1. CHEMICAL PRODUCT/COMPANY IDENTIFICATION

Name: MS-900
RTV Silicone Sealant/Adhesive

Product Use: Silicone sealant/adhesive

Recommended restrictions: Industrial use only

MANUFACTURER/DISTRIBUTOR:

Miller-Stephenson Chemical
55 Backus Ave.
Danbury, Conn. 06810 USA
(203) 743-4447

Emergency Phone Number:
(800) 424-9300

2. HAZARDS IDENTIFICATION

Hazard classification
Serious eye damage/eye irritation: Category 2
Skin sensitization: Category 1
Reproductive toxicity: Category 2
Specific target organ (repeated exposure): Category 2

Label elements:
Signal word
Warning

Pictograms

Hazard Statements
Causes serious eye irritation.
May cause an allergic skin reaction.
Suspected of damaging fertility.
May cause damage to organs (Cardiovascular/Hematological: hematopoiesis) through prolonged or repeated exposure.

Precautionary Statements
Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
Wear protective gloves/protective clothing/eye protection/face protection.
Avoid breathing dust/fume/gas/mist/vapors/spray.
Wash skin thoroughly after handling.
Contaminated work clothing should not be allowed out of the workplace.
IF ON SKIN: Wash with plenty of water. If skin irritation or rash occurs: Get medical advice/attention. Get medical advice/attention if you feel unwell.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
If eye irritation persists: Get medical advice/attention.
IF exposed or concerned: Get medical advice/attention.
Take off contaminated clothing and wash it before reuse.
Store in a well-ventilated place. Keep container tightly closed.
Dispose of contents/ container in accordance with local, regional, national, international regulations.

Substances formed under the condition of use: This product reacts with water, moisture, or humid air to evolve Methylethylketoxime.

3. HAZARDOUS INGREDIENTS

Material (s)	CAS No.	Approximate %
Methyloximesilane*	Proprietary*	1 - < 3
Vinyloximesiliane*	Proprietary*	< 1
Alkosilane*	Proprietary*	< 1
Methylethylketoxime (impurity)	96-29-7	< 1
Octamethylcyclotetrasiloxane (impurity)	556-76-2	< 1

*Designates that a specific chemical identity and/or percentage or composition has been withheld as a trade secret.

4. FIRST AID MEASURES

Inhalation: Move to fresh air. Call a physician if symptoms develop or persist.

Eye: Rinse immediately with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if irritation develops and persists.

Skin: Wash off with soap and plenty of water. For minor skin contact, avoid spreading material on unaffected skin. If skin irritation or rash occurs: Get medical advice/attention. Take off contaminated clothing and wash before reuse.

Ingestion: Rinse mouth. Get medical attention immediately.

Most important symptoms/effects, acute and delayed: Dermatitis. Rash. Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. May cause an allergic skin reaction. Prolonged exposure may cause chronic effects.

Indication of immediate medical attention and special treatment needed: Treat symptomatically.

5. FIRE FIGHTING MEASURES

Flash Point: 204.8°F (96°C) Closed Cup

Autoignition Temperature: Not Determined **Flammable Limits in Air, % by Vol.:** Not Determined

Suitable extinguishing media: Water fog. Foam. Carbon Dioxide. Dry chemical powder.

Unsuitable extinguishing media: None known.

Specific hazards arising from the chemical: By heating and fire, harmful vapors/gases may be formed. Nitrogen oxide.s (corrosive)

Special protective equipment and precautions for firefighters: Must use standard protective equipment including flame retardant coat, helmet, gloves, rubber boots, and self-contained breathing apparatus.

Fire-fighting equipment/instructions: Move containers from fire area if you can do so without risk.

6. ACCIDENTAL RELEASE MEASURES

Shut off all ignition sources. Keep unnecessary personnel away. Ensure adequate ventilation. Wear appropriate personal protective equipment. Contain the spill or leak. Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination. Neve return spills to original containers for re-use.

7. HANDLING AND STORAGE

Handling: Use with adequate ventilation. Wash hands thoroughly after handling. Do not handle until all safety precautions have been read and understood. Avoid contact with eyes and skin. Do not breathe mist or vapors.

Storage: Keep container closed tightly when not in use. Store in cool, dry place out of direct sunlight.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Guidelines:

Vender Guide; 3ppm (TWA), 10 ppm (STEL)
AIHA WEEL*; 10 ppm (TWA)
[Methylethylketoxime; decomposed product]
(*AIHA WEEL = American Industrial Hygiene Association Workplace Environmental Exposure Level)

Appropriate engineering controls: Provide adequate general and local exhaust ventilation. Provide eyewash station. Pay attention to ventilation such as local exhaust, mechanical and/or door open for at least 24 hours after application.

Eye/face protection: Tightly sealed safety glasses according to EN 166.
Skin protection: Wear protective gloves. Wear suitable protective clothing.
Respiratory protection: If airborne concentrations are above the applicable exposure limits, use NIOSH approved respiratory protection.

Thermal hazards: Wear appropriate thermal protective clothing, when necessary.

General hygiene considerations: Avoid contact with eyes. Avoid contact with skin. When using, do not eat, drink or smoke. Keep away from food and drink. Wash hands before breaks and immediately after handling the product. Contaminated work clothing should not be allowed out of the workplace. Handle in accordance with good industrial hygiene and safety practice.

9. PHYSICAL AND CHEMICAL PROPERTIES

Boiling Point: N.A.

Melting point: N.A.

Specific Gravity: 1.03 (25°C)

Vapor Pressure(mmHg): Negligible (25°C)

Vapor Density (Air=1): >1

Solubility in H_2O: Not soluble

Evaporation Rate: <1 (Butyl Acetate=1)

Color: Translucent

Appearance: Paste

Odor: Oxime odor

10. STABILITY AND REACTIVITY

Chemical Stability: Stable at normal conditions.

Incompatible Materials: Strong oxidizing agents. Water, moisture.

Condition to avoid: None known.

Hazardous decomposition products: Water, moisture, or humid air can cause Methylethylketoxime. Thermal breakdown of this product during fire or very high heat condition may evolve the following hazardous decomposition products: Carbon oxides and traces of incompletely burned carbon compounds. Silicone dioxide, Nitrogen oxides, Formaldehyde.

Hazardous Polymerization: Will not occur.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Ingestion: No significant effects are expected.

Inhalation: No significant effects are expected.

Skin contact: May cause an allergic skin reaction.
Eye contact: Causes serious eye irritation.

Symptoms related to the physical, chemical and toxicological characteristics: Dermatitis. Rash. Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. May cause an allergic skin reaction.

Acute toxicity

Alkoxysilane (CAS Proprietary)

Dermal LD50: > 2000 mg/kg in rabbits
Inhalation LC50: 1.49 – 2.44 mg/l, 4 hours in rats
Oral LD50: 2400 mg/kg in rats

Methylethylketoxime (impurity) (CAS-96-29-7)
Dermal LD50: 200 µl/kg in rabbits
Oral LD50: 930 mg/kg in rats

Skin corrosion/irritation: SKIN-RABBIT: Moderatly irritating (Alkoxysilane)
SKIN-RABBIT: 500mg/24hr MILD (Octamethycyclotetrasiloxane)

Serious eye damage/eye irritation: Causes serious eye damage. (Vinyloximesilane) (Methylethylketoxime)
EYE-RABBIT : 15mg SEVERE (Alkoxysilane)
Causes serious eye irritation. (Methyloximesilane)
EYE-RABBIT : MILD (Octamethylcyclotetrasiloxane)

Respiratory sensitization: Not available.
Skin sensitization: May cause an allergic skin reaction. [Methyloximesilane] [Vinyloximesilane] [Methylethylketoxime]
Positive (Guinea pig) [Alkoxysilane]
No evidence of sensitization [Octamethylcyclotetrasiloxane]

Germ cell mutagenicity: Negative (Ames test, Chromosome analysis, Micronucleus test) [Alkoxysilane]
Negative (Bacteria) [Octamethylcyclotetrasiloxane]
Carcinogenicity: Suspected of causing cancer. [Methylethylketoxime]
OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050) Not listed.

Reproductive toxicity: Octamethylcyclotetrasiloxane administered to rats by whole body inhalation at concentrations of 500 and 700 ppm for 70 days prior to mating, through mating, gestation and lactation resulted in decreases in live litter size. Additionally, increases in the incidence of deliveries of offspring extending over an unusually long time period (dystocia) were observed at these concentrations. Statistically significant alterations in these parameters were not observed in the lower concentrations evaluated (300 and 70 ppm). In a previous range-finding study, rats exposed to vapor concentrations of 700 ppm had decreases in the number of implantation sites and live litter size. The significance of these findings to humans is not known. [Octamethylcyclotetrasiloxane]
Developmental toxicity: NOAEL 500mg/kg/day (Rat), Maternal toxicity: NOAEL 500mg/kg/day (Rat) [Alkoxysilane]

Specific target organ toxicity – single exposure: Not available
Specific target organ toxicity - repeated exposure: May cause damage to the following organs through prolonged or repeated exposure:
Cardiovascular / Hematological : hematopoiesis. [Vinyloximesilane]
Cardiovascular / Hematological : hematopoiesis. [Methyloximesilane]

Repeated inhalation or oral exposure of mice and rats to octamethylcyclotetrasiloxane produced an increase in liver size. No gross histopathological or significant clinical chemistry effects were observed. An increase in liver metabolizing enzymes, as well as a transient increase in the number of normal cells (hyperplasia) followed by an increase in cell size (hypertrophy) were determined to be the underlying causes of the liver enlargement. The biochemical mechanisms producing these effects are highly sensitive in rodents, while similar mechanisms in humans are insensitive. A two year combined chronic and carcinogenicity assay was conducted on octamethylcyclotetrasiloxane. Rats were exposed by whole-body vapor inhalation 6hrs/day, 5days/week for up to 104weeks to 0, 10, 30, 150 or 700ppm of octamethylcyclotetrasiloxane. The increase in incidence of (uterine)endometrial cell hyperplasia and uterine adenomas(benign tumors) were observed in female rats at 700ppm. Since these effects only occurred at 700ppm, a level that greatly exceeds typical workplace or consumer exposure, it is unlikely that industrial, commercial or consumer uses of products containing octamethylcyclotetrasiloxane would result in a significant risk to humans. [Octamethylcyclotetrasiloxane]

Additional Information: Methyl Ethyl Ketoxime (MEKO) – Decomposition product.
Material with generate MEKO on exposure to humid air, gradually. Male rodents exposed to MEKO vapor at high concentration throughout their lifetime developed liver cancer. But relevance to humans in uncertain now. Please read the detail information to MEKO below.
Skin Irritation: Causes mild irritation. Can be absorbed through the skin
Eye Irritation: Causes severe irritation.
Acute Oral Tox: LD50 (rat) > 900mg/kg.
Acute Dermal Tox: LD50 (rabbit) > 1000mg/kg
Acute Inhalation Tox: LC50 (rat) = >4.8 mg/l/4hr
Inhalation Tox: Shows narcotic action at high concentration
May produce blood effects
Skin Sensitization: Positive (guinea pig)
Neurotoxicity: High dose can produce transient and reversible change in neurobehavioral function.
Carcinogenicity: Liver carcinomas were observed in a lifetime inhalation study (ca. 2 years) in which mice and rats were exposed.
Other Chronic Study**:** Degenerative effects on the olfactory epithelium of the nasal passages occurred in a concentration related manner in males and females for mice and rats at MEKO concentrations of 15.75 and 375 ppm. The significant change in hematological parameters were observed at 404ppm concentration.

12. ECOLOGICAL INFORMATION

Ecotoxicity: Toxic to aquatic life. Toxic to aquatic life with long lasting effects. (Alkoxysilane)
May cause long lasting harmful effects to aquatic life. (Octamethylcyclotetrasiloxane).

Alkoxysilane (CAS Proprietary)
Aquatic Algae: EbC50: Green algae (Selenastrum capricornutum): 5.5 mg/l, 72 hr
ErC50: Green algae (Selenastrum capricornutum): 8.8 mg/l, 72 hr

Crustacea: EC50: Water flea (Daphnia magna): 90 mg/l, 48 hr
Fish: LC50: Bluegill (Lepomis macrochirus): > 100mg/l, 96 hr
Fathead minnow (Pimephales promelas: > 100 mg/l, 96 hr
Rainbow Trout: > 100 mg/l, 96 hr

Methylethylketoxime (Impurity) (CAS 96-29-7)
Aquatic
Fish: LC50: Fathead minnow (Pimephales promelas): 777 - 914 mg/l, 96 hours

Persistence and degradability: Causes easily hydrolysis in water or atmosphere. (Alkosysilane).
Bioaccumulative potential: Bio concentration Factor (BCF)/ (Fathead minnows): 12400 Octamethylcyclotetrasiloxane).
Mobility in soil: Not available.

13. DISPOSAL CONSIDERATIONS

Dispose according to local, state, federal and provincial regulations.

14. TRANSPORT INFORMATION

U.S. DOT
Not Regulated

IATA
Not Regulated

IMDG
Not Regulated

15. REGULATORY INFORMATION

UNITED STATES REGULATORY INFORMATION

This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

TSCA: All components are listed or are exempt from listing on the Toxic Substances Control Act Inventory.

California Proposition 65: This product does not contain a chemical known to the State of California to cause cancer and/or birth defects or other reproductive harm.

EUROPEAN REGULATORY INFORMATION

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	Yes
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes

FOR INDUSTRIAL USE ONLY

REVISION DATE: JANUARY 2016

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