

OS® 2000/440 Vinyl Oximino Silane

Version 1

Revision Date 01/21/2010

Print Date 02/24/2010

SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Product name : OS® 2000/440 Vinyl Oximino Silane
MSDS Number : 00000007066
Product Use Description : Crosslinker for Silicone Sealant.

Company : Honeywell International, Inc.
101 Columbia Road
Morristown, NJ 07962-1057

For more information call : 1-800-322-2766
(Monday-Friday, 9:00am-5:00pm)

In case of emergency call : **Medical: 1-800-498-5701**
: **Transportation: 1-800-424-9300 or +1-703-527-3887**
: (24 hours/day, 7 days/week)

SECTION 2. HAZARDS IDENTIFICATION**Emergency Overview**

Form : liquid

Color : colourless

Odor : ether-like

Hazard Summary : Combustible. Harmful by inhalation. May be harmful if swallowed. May be harmful if absorbed through skin. Irritating to eyes and respiratory system. May cause burns. May irritate skin. May cause allergic skin reaction. May cause irritation of the gastrointestinal tract. Will reduce the ability of the blood to transport oxygen (methemoglobinemia and anemia).

Potential Health Effects

Skin : May irritate skin.
May be harmful if absorbed through skin.
May cause allergic skin reaction.
May cause systemic poisoning with symptoms paralleling those of inhalation.

Eyes : Irritating to eyes.
Signs/symptoms can include redness, swelling, pain, and tearing.
May cause burns.

Ingestion : Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhoea.

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- May cause systemic poisoning with symptoms paralleling those of inhalation.
- Inhalation** : May cause respiratory tract irritation.
Vapours may be irritating to eyes, nose, throat, and lungs.
The vapour may have narcotic effect
Inhalation of high vapour concentrations can cause CNS-depression and narcosis.
Will reduce the ability of the blood to transport oxygen (methemoglobinemia and anemia).
- Chronic Exposure** : Will reduce the ability of the blood to transport oxygen (methemoglobinemia and anemia).
Toxicology data for the components
Based on animal evidence, there is limited evidence of a carcinogenic effect.
The significance of these findings for humans has not been determined.
- Aggravated Medical Condition** : Eye disorders
Skin disorders
Respiratory disorders
- Target Organs** : Eyes
Skin
Respiratory system
Central nervous system
Gastrointestinal tract

Carcinogenicity

No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP, IARC, or OSHA.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

| Component | CAS-No. | Weight percent |
|---|-----------|----------------|
| Butan-2-one O,O',O''-(vinylsilyldiyl)trioxime | 2224-33-1 | >90.00 |
| Butanone oxime | 96-29-7 | <1.00 |
| 2,2-Bis(2-butanone oximino) butane | - | <2.00 |

SECTION 4. FIRST AID MEASURES

- Inhalation** : Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Use oxygen as required, provided a qualified operator is present. Call a physician.
- Skin contact** : Wash off immediately with plenty of water for at least 15 minutes. Take off contaminated clothing and shoes immediately.

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- Wash contaminated clothing before re-use. Call a physician if irritation develops or persists.
- Eye contact : Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Call a physician immediately.
- Ingestion : Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Call a physician.

Notes to physician

- Treatment : Treat symptomatically.

SECTION 5. FIRE-FIGHTING MEASURES

- Flash point : 62 °C (144 °F)
closed cup
- Lower explosion limit : not determined
- Upper explosion limit : not determined
- Suitable extinguishing media : Carbon dioxide (CO₂)
Alcohol-resistant foam
Dry chemical
Water may be ineffective.
Decomposes in contact with water.
- Specific hazards during fire fighting : Combustible.
Vapours may form explosive mixtures with air.
Vapours are heavier than air and may spread along floors.
Vapors may travel to areas away from work site before igniting/flashing back to vapor source.
In case of fire hazardous decomposition products may be produced such as:
Carbon dioxide (CO₂), carbon monoxide (CO), oxides of nitrogen (NO_x), dense black smoke.
Methylethyl ketoxime (MEKO)
Silicone oxide
Methyl ethyl ketone
- Special protective equipment for fire-fighters : Wear self-contained breathing apparatus and protective suit.
- Additional advice : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Use water spray to cool unopened containers.

SECTION 6. ACCIDENTAL RELEASE MEASURES

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- Personal precautions : Wear personal protective equipment.
Immediately evacuate personnel to safe areas.
Keep people away from and upwind of spill/leak.
Ensure adequate ventilation.
Remove all sources of ignition.
Do not swallow.
Avoid breathing vapors, mist or gas.
Avoid contact with skin, eyes and clothing.
- Environmental precautions : Prevent further leakage or spillage if safe to do so.
Discharge into the environment must be avoided.
Prevent product from entering drains.
Do not flush into surface water or sanitary sewer system.
Do not allow run-off from fire fighting to enter drains or water courses.
- Methods for cleaning up : Ventilate the area.
No sparking tools should be used.
Use explosion-proof equipment.
Prevent spreading over a wide area (e.g. by containment or oil barriers).
Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13).

SECTION 7. HANDLING AND STORAGE**Handling**

- Handling : Wear personal protective equipment.
Use only in well-ventilated areas.
Keep container tightly closed.
Protect from atmospheric moisture and water.
Do not smoke.
Do not swallow.
Avoid breathing vapors, mist or gas.
Avoid contact with skin, eyes and clothing.
- Advice on protection against fire and explosion : Keep away from fire, sparks and heated surfaces.
Take precautionary measures against static discharges.
Ensure all equipment is electrically grounded before beginning transfer operations.
Use explosion-proof equipment.
Keep product and empty container away from heat and sources of ignition.
No sparking tools should be used.
No smoking.

Storage

- Requirements for storage : Store in area designed for storage of flammable liquids. Protect

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areas and containers from physical damage.
 Keep containers tightly closed in a dry, cool and well-ventilated place.
 Containers which are opened must be carefully resealed and kept upright to prevent leakage.
 Keep away from heat and sources of ignition.
 Keep away from direct sunlight.
 Protect from atmospheric moisture and water.
 Store away from incompatible substances.
 Container hazardous when empty.
 Do not pressurize, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Protective measures : Ensure that eyewash stations and safety showers are close to the workstation location.

Engineering measures : Use with local exhaust ventilation.
 Prevent vapor buildup by providing adequate ventilation during and after use.

Eye protection : Do not wear contact lenses.
 Wear as appropriate:
 Safety glasses with side-shields
 Safety goggles
 If splashes are likely to occur, wear:
 Goggles or face shield, giving complete protection to eyes

Hand protection : Solvent-resistant gloves (butyl-rubber)
 Neoprene gloves
 Gloves must be inspected prior to use.
 Replace when worn.

Skin and body protection : Wear as appropriate:
 Long sleeved clothing
 Gloves
 If splashes are likely to occur, wear:
 Protective suit

Respiratory protection : In case of insufficient ventilation wear suitable respiratory equipment.
 Use NIOSH approved respiratory protection.
 For rescue and maintenance work in storage tanks use self-contained breathing apparatus.

Hygiene measures : When using, do not eat, drink or smoke.
 Wash hands before breaks and immediately after handling the product.
 Keep working clothes separately.
 Remove and wash contaminated clothing before re-use.
 Do not swallow.

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Avoid breathing vapors, mist or gas.
Avoid contact with skin, eyes and clothing.

Exposure Guidelines

| | | | | | |
|----------------------|---------|-----------|--------|--------|------------|
| Methylethyl ketoxime | 96-29-7 | WEEL | TWA | 10 ppm | 36 mg/m3 |
| | | TX ESL | AN ESL | | 295 ug/m3 |
| | | TX ESL | ST ESL | | 2950 ug/m3 |
| | | HONEYWELL | TWA | | 3 ppm |
| | | HONEYWELL | STEL | | 10 ppm |

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

| | |
|-----------------------------|--|
| Form | : liquid |
| Color | : colourless |
| Odor | : ether-like |
| Melting point/range | : -59 °C (-74 °F) |
| Boiling point/boiling range | : 300 °C (572 °F) at 1,013 hPa |
| Vapor pressure | : 1,500 µPA at 117 °C (243 °F) |
| Density | : 0.988 g/cm3 at 20 °C (68 °F) |
| Water solubility | : Hydrolyzes to the oxime in the presence of moisture. |

SECTION 10. STABILITY AND REACTIVITY

| | |
|----------------------------------|---|
| Conditions to avoid | : Heat, flames and sparks. Keep away from direct sunlight. Protect from atmospheric moisture and water. |
| Materials to avoid | : Acids Oxidizing agents Metals Iron |
| Hazardous decomposition products | : Decomposes in contact with water. Possible decomposition products in case of hydrolysis are: Methylethyl ketoxime (MEKO) In case of fire hazardous decomposition products may be |

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produced such as:
Carbon dioxide (CO₂), carbon monoxide (CO), oxides of nitrogen (NO_x), dense black smoke.
Methyl ethyl ketone
Silicone oxide

Hazardous reactions : Avoid exposure to water, strong acids and heat, especially in the presence of iron.
Hazardous polymerisation may occur.
May react violently if in contact with electrophiles, such as ferric chloride.
Stable under recommended storage conditions.

SECTION 11. TOXICOLOGICAL INFORMATION

Acute oral toxicity : LD50 rat
Dose: > 2,000 mg/kg
Test substance: Butan-2-one O,O',O''-(vinylsilyldiylne)trioxime

Acute dermal toxicity : LD50 rabbit
Dose: 1,000 - 1,800 mg/kg
Test substance: Butanone oxime

Acute inhalation toxicity : LC50 rat
Dose: > 4.8 mg/l
Exposure time: 4 h
Test substance: Butanone oxime

Skin irritation : rabbit
Moderate skin irritation
Test substance: Butan-2-one O,O',O''-(vinylsilyldiylne)trioxime

Eye irritation : rabbit
Severe eye irritation
Test substance: Butan-2-one O,O',O''-(vinylsilyldiylne)trioxime

Sensitisation : guinea pig
May cause sensitization by skin contact.
Causes sensitization.
Test substance: The data measured is for the hydrolysed product.

Repeated dose toxicity : Oral gavage bioassay rat Subchronic toxicity, Blood effects, anemia, Lowest observed adverse effect level
25mg/kg/d
Exposure time: 13 Weeks
Test substance: Butanone oxime

Repeated dose toxicity : Inhalation rat Subchronic toxicity, Blood effects, anemia
NOEL: 25 ppm
Exposure time: 4 Weeks
Test substance: Butanone oxime

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- Repeated dose toxicity : Inhalation rat Carcinogenicity, Liver tumors, 374 ppm
Exposure time: 26 Months
Test substance: Butanone oxime
- Repeated dose toxicity : Inhalation mouse Carcinogenicity, Liver tumors, 374 ppm
Exposure time: 18 Months
Test substance: Butanone oxime
- Repeated dose toxicity : Oral rat Transient target organ effects, central nervous system effects
NOEL: 13 mg/kg
Exposure time: 13 Weeks
Test substance: Butanone oxime
- Genotoxicity in vitro : Mutagenicity (Escherichia coli - reverse mutation assay)
with or without metabolic activation
negative
Test substance: Butan-2-one O,O',O''-(vinylsilyldiyl)trioxime
- Genotoxicity in vitro : Mutagenicity (Salmonella typhimurium - reverse mutation assay)
with or without metabolic activation
negative
Test substance: Butan-2-one O,O',O''-(vinylsilyldiyl)trioxime
- Genotoxicity in vitro : Chromosome aberration test in vitro
Chinese Hamster Ovary Cells
positive, negative
Test substance: Butan-2-one O,O',O''-(vinylsilyldiyl)trioxime
- Genotoxicity in vivo : Species: mouse
Cell type: Bone marrow
Mutagenicity (micronucleus test)
Test substance: Butan-2-one O,O',O''-(vinylsilyldiyl)trioxime
negative
- Reproductive toxicity : Application Route: Oral
rat
Exposure time: Two-generation reproductive toxicity
Test substance: Butanone oxime
No toxicity to reproduction
- Teratogenicity : Application Route: Oral
rat
Test substance: Butanone oxime
Did not show teratogenic effects in animal experiments, even at maternally toxic concentrations.
- Teratogenicity : Application Route: Oral
rabbit
Test substance: Butanone oxime
Did not show teratogenic effects in animal experiments, even at maternally toxic concentrations.

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Additional advice : Toxicology data for the components
Based on animal evidence, there is limited evidence of a carcinogenic effect.
The significance of these findings for humans has not been determined.

SECTION 12. ECOLOGICAL INFORMATION

Biodegradability : Inherently biodegradable.
Test substance: Butanone oxime

Toxicity to fish : LC50
Species: not specified
Dose: > 100 mg/l
Exposure time: 96 h
Test substance: Butanone oxime

Toxicity to fish : LC50
Species: *Oryzias latipes* (Orange-red killifish)
Dose: > 100 mg/l
Exposure time: 14 d
Test substance: Butanone oxime

Toxicity to daphnia and other aquatic invertebrates. : LC50
Species: *Daphnia*
Dose: 750 mg/l
Exposure time: 48 h
Test substance: Butanone oxime

Toxicity to daphnia and other aquatic invertebrates. : Reproduction Test EC50
Species: *Daphnia*
Dose: > 100 mg/l
Exposure time: 21 d
Test substance: Butanone oxime
OECD

Toxicity to algae : Biomass EC50
Species: Algae
Dose: 6.1 mg/l
Exposure time: 72 h
Test substance: Butanone oxime

Toxicity to algae : Growth rate EC50
Species: Algae
Dose: 11.6 mg/l
Exposure time: 72 h
Test substance: Butanone oxime

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SECTION 13. DISPOSAL CONSIDERATIONS

Waste Information: Observe all Federal, State, and Local Environmental regulations.

SECTION 14. TRANSPORT INFORMATION

DOT UN-Number : 1993
 Proper shipping name : Combustible liquid, n.o.s.
 (Vinyl Oximino Silane)
 Class CBL
 Packing group III
 Hazard Labels NON
 Required only for US-DOT Bulk Shipments

TDG Not dangerous goods

IATA Not dangerous goods

IMDG Not dangerous goods

SECTION 15. REGULATORY INFORMATION**Inventories**

1907/2006 (EU) : This mixture contains only ingredients which have been subject to a pre-registration according to Regulation (EC) No. 1907/2006 (REACH).

US. Toxic Substances Control Act : On TSCA Inventory

Australia. Industrial Chemical (Notification and Assessment) Act : On the inventory, or in compliance with the inventory

Canada. Canadian Environmental Protection Act (CEPA). Domestic Substances List (DSL). (Can. Gaz. Part II, Vol. 133) : All components of this product are on the Canadian DSL list.

Korea. Toxic Chemical Control Law (TCCL) List : On the inventory, or in compliance with the inventory

Philippines. The Toxic Substances and Hazardous and Nuclear Waste Control Act : On the inventory, or in compliance with the inventory

China. Inventory of Existing Chemical Substances : On the inventory, or in compliance with the inventory

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New Zealand. Inventory of Chemicals (NZIoC), as published by ERMA New Zealand : On the inventory, or in compliance with the inventory

National regulatory information

SARA 311/312 Hazards : Fire Hazard
Acute Health Hazard
Chronic Health Hazard

California Prop. 65 : This product does not contain any chemicals known to the State of California to cause cancer, birth, or any other reproductive defects.

WHMIS Classification : B3
D2B
This product has been classified according to the hazard criteria of the CPR and the MSDS contains all of the information required by the CPR.

SECTION 16. OTHER INFORMATION

| | HMIS III | NFPA |
|-----------------|-----------------|-------------|
| Health hazard | : 2* | 2 |
| Flammability | : 2 | 2 |
| Physical Hazard | : 1 | |
| Instability | : | 1 |

Further information

* - Chronic health hazard