SAFETY DATA SHEET

Print Date: 5/31/2015

PRODUCT NAME: SIL-BOND RTV 4500 **COLOR: WHITE**	**REVISION DATE: May 31st 2015**

1. PRODUCT AND COMPANY IDENTIFICATION

Commercial Product Name: SIL-BOND RTV 4500
Product Classification: Silicone Sealant
Manufacturer:
Silco Inc.
7635 St. Clair Avenue
Mentor, OH 44060
PHONE: 440-975-8886 FAX: 440-975-8887

General Description: Silicone elastomer
Physical Form: Paste
Color: White
Odor: Acetic acid odor

NFPA PROFILE: Health – 1 Flammability – 1 Instability/Reactivity - 0

Note: NFPA = National Fire Protection Association

2. HAZARDS IDENTIFICATION

Physical Hazards: Not classified
Health Hazards: Reproductive toxicity (fertility) Category 2
Environmental Hazards: Not classified
OSHA Defined Hazards: Not classified

- Hazards not stated here are "Not Classified", "Not Applicable" or "Classification not possible".

GHS Label Elements

Signal Word: **Warning**

Hazard Statement: Suspected of damaging fertility. May cause eye/lung/skin irritation.

Precautionary Statement: Prevention: 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. Wash well after handling. Contaminated work clothing should not be allowed out of work place.

Response:	**SKIN:** Wash with plenty of soap and water. If skin irritation or rash occurs: Get medical attention / advice. Get medical attention / advice if you feel unwell. **EYES:** Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritant persists get medical attention / advice. **If exposed or concerned:** get medical attention or advice. Take off contaminated clothing and wash it before reuse.
Storage:	Store locked up.
Disposal:	Disposal of contents / container in accordance with local / regional /state / federal and international regulations.
Hazard(S) not Otherwise classified (HNOC):	None known.
Supplemental Information:	None known.
Substance(s) formed under the conditions of use:	This product reacts with water, moisture or humid air to evolve following compounds: Acetic acid The following material is embedded in the product and not available as respirable dusts. When used as intended or as supplied, the product will not pose hazards. Titanium oxide.
HMIS (Ratings):	**Health: 1** **Flammability: 1** **Physical hazard: 0**

3. COMPOSITION/ INGREDIENTS

Mixtures

Hazardous Ingredients

Chemical Name	**CAS Number**	**%**
Ethyltriacetoxysilane	17689-77-9	1 – 5
Methylacetoxysilane	4253-34-3	1 – 5
Titanium oxide	13463-67-7	< 1
Distillates (petroleum), hydrotreated middle	64742-46-7	1 – 7
Octamethylcyclotetrasiloxane (impurity)	556-67-2	< 1

4. FIRST AID MEASURES

Inhalation:	Remove to fresh air. Call a physician if symptoms develop or persist.
Skin Contact:	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 attention / advice. Take off contaminated clothing and wash before use.
Eyes Contact:	Immediately flush 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 developed or persists.
Ingestion:	Wash out mouth. Get medical attention immediately.
Most Important symptoms / effects, acute and delayed:	Direct contact with eyes may cause temporary irritation.
Indication of immediate Medical attention and Special treatment Needed:	Treat Symptomatically.
General Information:	If exposed or concerned: Get medical advice / attention. Ensure that medical personnel are aware materials involved and take precautions to protect themselves. Wash contaminated clothing before reuse.

5. FIRE FIGHTING MEASURES

Suitable extinguishing media:	Water fog. Foam. Dry chemical powder. Carbon dioxide (CO2
Unsuitable extinguishing media:	None known.
Specific hazards arising from the chemical:	By heating and fire, harmful vapors / gases may be formed.
Specific protective equipment and precautions for firefighters:	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.
General fire hazards:	No unusual fire or explosion hazards noted.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures	Keep unnecessary personnel away. Local authorities should be advised if significant spillages cannot be contained. Do not touch or walk through spilled material. Ensure adequate ventilation. Wear appropriate personal protective equipment.
Methods and materials for containment and cleaning up:	Eliminate sources of ignition. **Large Spills:** Dike the spilled material, where this is possible. Cover with plastic sheet to prevent spreading. Use a non-combustible material like vermiculite, sand or earth to soak up product and place into a container for later disposal. **Small Spills:** Wipe up with absorbent material (e.g. cloth). Clean surface thoroughly to remove residual contamination. Never return spills in original containers for reuse.
Environmental precautions:	Prevent further leakage or spillage if safe to do so.

7. HANDLING AND STORAGE

Precaution for safe handling:	Provide adequate ventilation. Use care in handling/storage. Obtain special instructions before use. Wash hands thoroughly after handling. Do not handle until all safety precautions have been read and understood. Pregnant and breastfeeding women must not handle this product. Do not breathe mist or vapor. Avoid contact with eyes. Avoid contact with skin. Avoid long term exposure.
Conditions for safe storage, Including any incompatibilities	Stored locked up. Keep container tightly closed. Keep out of reach of children. Store in a cool dry place out of direct sunlight. Keep in original container.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Occupational exposure limits

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Components	CAS #	Type	Value
Titanium oxide	13463-67-7	PEL	15 mg/m3
Decomposition			
Distillates (petroleum) hydrotreated middle	64742-46-7	TWA (Mist)	5 mg/m3
Acetic acid	64-19-7	PEL	25 mg/m3 10 ppm

US. ACGIH Threshold Limit Values			
Components			
Titanium dioxide	13463-67-7	TWA	10 mg/m3
Decomposition			
Acetic acid	64-19-7	STEL	15 ppm
		TWA	10 ppm
US. NIOSH: Pocket Guide to Chemical Hazards			
Decomposition			
Acetic acid	64-19-7	STEL	37 mg/m3
			15 ppm
		TWA	25 mg/m3
			10 ppm
Distillates (petroleum)	64742-46-7	TWA (Mist)	5mg/m3
hydrotreated middle		ST (Mist)	10mg/m3
Biological limit values:	No biological exposure limits for the ingredient(s).		

Appropriate engineering controls:	Provide adequate general and local exhaust. Provide eyewash station. Pay attention to ventilation such as local exhaust, mechanical and or / door open for at least 24 hours after applications.
Individual protection measures such as personal protective equipment.	
Eye / Face protection:	Tightly sealed safety glasses according to EN 166.
Skin / Hand protection:	Wear protective gloves.
Other:	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 or drink. Wash hands before breaks and immediately after handling the product. Contaminated work clothing should not be allowed out of the work place. Handle in accordance with good industrial hygiene and safety practice.

9. PHYSICAL/CHEMICAL CHARACTERISTICS

Appearance	
Form:	Paste
Color:	White
Odor:	Acetic acid odor

Odor Threshold:	Not available
pH:	Not available
Melting point / freezing point:	Not available
Initial boiling point and boiling range:	Not available
Flash Point:	141.8 ^{o}F (> 96 ^{0} C) Closed cup
Evaporative rate:	< 1 (Butyl Acetate = 1)
Flammability (solid, gas):	Not applicable
Upper / Lower flammability or explosive limits:	
Flammability limit – lower (%):	No data
Flammability limit – upper (%):	No data
Explosive limit – Lower (%):	Not available
Explosive limit – Upper (%):	Not available
Vapor pressure:	Negligible (25^{0} C)
Vapor density:	> 1 (air=1)
Relative density:	1.04 (25 ^{0} C)
Solubility (water):	Not soluble
VOC Content:	30 grams per liter
Partition coefficient: (n-octanol / water)	Not applicable
Auto-ignition temperature:	No data
Decomposition temperature:	Not available
Viscosity:	Not applicable
Molecular weight:	Not applicable

10. STABILITY AND REACTIVITY

Reactivity	No hazardous reaction known under normal conditions of use, storage and transport.
Chemical stability	Stable at normal conditions.
Possibility of hazardous Reactions	Hazardous polymerization does not occur.
Conditions to avoid	None known.
Incompatible materials	Strong oxidizing agents. Water and moisture.
Hazardous decomposition products:	This product reacts with water, moisture, or humid air to evolve following compounds. Acetic acid. Thermal breakdown of this product during fire or very high heat condition may evolve the following hazardous decomposition product: Carbon dioxides and traces of incompletely burned carbon compounds. Silicon dioxide. Formaldehyde.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Ingestion: Expected to be a low ingestion hazard.

Inhalation: Prolonged inhalation may be harmful.

Skin contact: No adverse effects due to skin contact are expected.

Eye contact: Direct contact with eyes may cause temporary irritation.

Symptoms related to the physical, chemical, and toxicological characteristics: Direct contact with eyes may cause temporary irritation.

Information on toxicological effects

Acute toxicity

Toxicological data

Decomposition

	CAS #	Species	Test Results
Acetic acid	64-19-7		
Acute			
Dermal			
LD50		Rabbit	1060 mg/kg
Inhalation			
LC 50		Guinea Pig	5000 ppm, 1 hours
		Mouse	5620 ppm, 1 hours
		Rat	11.4 mg/l, 4hours
Oral			
LD50		Mouse	4960 mg/kg
		Rabbit	1200 mg/kg
		Rat	3.31 g/kg
Distillates (petroleum) hydrotreated middle			
Oral		Rat	> 5,000 mg/kg
Inhalation			
LC 50		Rat	1.78 mg/l, 4 hours
Dermal			
		Rat	> 2,000 mg/kg

Skin corrosion / irritation: Causes severe skin burns and eye damage. (Acetic acid)
Skin-Rabbit: 500 mg/24hr.MILD (Octamethylcyclotetrasiloxane)

Serious eye damage/eye irritation: Causes serious eye damage. (Acetic acid)
Eye – Rabbit: MILD (Octamethylcycotetrasiloxane)

Respiratory Sensitization: Not available.

Skin Sensitization:	No evidence of sensitization (Octamethylcycotetrasiloxane)
Germ Cell Mutagenicity:	Negative (Bacteria) (Octamethylcycotetrasiloxane)
Carcinogenicity:	The following material is embedded in the product and not available as respirable dusts. When used as intended or as supplied, the product will not pose hazards. Titanium oxide.
IARC Monographs, Overall Evaluation of Carcinogenicity.	Titanium oxide (CAS 13463-67-7) 2B Possibly carcinogenic to humans.
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)
Specific target organ toxicity – single exposure:	Not available
Specific target organ toxicity – repeated exposure:	Repeated inhalation or oral exposure of mice and rats to Octamethylcycotetrasiloxane 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, 5 days a week for up to 104 weeks to 0, 10, 30, 150 or 700 ppm of Octamethylcyclotetrasiloxane. The increase in incidence of (uterine) endometrial cell hyperplasia and uterine adenomas

	(benign tumors) were observed in female rats at 700 ppm. Since these effects only occurred at 700 ppm, 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)
Aspiration hazard:	The substance or mixture is known to cause human aspiration toxicity hazards or has to be regarded as if it causes a human aspiration toxicity hazard. Distillates (petroleum), hydrotreated middle
Chronic effects:	Prolonged inhalation may be harmful. Prolonged exposure may cause chronic effects.
Further Information:	This product reacts with water, moisture or humid air to evolve following compounds: Acetic acid.

12. ECOLOGICAL CONSIDERATIONS

Ecotoxicity

- Octamethylcyclotetrasiloxane: May cause long lasting harmful effects to aquatic life.

Components		Species	Test Results
Titanium oxide (CAS 13463-67-7)			
Aquatic			
Crustacea	EC50	Water Flea (Daphnia magna)	> 1000 mg/l, 48 hours
Fish	LC50	Mummichog (Fundulus Heteroclitus)	> 1000 mg/l, 96 hours
Decomposition			
Acetic acid (CAS 64-19-7)			
Aquatic			
Crustacea	EC50	Water flea (Daphnia Magna)	65 mg/l, 48 hours
Fish	LC50	Bluegill (Leponis Macrochirus)	75mg/l, 96 hours

Persistence and degradability: Not available.
Bioaccumulative potential: Bio concentration Factor (BCF) / (Flathead minnow): 12400 Octamethylcyclotetrasiloxane.
Mobility in Soil: Not available.
Other adverse effects: Not available

13. DISPOSAL CONSIDERATIONS

Can be land-filled for cured product or burned in a chemical incinerator equipped with an afterburner and scrubber. Do not dispose the emptied container unlawfully. Observe all federal, state & local laws.

14. TRANSPORT INFORMATION

DOT: Not regulated as dangerous good.

IATA: Not regulated as dangerous good.

IMDG: Not regulated as dangerous good.

Transport in bulk according to Annex II of MARPDL 73/78 and The IBC Code: This product is not intended to be transported in bulk.

15. REGULATORY INFORMATION

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

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050): Not listed

SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT OF 1986 (SARA)

SARA 313 (TRI reporting)

US State Regulations

- **Massachusetts: Substance List:**
  Titanium oxide (CAS 13463-67-7)
- **New Jersey Worker and Community Right to Know Act:**
  Titanium oxide (CAS 13463-67-7)
- **Pennsylvania Worker and Community Right to Know Act:**
  Titanium oxide (CAS 13463-67-7)
- **Rhode Island RTK:** Not regulated.
- **California Proposition 65:** The following material is embedded in the product and not available as respirable dusts. When used as intended or as supplied, the product will not pose hazards.
- **US California Proposition 65 – CRT: Listed date / Carcinogenic substance**
  Titanium oxide (CAS 13463-67-7) Listed: September 2, 2011

International Inventories

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 (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemicals	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	Yes
Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes
United States	Toxic Substances Control Act (TSCA) Inventory	Yes

16. 0THER INFORMATION

Prepared by: Silco Inc.

These data are offered in good faith as typical values and not as product specifications. No warranty, either expressed or implied, is hereby made. The recommended industrial hygiene and safe handling procedures are believed to be generally applicable. However, each user should review these recommendations in the specific context of the intended use and determine whether they are appropriate.

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