE OF EMERGENCY CALL:
(24 Hours/Day, 7 Days/Week)
1-800-707-4555 (Honeywell -Domestic)
602-365-4980 (Honeywell - International)
For Transportation Emergencies:
800-424-9300 (CHEMTREC - Domestic)
703-527-3887 (CHEMTREC - International)

2. COMPOSITION/INFORMATION ON INGREDIENTS

<u>INGREDIENT NAME</u>	<u>CAS NUMBER</u>	<u>WEIGHT %</u>
2-Pentanone, 4-methyl-, O,O',O''-(ethenylsilylidyne)trioxime	156145-64-1	90.0 Min.
Methyl Isobutyl Ketoxime (MIBKO) Impurity	105-44-2	3.0 Max.
Hexanes	110-54-3	< 1.0

Trace impurities and additional material names not listed above may also appear in Section 15 towards the end of the MSDS. These materials may be listed for local "Right-To-Know" compliance and for other reasons.

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW: Material is a clear to light yellow liquid that may cause skin, eye and respiratory tract irritation. Combustible.

POTENTIAL HEALTH HAZARDS

SKIN: May cause irritation. May be absorbed through the skin leading to effects similar to ingestion and inhalation.

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EYES: May cause irritation.

INHALATION: Inhalation of mist or vapor may irritate the respiratory tract and nasal passage. High concentrations may lead to drowsiness and respiratory failure. May cause effects similar to those described for ingestion.

INGESTION: Determined to be slightly toxic with acute oral exposure. Ingestion may cause drowsiness and anemia. Nausea, vomiting and reversible narcotic effects may occur. May produce blood effects, reducing the bloods' ability to transport oxygen (methemoglobinemia and anemia).

DELAYED EFFECTS: n-Hexane - Excessive exposure (at levels above the TLV) has been reported to cause peripheral neuropathy.

Ingredients found on one of the OSHA designated carcinogen lists are listed below.

<u>INGREDIENT NAME</u>	<u>NTP STATUS</u>	<u>IARC STATUS</u>	<u>OSHA LIST</u>
No ingredients listed in this section.			

4. FIRST AID MEASURES

SKIN: Wash affected area with soap and water, then flush with large quantities of water. Remove contaminated clothing and launder before reuse. Get medical attention for irritation or any other symptom.

EYES: Immediately flush with running water, continuing for at least 15 minutes, lifting eyelids periodically to remove contamination. Get immediate medical attention.

INHALATION: Remove to fresh air. If breathing has stopped, apply artificial respiration. If breathing is difficult, give oxygen provided a qualified operator is available. Get medical attention.

INGESTION: If conscious, rinse mouth with water, then give two to four glasses of water or milk. Induce vomiting as directed by medical personnel. Get immediate medical attention.

ADVICE TO PHYSICIAN: No specific instructions. Treat according to symptoms present.

5. FIRE FIGHTING MEASURES

FLAMMABLE PROPERTIES

FLASH POINT: > 142°F (61.1°C) < 200°F (93.3°C)

FLASH POINT METHOD: TAG Closed Cup.

AUTOIGNITION TEMPERATURE: 537.8°F (281°C)

UPPER FLAME LIMIT (volume % in air): Not determined

LOWER FLAME LIMIT (volume % in air): Not determined

FLAME PROPAGATION RATE (solids): Not applicable

OSHA FLAMMABILITY CLASS: Combustible liquid

EXTINGUISHING MEDIA:

Use carbon dioxide, dry chemical or alcohol foam (polar solvent foam). Standard foam is ineffective.

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UNUSUAL FIRE AND EXPLOSION HAZARDS:

Combustion would be expected to produce carbon monoxide, carbon dioxide and oxides of nitrogen.

SPECIAL FIRE FIGHTING PRECAUTIONS/INSTRUCTIONS:

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

6. ACCIDENTAL RELEASE MEASURES

IN CASE OF SPILL OR OTHER RELEASE: (Always wear recommended personal protective equipment.)

Eliminate sources of ignition. Provide ventilation to spill area. Absorb with inert absorbent and place in a closed, approved, labeled waste container. For large spills, dike up with inert material and pump into same container. Do not allow pump to overheat. Do not allow to enter into sewers or waterways.

Spills and releases may have to be reported to Federal and/or local authorities. See Section 15 regarding reporting requirements.

7. HANDLING AND STORAGE

NORMAL HANDLING: (Always wear recommended personal protective equipment.)

Use with adequate ventilation. Avoid contact with skin, eyes and clothing. Do not breathe vapors. Keep away from sources of ignition. Ground material during liquid transfer to avoid static build up.

Gloves are required when handling OS-2200. Recommended materials of construction for gloves include butyl rubber, neoprene or nitrile. Natural rubber is **not** suitable.

STORAGE RECOMMENDATIONS:

Store in a cool, dry, well ventilated area away from heat, strong oxidizers and acids. Keep containers upright and tightly sealed. Protect from physical damage.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

ENGINEERING CONTROLS:

General mechanical ventilation is recommended. Use local ventilation at product handling and transfer points.

PERSONAL PROTECTIVE EQUIPMENT

SKIN PROTECTION:

All manufacturers and processors are required to use gloves when handling OS-2200. Under normal circumstances, rubber gloves and full work clothing are adequate. If contact with liquid is possible, wear impervious clothing. Recommended materials of construction for gloves include butyl rubber, neoprene or nitrile. Natural rubber is **not** suitable. Showering after work is recommended.

EYE PROTECTION:

Wear chemical safety glasses or goggles.

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RESPIRATORY PROTECTION:

Not required for properly ventilated areas. If there is potential for inhalation of vapor or mist, use an appropriate NIOSH approved respirator.

The respirator must be selected based on contamination levels and use conditions found in the workplace, must not exceed the working limits of the respirator and be approved by the National Institute for Occupational Safety and Health (NIOSH) and used in accordance with Occupational Safety and Health Administration (OSHA) 29 CFR 1910.134.

ADDITIONAL RECOMMENDATIONS:

Provide eyewash stations and safety showers convenient to work areas.

EXPOSURE GUIDELINES

<u>INGREDIENT NAME</u>	<u>ACGIH TLV</u>	<u>OSHA PEL</u>	<u>OTHER LIMIT</u>
Hexane, other isomers.	500 ppm (TWA) 1000 ppm (STEL)	500 ppm (TWA)	None
n-Hexane	50 ppm (TWA), Skin	50 ppm (TWA)	BEI: 5 mg/g creatinine

* = Limit established by Honeywell International, Inc.

** = Workplace Environmental Exposure Level (AIHA).

*** = Biological Exposure Index (ACGIH).

OTHER EXPOSURE LIMITS FOR POTENTIAL DECOMPOSITION PRODUCTS:

None.

9. PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE:	Clear to light yellow
PHYSICAL STATE:	Liquid
MOLECULAR WEIGHT:	394
CHEMICAL FORMULA:	C ₂₀ H ₃₆ N ₃ O ₃ Si
ODOR:	Mild organic
SPECIFIC GRAVITY (water = 1.0):	0.94 g/ml @ 71.6°F (22.0°C)
SOLUBILITY IN WATER (weight %):	Reacts with water
pH:	6
BOILING POINT:	Decomposes above 404.6°F (207°C) @ 760 torr.
MELTING POINT:	-100.3°F (-73.5°C)
VAPOR PRESSURE:	7.2 x 10 ⁻⁴ Pa @ 77°F (25°C)
VAPOR DENSITY (air = 1.0):	Not determined
EVAPORATION RATE:	Not determined COMPARED TO: Not applicable
% VOLATILES:	Not determined
FLASH POINT:	> 142°F (61.1°C) < 200°F (93.3°C)

(Flash point method and additional flammability data are found in Section 5.)

10. STABILITY AND REACTIVITY

NORMALLY STABLE? (CONDITIONS TO AVOID):

Stable under normal conditions. Avoid high heat and moisture.

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INCOMPATIBILITIES:

Do not expose to water, strong acids, oxidants or alkalis.

HAZARDOUS DECOMPOSITION PRODUCTS:

We have no data but would expect combustion to yield at least carbon monoxide, carbon dioxide and oxides of nitrogen

HAZARDOUS POLYMERIZATION:

Will not occur.

11. TOXICOLOGICAL INFORMATION

IMMEDIATE (ACUTE) EFFECTS:

Acute Oral (rat) LD₅₀ = > 2000 mg/kg

Acute Dermal (rat) LD₅₀ = > 2000 mg/kg

Rabbit Skin - Mild irritation

Rabbit Eye - Mild irritation

Skin Sensitization - Non Sensitizer (Guinea pig maximization test).

DELAYED (SUBCHRONIC AND CHRONIC) EFFECTS:

n-Hexane - Excessive exposure (at levels above the TLV) has been reported to cause peripheral neuropathy.

OS 2200 - Effects consistent with hemolytic anemia were observed in a 2 day oral rat study at dose levels of 15, 150 and 500 mg/kg. Effects were reversible.

Localized degenerative effects to the olfactory epithelium of rats were observed following 5-day exposure to the oxime impurity at 100 ppm.

OS 2200 is non-mutagenic based on in vitro laboratory tests. (Ames - Negative. Human Lymphocyte - Negative)

OTHER DATA: None.

12. ECOLOGICAL INFORMATION

Inhibitory Effect on the Respiration of Activated Sewage Sludge:

EC₅₀ (respiration inhibition) = > 100 mg/liter/3 hr.

6% biodegradation found within 28 days in Ready Biodegradability Test (closed bottle).

Trout LC₅₀ (96 hr). = > 100 mg/liter

Algar EC₅₀ (72 hr). = > 100 mg/liter

Daphnia EC₅₀ (48 hr.) = > 100 mg/liter

13. DISPOSAL CONSIDERATIONS

RCRA

Is the unused product a RCRA hazardous waste if discarded? No

If yes, the RCRA ID number is: None

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OTHER DISPOSAL CONSIDERATIONS: Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber. Observe all Local, State and Federal regulations.

The information offered here is for the product as shipped. Use and/or alterations to the product such as mixing with other materials may significantly change the characteristics of the material and alter the RCRA classification and the proper disposal method.

14. TRANSPORT INFORMATION

US DOT HAZARD CLASS: Not regulated for non bulk shipment
For bulk shipment (> 119 gal.): Combustible Liquid, n.o.s. (Ketoximino silane), NA 1993, PG III

US DOT ID NUMBER: None required for non bulk shipment
For bulk shipment (> 119 gal.): NA 1993

For additional information on shipping regulations affecting this material, contact the information number found in Section 1.

15. REGULATORY INFORMATION

TOXIC SUBSTANCES CONTROL ACT (TSCA)

TSCA INVENTORY STATUS: On the TSCA Inventory.

OTHER TSCA ISSUES: OS 2200 is the subject of a TSCA Significant New Use Rule (SNUR). Exports of OS 2200 or a mixture containing OS 2200 are subject to the export notification requirements of Section 12(b) of TSCA.

SARA TITLE III/CERCLA

"Reportable Quantities" (RQs) and/or "Threshold Planning Quantities" (TPQs) exist for the following ingredients.

<u>INGREDIENT NAME</u>	<u>SARA/CERCLA RQ (lb)</u>	<u>SARA EHS TPQ (lb)</u>
No ingredients listed in this section.		

Spills or releases resulting in the loss of any ingredient at or above its RQ requires immediate notification to the National Response Center [(800) 424-8802] and to your Local Emergency Planning Committee.

SECTION 311 HAZARD CLASS: Immediate. Fire. Delayed.

SARA 313 TOXIC CHEMICALS:

The following ingredients are SARA 313 "Toxic Chemicals". CAS numbers and weight percents are found in Section 2.

<u>INGREDIENT NAME</u>	<u>COMMENT</u>
No ingredients listed in this section.	

STATE RIGHT-TO-KNOW

In addition to the ingredients found in Section 2, the following are listed for state right-to-know purposes.

<u>INGREDIENT NAME</u>	<u>WEIGHT %</u>	<u>COMMENT</u>
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No ingredients listed in this section.

ADDITIONAL REGULATORY INFORMATION:

Manufacture, importation or processing of OS 2200 in the US is subject to the following requirements:

Significant new uses of OS 2200 are subject to reporting to the Environmental Protection Agency (EPA). Use of OS 2200 other than as a silicone crosslinker is a new use. Persons wishing to use OS 2200 for purposes other than as a silicone crosslinker must notify the EPA at least ninety days before commencing manufacture, importation or processing.

Gloves and impervious clothing when necessary are required personal protective equipment for persons likely to have dermal exposure to OS 2200

Each manufacturer, importer and processor of OS 2200 must maintain the following records for five years from the date of creation:

Records documenting the manufacture and importation volume of OS 2200 and the corresponding dates of manufacture and import.

Records documenting volumes of the substance purchased in the United States by processors of the substance, names and addresses of the suppliers, and corresponding dates of purchase.

Records documenting the names(s) and addresses (including shipment destination address, if different) of all persons outside the site of manufacture, importation or processing to whom the manufacturer, importer or processor directly sells or transfers the substance, the date of each sale or transfer and the quantity of the substance sold or transferred on such date.

Records documenting establishment and implementation of a program for the use of any applicable personal protective equipment required.

Records documenting that chemical protective clothing is impervious to OS 2200.

WHMIS CLASSIFICATION (CANADA):

Not determined

FOREIGN INVENTORY STATUS:

On ELINCS.

Notified for commercial sale in Korea. Approved by the Korean MOE and MOL.

16. OTHER INFORMATION

CURRENT ISSUE DATE: August, 2004

PREVIOUS ISSUE DATE: April 8, 2002

CHANGES TO MSDS FROM PREVIOUS ISSUE DATE ARE DUE TO THE FOLLOWING:

Amended or modified the following:

Added Registered Trademark to product name.

Section 1: Additional generic names. Information Telephone Number

Section 2: Added CAS number and chemical name

Section 9: Added Molecular weight and Chemical formula

Section 14: Added hazard inducer to Proper Shipping Name

OTHER INFORMATION: None.