

MATERIAL SAFETY DATA SHEET

SECTION 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT: 600 SILICONE SEALANT

Chemical Family/Use: Silicone Rubber

Formula: Mixture

SECTION 2. COMPOSITION/INFORMATION ON INGREDIENTS

<u>Product Composition/ CAS. Reg. No.</u>	<u>Approx. Wgt. % TWA</u>	<u>ACGIH TLV STEL</u>	<u>TWA</u>	<u>OSHA PEL STEL</u>	<u>Units</u>	
A. Hazardous						
Methyltriacetoxysilane 4253-34-3	1-5	10(R)	NE	10(R)	NE	PPM
Octamethylcyclotetrasiloxane 556-67-2	1-5	5 ppm	NE	GE REC	NE	GUIDE
B. Non-hazardous						
Silanol/STPD Siloxane W/ME SILSQXNS 68554-67-6	5-10	NF	NE	NF	NE	NA
Tetramer Treated Fumed Silica 68583-49-3	10-30	10	NE	15	NE	MG/M3
Dimethyl Polysiloxane Silanol/ST 70131-67-8	60-80	NA	NE	NA	NE	NA
Red Iron Oxide 1309-37-1	1-5	5	NE	10	NE	MG/M3

See Section 15 for description of any WHMIS Trade Secret(s)

SECTION 3. HAZARDS IDENTIFICATION

Emergency Overview:

This section not in use

Potential Health Effects:

Ingestion: Irritation of the mouth, throat, and stomach

Skin Contact: Uncured product contact will irritate lips, gums and tongue
Uncured product contact may irritate the skin

Inhalation: Causes mild respiratory irritation

Eye Contact: Uncured product contact irritation.

Medical Conditions Aggravated: None Known

Subchronic (Target Organ) Effects: Reproductive Disorders. May cause liver effects

Chronic Effects/Carcinogenicity: This product or one of its ingredients present 0.1% or more is NOT listed as a carcinogen or suspected carcinogen by NTP, IARC, or OSHA.

Products/Ingredients: This space reserved for special use

Principle routes of exposure: Eyes, Inhalation

Other: Acetic Acid released during curing.

Octamethylcyclotetrasiloxane

Ingestion: Rodents give large dose via oral gavage of octamethylcyclotetrasiloxane (1600 mg/kg day, 14 days) developed increased liver weight relative to unexposed

control animals due to hepatocellular hyperplasia (increased number of liver cells which appeared normal) as well as hypertrophy (increased cell size).
Inhalation: In inhalation studies, laboratory rodents exposed to octamethylcyclotetrasiloxane (300 ppm five days week, 90 days) developed increased liver weights in female animals relative to unexposed control animals. When the exposure was stopped, liver weights returned to normal. Microscopic examination of the liver cells did not show any evidence of pathology. Inhalation studies utilizing laboratory rabbits and guinea pigs showed no effects of liver weights. Inhalation exposures typical of industrial usage (5-10 ppm) showed no toxic effects in rodents.

Range finding reproductive studies were conducted (whole body inhalation, 70 days prior to mating, through mating, gestation and lactation). With octamethylcyclotetrasiloxane (D4). Rats were exposed to 70 and 700 ppm. In the 700 ppm group, there was a statistically significant reduction in mean litter size and in implantation sites. No D4 related clinical signs were observed in the pups and no exposure related pathological findings were found.

Interim results from a two generation reproductive study in rats exposed to 500 and 700 ppm D4 (whole body inhalation, 70 days prior to mating, through mating, gestation and lactation) resulted in a statically significant decrease in live mean litter size as well as extended periods of off spring delivery (dystocia). These results were not observed at the 70 and 300 ppm dosing levels.

The relevance of these data to humans is unclear. Further studies are ongoing.

This product contains Methylpolysiloxanes which can generate Formaldehyde at approximately 300°F (150°C) and above, in atmospheres which contain oxygen. Formaldehyde is a skin and respiratory sensitizer, eye and throat irritant, acute toxicant, and potential cancer hazard.

SECTION 4. FIRST AID MEASURES

Ingestion: None Known

Eye: In case of contact, immediately flush eyes with plenty of water for at least 15 minutes and get medical attention if irritation persists.

Skin: To clean from skin, remove completely with a dry cloth or paper towel, before washing with detergent and water.

Inhalation: Remove to fresh air.

Note to Physician: None known

SECTION 5. FIRE FIGHTING MEASURES

Flash Point (Method Used):	NA	(C) NA	(F) NA
Method:	NA		
Ignition Temp	UNK	(C) UNK	(F) UNK
Flammability Limits in air:	Lower (%) : NA	Upper(%) : NA	
Sensitivity to Mechanical Impact (Y/N):	No		
Sensitivity to Static Discharge:	Sensitivity to static discharge is not expected		
Extinguishing Media:	All standard firefighting media		
Special Firefighting Procedures:	None known		

SECTION 6. ACCIDENTAL RELEASE MEASURES

Action to be taken if material is released or spilled: Wipe, scrape or soak up in an inert material and put in a container for disposal. Wash walking surfaces with detergent and water to reduce slipping hazards. Wear proper protective equipment as specified in the protective equipment section.

SECTION 7. HANDLING AND STORAGE

Precautions To Be Taken In Handling And Storing:

Avoid contact with skin and eyes.
Remove contact lenses before using sealant. Do not handle lenses until all sealant has been cleaned from the fingertips for several days and transfer to lenses and cause severe eye irritation.
Product releases acetic acid during application and curing.
Use mechanical ventilation to stay below TLV of 10 ppm acetic acid.
Uncured product contact irritates eyes.
Uncured product contact may irritate skin.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Controls: Exhaust ventilation

Eyewash stations
Use in a well ventilated area
Localized ventilation should be used to control dust levels.

Respiratory Protection: Use in a well ventilated area

Use approved NIOSH respiratory protection if TLV exceeded or over exposure is likely.

Protective Gloves: Cloth gloves

Eyes and face Protection: Use safety glasses

Ventilation: Use only in well ventilated area

Mechanical ventilation

Other Protective Equipment: None known

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Product Information

Boiling Point:	NA	(C) NA	(F)
Vapor Pressure (20°C) (MM HG):	NEG		
Vapor Density (AIR=1):	NEG		
Freezing Point:	UNK	(C) UNK	(F)
Melting Point:	UNK	(C) UNK	(F)
Physical State:	Solid		
Odor:	Acetic Acid		
Color:	Red		
Odor Threshold (PPM)	1.0		
% Volatile by Volume:	<3.9		
Evap. Rate (Butyl Acetate=1)	Neg		
Specific Gravity (Water=1)	1.06		
Density (KG/M3)	1060		
Acid/Alkalinity (MEQ/G)	UNK		
PH	NA		
VOC (EPA METH.24) (G/L)	1060		
Solubility in Water (20°C)	Insoluble		
Solubility in Organic Solvent (State Solvent):	Toluene		

SECTION 10. SPECIAL PRECAUTIONS

Stability: Stable

Hazardous Polymerization: Will Not Occur

Hazardous Thermal Decomposition/Combustion Products:

Carbon Monoxide
Carbon Dioxide
Silicon Dioxide
Acetic Acid

Formaldehyde

Incompatibility (Materials To Avoid): None Known

Conditions to Avoid: None Known

SECTION 11. TOXICOLOGICAL INFORMATION

Methyltriacetoxysilane:

Acute Oral LD50 (MG/KG): 2,060 (RAT)

Acute Dermal LD50 (MG/KG): None Found

Acute Inhalation LC50 (MG/L): None Found

Other: None Found

AMES Test:

Octamethylcyclotetrasiloxane

Acute Oral LD50 (MG/KG): >64,000 (RAT)

Acute Dermal LD50 (MG/KG): >16,00 (RBT)

Acute Inhalation LC50 (MG/L): >41 MG/L 6HR (RAT)

Other: Non-irritating to the skin (human)

AMES Test:

Silanol/STPD Siloxane W/ME SILSQXNS

Acute Oral LD50 (MG/KG): >40,000 RAT, ESTM.

Acute Dermal LD50 (MG/KG): None Found

Acute Inhalation LC50 (MG/L): .535 MG/L ESTM

Other:

AMES Test:

Tetramer Treated Fumed Silica

Acute Oral LD50 (MG/KG): NA

Acute Dermal LD50 (MG/KG): NA

Acute Inhalation LC50 (MG/L): NA

Other:

AMES Test:

Dimethyl Polysiloxane Silanol/ST

Acute Oral LD50 (MG/KG): RAT>40,000

Acute Dermal LD50 (MG/KG): Unknown

Acute Inhalation LC50 (MG/L): RAT >535 MG/L (4HR)

Other:

AMES Test:

Red Iron Oxide

Acute Oral LD50 (MG/KG): None found

Acute Dermal LD50 (MG/KG): None Found

Acute Inhalation LC50 (MG/L): None Found

Other:

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicological Information: No data at this time

Chemical Fate Information: No data at this time

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal Method:

Disposal should be made in accordance with federal, state and local regulations.

SECTION 14. TRANSPORT INFORMATION

Dot Shipping Name:	None
Dot Hazard Class:	Not Dot Regulated
Dot Label(s):	None
UN/NA Number:	None
Placards:	None
IATA:	Not regulated by IATA
IMO IMDG-code:	NA
European Class:	
RID (OCTI):	NA
ADR (ECE):	NA
RAR (DATA):	NA

SECTION 15. REGULATORY INFORMATION

SARA Section 302: None Found
SARA (311, 312) Hazardous Class: Acute Health Hazard, Chronic Health Hazard
SARA (313) Chemicals: None
CPSC Classification: Irritant
WHMIS Hazard Class: D2A Very Toxic Materials
 D2B Toxic Materials
WHMIS Trade Secret: None
Export:
 SCHDLE B HTSUS: 3910.00 Silicones in Primary Form
 ECCN: EAR99
Hazard Rating System
 HMIS Flammability 0, Reactivity 0, Health 2
 NFPA Flammability 0, Reactivity 0, Health 2
California Proposition 65: None

SECTION 16. OTHER INFORMATION

This product or its components are on the European inventory of existing commercial chemicals (EINCES).....
These data are offered in good faith as typical values and not as a product specification. No warranty, either expressed or implied, is made. The recommended handling procedures are believed to be generally applicable. However, each user should review these recommendations in the specific content of the intended use.

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Product Data

ASI 600 Hi-Temperature Red Gasket Maker

DESCRIPTION

ASI 600 Hi-Temperature Red Gasket Maker is a one-part, moisture curing, RTV (room temperature vulcanizing) silicone that cures to form a tough rubber gasket.

ASI 600 was specifically formulated to be used as a formed-in-place gasket where operating temperatures up to 310°C (600°F) are reached intermittently. ASI 600 will remain permanently flexible and provides excellent resistance to aging, vibration and shock.

TYPICAL USES

The primary use for ASI 600 is formed-in-place gaskets in high temperature applications to replace conventional paper and cork gaskets. Such uses include:

Automotive

- valve covers
- axle housings
- water and oil pump seals
- thermostat housings
- bearing cap seals
- timing chain covers
- fuel pumps to blocks
- solenoid covers

Industrial

- pump and compressor gaskets
- appliance door gaskets
- humidifier gaskets
- air conditioner gaskets
- repairing torn silicone rubber sheets
- ductwork gaskets
- dust collection components
- wire and cable insulation
- furnace door gaskets

DIRECTIONS

ASI 600 is ready to use and requires no mixing or additives. The cure mechanism begins as soon as the sealant comes in contact with the air. At conditions of 25°C (77°F) and 50% relative humidity, the sealant will skin in 10 minutes and cure within 24 hours (1/4 bead), ultimate cure in 7 days.

SURFACE PREPARATION

All surfaces should be clean and dry. It is recommended that bonding surfaces be solvent wiped with a naphtha, ketone or chlorinated solvent. Suitable solvents include xylol, toluol and mineral spirits.

Do not solvent wipe with alcohols or oil-containing solvents such as Varsol.

For gasket applications, apply an even bead, with a diameter of 1/8 or less, to one surface, making certain to surround all bolt holes. Press, do not slide parts together, and torque normally. On surfaces where adhesion is not desired, a light coat of oil or grease will act as a release agent.

If removal of ASI 600 is necessary, it can be wiped off surfaces to be mated when uncured. After the material cures, it can be abraded or scraped from the surface.

ASI 600 is not recommended as a gasket for cylinder heads, manifolds or in contact with fuels.

USDA STATUS

American Sealant, Inc., has on file documentation from the USDA that states ASI 600 sealants are chemically acceptable for use on structural surfaces in official establishments operating under the Federal Meat and Poultry Inspection Program.

The final granting of authorization for the proposed use of such compounds is the responsibility of the inspector in charge of the official plant. Technical assistance will be provided by the Product Safety Branch of the USDA upon request.

PRIMING

ASI 600 is formulated for primary use as a formed-in-place gasket material because substrate release, rather than adhesion, is required. If good adhesion should be required, a primer should be used. Consult primer techsheet or contact ASI for technical assistance.

SPECIFICATIONS

ASI 600 meets the requirements of MIL-46106 Type 1 and meets FDA, USDA requirements.

SAFETY PRECAUTIONS

ASI 600 releases small amounts of acetic acid during cure. After cure, acetic acid odor disappears. Adequate ventilation should be provided with extensive use of this sealant.

On direct contact, uncured sealant will irritate eyes. Flush eyes well with water and call physician. Avoid prolonged contact with skin.

TYPICAL PROPERTIES

UNCURED:

Type	One-part, gasket maker
Appearance	Smooth, non-slump red paste
Specific Gravity	1.18
Extrusion Rate	250g/min (1/8" bead 90 psi)
Application Temperature Range	-18°C to +50°C (0°F to +120°F)
Cure Method	Acetoxo, moisture cure
Skin Over Time	10 minutes
Cure Time	24 hours (1/4" bead)
Slump/Sag	Nil

CURED:

at 25°C (77°F) and 50% R.H. for 7 days (1/4" bead)

Durometer Hardness (Shore A) (ASTM D 2240)	33
Tensile Strength (ASTM D 412)	350 psi
Elongation at Break (ASTM D 412)	400%
Tear Resistance (ASTM D 624, Die B)	50 ppi (2.7kN/m)
Temperature Range After Cure Short Periods	-57°C to 310°C (-70°F to 600°F)
Temperature Range After Cure Continuous Operation	-57°C to 260°C (-70°F to 500°F)
Shrink Factor	Nil

STORAGE

ASI 600, when stored in original unopened container at or below 32°C (90°F) has a shelf life of 12 months from date of shipment.

PACKAGING

ASI 600 is supplied in:
(10.2 fl. oz.) caulking cartridges,
(40 lb.) pails and (495 lb.) drums.

WARRANTY AND LIMITATIONS

ASI 600 warrants only that its products will meet its specifications. ASI shall in no event be liable for incidental or consequential damages. Except as expressly stipulated, ASI's liability, expressed or implied, is limited to the stated selling price of any defective goods.