

OS® 9000/440 Phenyl Oximino Silane

Version 1

Revision Date 01/29/2010

Print Date 02/24/2010

SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Product name : OS® 9000/440 Phenyl Oximino Silane
MSDS Number : 00000007070
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 : mild organic
Hazard Summary : Combustible. Harmful by inhalation. May be harmful if swallowed. May be harmful if absorbed through skin. May cause eye, skin, and respiratory tract irritation. 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 cause skin irritation.
May be harmful if absorbed through skin.
May cause allergic skin reaction.
May cause systemic poisoning with symptoms paralleling those of inhalation.
Eyes : May cause eye irritation.
Signs/symptoms can include redness, swelling, pain, and tearing.
Ingestion : Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhoea.
May cause systemic poisoning with symptoms paralleling those

OS® 9000/440 Phenyl Oximino Silane

Version 1

Revision Date 01/29/2010

Print Date 02/24/2010

- 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
2-butanone-O,O',O''-(phenylsilylidyne)trioxime	34036-80-1	>=90.00
Butanone oxime	96-29-7	<1.00
n-Hexane	110-54-3	<0.40

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. Wash contaminated clothing before re-use. Call a physician if

OS® 9000/440 Phenyl Oximino Silane

Version 1

Revision Date 01/29/2010

Print Date 02/24/2010

irritation develops or persists.

Eye contact : Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Call a physician if irritation develops or persists.

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 : 61 - 93 °C (142 - 199 °F)

Ignition temperature : 320 °C (608 °F)
at 1,019 mbar

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.

OS® 9000/440 Phenyl Oximino Silane

Version 1

Revision Date 01/29/2010

Print Date 02/24/2010

SECTION 6. ACCIDENTAL RELEASE MEASURES

- 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.
Keep product and empty container away from heat and sources of ignition.
Take precautionary measures against static discharges.
Ensure all equipment is electrically grounded before beginning transfer operations.
Use explosion-proof equipment.
No sparking tools should be used.
No smoking.

OS® 9000/440 Phenyl Oximino Silane

Version 1

Revision Date 01/29/2010

Print Date 02/24/2010

Storage

Requirements for storage areas and containers : Store in area designed for storage of flammable liquids. Protect 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
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

OS® 9000/440 Phenyl Oximino Silane

Version 1

Revision Date 01/29/2010

Print Date 02/24/2010

product.
 Keep working clothes separately.
 Remove and wash contaminated clothing before re-use.
 Do not swallow.
 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/m ³
		HONEYWELL	TWA		3 ppm
		HONEYWELL	STEL		10 ppm
n-Hexane	110-54-3	ACGIH	TWA		50 ppm

Skin designation:
 Can be absorbed through the skin.

NIOSH	REL	50 ppm	180 mg/m ³
OSHA Z1	PEL	500 ppm	1,800 mg/m ³
OSHA Z1A	TWA	50 ppm	180 mg/m ³

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Form	: liquid
Color	: colourless
Odor	: mild organic
Molecular Weight	: 363 g/mol
pH	: not applicable
Melting point/range	: <-25 °C (-13 °F)
Boiling point/boiling range	: 60 - 306 °C (140 - 583 °F) at 1,018 mbar Decomposes on heating.
Vapor pressure	: 0.003 Pa at 25 °C (77 °F)
Relative vapour density	: not determined
Density	: 0.995 g/cm ³ at 25 °C (77 °F)
Density	: 1.04 g/cm ³

OS® 9000/440 Phenyl Oximino Silane

Version 1

Revision Date 01/29/2010

Print Date 02/24/2010

Water solubility : at 20 °C (68 °F)
: 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 produced such as:
Carbon dioxide (CO₂), carbon monoxide (CO), oxides of nitrogen (NO_x), dense black smoke.
Methyl ethyl ketone
Silicone oxide

Hazardous reactions : Hazardous polymerisation may occur.
Avoid exposure to water, strong acids and heat, especially in the presence of iron.
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
OECD
Test substance: 2-butanone-O,O',O''-(phenylsilylidyne)trioxime

Acute dermal toxicity : LD50 rat
Dose: > 2,000 mg/kg
OECD Test Guideline 402
Test substance: 2-butanone-O,O',O''-(phenylsilylidyne)trioxime

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

Skin irritation : rabbit
Exposure time: 4 h

OS® 9000/440 Phenyl Oximino Silane

Version 1

Revision Date 01/29/2010

Print Date 02/24/2010

		Moderate skin irritation Test substance: 2-butanone-O,O',O''-(phenylsilyldiylne)trioxime
Eye irritation	:	rabbit Moderate eye irritation Test substance: 2-butanone-O,O',O''-(phenylsilyldiylne)trioxime
Sensitisation	:	Maximisation Test guinea pig Causes sensitization. Test substance: 2-butanone-O,O',O''-(phenylsilyldiylne)trioxime
Repeated dose toxicity	:	Oral rat Hemolytic toxicity, anemia, No observed adverse effect level 10mg/kg/d Exposure time: 28 d Test substance: 2-butanone-O,O',O''-(phenylsilyldiylne)trioxime
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
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: 2-butanone-O,O',O''-(phenylsilyldiylne)trioxime
Genotoxicity in vitro	:	Mutagenicity (Salmonella typhimurium - reverse mutation assay) with or without metabolic activation negative Test substance: 2-butanone-O,O',O''-(phenylsilyldiylne)trioxime
Genotoxicity in vitro	:	Chromosome aberration test in vitro

OS® 9000/440 Phenyl Oximino Silane

Version 1

Revision Date 01/29/2010

Print Date 02/24/2010

	Human lymphocytes with or without metabolic activation negative Test substance: 2-butanone-O,O',O''-(phenylsilyldiylne)trioxime
Genotoxicity in vivo	: Mutagenicity (in vivo mammalian bone-marrow cytogenetic test, chromosomal analysis) Species: mouse Cell type: Bone marrow Test substance: 2-butanone-O,O',O''-(phenylsilyldiylne)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.
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	: Biodegradation: 48 % Exposure time: 28 d Not readily biodegradable. Test substance: 2-butanone-O,O',O''-(phenylsilyldiylne)trioxime Modified Sturm Test
Toxicity to fish	: LC50 Species: Oncorhynchus mykiss (rainbow trout) Dose: > 89.8 mg/l Exposure time: 96 h Test substance: 2-butanone-O,O',O''-(phenylsilyldiylne)trioxime 92/69/EEC, C.1

OS® 9000/440 Phenyl Oximino Silane

Version 1

Revision Date 01/29/2010

Print Date 02/24/2010

Toxicity to daphnia and other aquatic invertebrates.	:	EC50 Species: Daphnia Dose: > 101 mg/l Exposure time: 48 h Test substance: 2-butanone-O,O',O''-(phenylsilylidyne)trioxime EEC 92/69/V, C2
Toxicity to algae	:	Biomass EC50 Species: Pseudokirchneriella subcapitata (green algae) Dose: 13.8 mg/l Exposure time: 72 h Test substance: 2-butanone-O,O',O''-(phenylsilylidyne)trioxime
Toxicity to algae	:	Growth rate EC50 Species: Pseudokirchneriella subcapitata (green algae) Dose: 22 mg/l Exposure time: 72 h Test substance: 2-butanone-O,O',O''-(phenylsilylidyne)trioxime
Toxicity to algae	:	NOEC Species: Pseudokirchneriella subcapitata (green algae) Dose: 4.34 mg/l Exposure time: 72 h Test substance: 2-butanone-O,O',O''-(phenylsilylidyne)trioxime
Toxicity to bacteria	:	Respiration inhibition IC50 Species: activated sludge Dose: > 1,000 mg/l Exposure time: 3 h Test substance: 2-butanone-O,O',O''-(phenylsilylidyne)trioxime

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. (Phenyl 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		

OS® 9000/440 Phenyl Oximino Silane

Version 1

Revision Date 01/29/2010

Print Date 02/24/2010

SECTION 15. REGULATORY INFORMATION**Inventories**

- 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.
- Japan. Kashin-Hou Law List : On the inventory, or in compliance with the inventory
- 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 : Not in compliance with the inventory
- China. Inventory of Existing Chemical Substances : 2-butanone-O,O',O''-(phenylsilylidyne)trioxime 34036-80-1
: On the inventory, or in compliance with the inventory
- 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

OS® 9000/440 Phenyl Oximino Silane

Version 1

Revision Date 01/29/2010

Print Date 02/24/2010

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

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