DOW CORNING

DOW CORNING CORPORATION
Material Safety Data Sheet

Version: 3.2
Revision Date: 2011/10/31

DOW CORNING(R) 282 ADHESIVE

1. PRODUCT AND COMPANY IDENTIFICATION

Dow Corning Corporation
South Saginaw Road
Midland, Michigan 48686

24 Hour Emergency Telephone: (989) 496-5900
Customer Service: (989) 496-6000
Product Disposal Information: (989) 496-6315
CHEMTREC: (800) 424-9300

MSDS No.: 01062387
Revision Date: 2011/10/31

Generic Description: Silicone resin solution.
Physical Form: Viscous Liquid
Color: Colorless
Odor: Aromatic odor

NFPA Profile: Health 2 Flammability 3 Instability/Reactivity 0

Note: NFPA = National Fire Protection Association

2. HAZARDS IDENTIFICATION

POTENTIAL HEALTH EFFECTS

Acute Effects

Eye: Direct contact may cause moderate irritation. Vapor may cause eye irritation.

Skin: May cause severe irritation.

Inhalation: Vapor may irritate nose and throat. Overexposure by inhalation may cause drowsiness, dizziness, confusion or loss of coordination.

Oral: Low ingestion hazard in normal use. Swallowing large amounts may cause drowsiness.

Prolonged/Repeated Exposure Effects

Skin: Repeated or prolonged contact may cause defatting and drying of skin which may result in skin irritation and dermatitis.

Inhalation**:** Overexposure by inhalation may injure the following organ(s): Liver. Kidneys. Nervous system. Reproductive System.

Oral: No known applicable information.

Other Health Effects

This product contains a chemical(s) that has the following effect(s):
Reproductive Toxicity
Developmental Toxicity

Carcinogenicity

See Section 11 for specific details.

Signs and Symptoms of Overexposure

No known applicable information.

Medical Conditions Aggravated by Exposure

No known applicable information.

The above listed potential effects of overexposure are based on actual data, results of studies performed upon similar compositions, component data and/or expert review of the product. Please refer to Section 11 for the detailed toxicology information.

3. COMPOSITION/INFORMATION ON INGREDIENTS

CAS Number	Wt %	Component Name
1330-20-7	15.0 - 35.0	Xylene
100-41-4	7.0 - 13.0	Ethylbenzene
67-63-0	1.0 - 5.0	Isopropyl alcohol
556-67-2	1.0 - 5.0	Octamethylcyclotetrasiloxane
3555-47-3	1.0 - 5.0	Tetra(trimethylsiloxy) silane
541-02-6	1.0 - 5.0	Decamethylcyclopentasiloxane
108-88-3	<1.0	Toluene

The above components are hazardous as defined in 29 CFR 1910.1200.

4. FIRST AID MEASURES

Eye: Immediately flush the contaminated eye(s) with lukewarm, gently flowing water for 15 - 20 minutes while holding the eyelid(s) open. If contact lens is present, DO NOT delay irrigation or attempt to remove the lens. Take care not to rinse contaminated water into the unaffected eye or onto the face. Immediately obtain medical attention.

Skin: As quickly as possible remove contaminated clothing, shoes and leather goods (e.g. watchbands, belts). Quickly and gently blot or brush away excess chemical. Immediately flush with lukewarm gently flowing water for 15 minutes. Completely decontaminate clothing, shoes and leather goods before reuse or discard. Immediately obtain medical attention.

Inhalation:	Remove from the source of contamination or move to fresh air. Obtain medical attention.
Oral:	Never give anything by mouth if victim is rapidly losing consciousness or convulsing. DO NOT INDUCE VOMITING. Have victim drink 2 to 8 oz. (60 to 240 mL) of water. If vomiting occurs naturally, have victim lean forward to reduce the risk of aspiration. Have victim rinse mouth with water again. Obtain medical attention.
Notes to Physician:	Treat according to person's condition and specifics of exposure.

5. FIRE FIGHTING MEASURES

Flash Point:	55.9 °F / 13.3 °C (Pensky-Martens Closed Cup)
Autoignition Temperature:	Not determined.
Flammability Limits in Air:	Not determined.
Extinguishing Media:	On large fires use dry chemical, foam or water spray. On small fires use carbon dioxide (CO2), dry chemical or water spray. Water can be used to cool fire exposed containers.
Fire Fighting Measures:	Self-contained breathing apparatus and protective clothing should be worn in fighting large fires involving chemicals. Determine the need to evacuate or isolate the area according to your local emergency plan. Use water spray to keep fire exposed containers cool.
Unusual Fire Hazards:	Vapors are heavier than air and may travel to a source of ignition and flash back. Static electricity will accumulate and may ignite vapors. Prevent a possible fire hazard by bonding and grounding or inert gas purge.

6. ACCIDENTAL RELEASE MEASURES

Containment/Clean up:	Remove possible ignition sources. Determine whether to evacuate or isolate the area according to your local emergency plan. Observe all personal protection equipment recommendations described in Sections 5 and 8. For large spills, provide diking or other appropriate containment to keep material from spreading. If diked material can be pumped, store recovered material in appropriate container. Clean up remaining materials from spill with suitable absorbant. Clean area as appropriate since spilled materials, even in small quantities, may present a slip hazard. Final cleaning may require use of steam, solvents or detergents. Dispose of saturated absorbant or cleaning materials appropriately, since spontaneous heating may occur. Local, state and federal laws and regulations may apply to releases and disposal of this material, as well as those materials and items employed in the cleanup of releases. You will need to determine which federal, state and local laws and regulations are applicable. Sections 13 and 15 of this MSDS provide information regarding certain federal and state requirements.

Note: See Section 8 for Personal Protective Equipment for Spills. Call (989) 496-5900, if additional information is required.

7. HANDLING AND STORAGE

Use with adequate ventilation. Avoid eye exposure. Do not get on skin. Avoid breathing vapor, mist, dust, or fumes. Keep container closed.

Static electricity will accumulate and may ignite vapors. Prevent a possible fire hazard by bonding and grounding or inert gas purge. Keep container closed and away from heat, sparks, and flame.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Component Exposure Limits

CAS Number	Component Name	Exposure Limits
1330-20-7	Xylene	Observe xylene limits. OSHA PEL (final rule) and ACGIH TLV: TWA 100 ppm, STEL 150 ppm.
100-41-4	Ethylbenzene	OSHA PEL (final rule): TWA 100 ppm, 435 mg/m3. ACGIH TLV: TWA 20 ppm, STEL 125 ppm.
67-63-0	Isopropyl alcohol	OSHA PEL (final rule): TWA 400 ppm, 980 mg/m3. ACGIH TLV: TWA 200 ppm, STEL 400 ppm.
556-67-2	Octamethylcyclotetrasiloxane	Dow Corning guide: TWA 10 ppm.
541-02-6	Decamethylcyclopentasiloxane	Dow Corning guide: TWA 10 ppm.

Engineering Controls

Local Ventilation: Recommended.
General Ventilation: Recommended.

Personal Protective Equipment for Routine Handling

Eyes: Use chemical worker's goggles.

Skin: Wash at mealtime and end of shift. Skin contact must be avoided by using impervious protective clothing (gloves, aprons, boots, etc.). Use chemical protective gloves as a minimum and wash skin promptly upon any skin contact.

Suitable Gloves: Avoid skin contact by implementing good industrial hygiene practices and procedures. Select and use gloves and/or protective clothing to further minimize the potential for skin contact. Consult with your glove and/or personnel protective equipment manufacturer for selection of appropriate compatible materials.

Inhalation:	Use respiratory protection unless adequate local exhaust ventilation is provided or exposure assessment demonstrates that exposures are within recommended exposure guidelines. IH personnel can assist in judging the adequacy of existing engineering controls.
Suitable Respirator:	General and local exhaust ventilation is recommended to maintain vapor exposures below recommended limits. Where concentrations are above recommended limits or are unknown, appropriate respiratory protection should be worn. Follow OSHA respirator regulations (29 CFR 1910.134) and use NIOSH/MSHA approved respirators.

Personal Protective Equipment for Spills

Eyes:	Use full face respirator.
Skin:	Wash at mealtime and end of shift. Skin contact must be avoided by using impervious protective clothing (gloves, aprons, boots, etc.). Use chemical protective gloves as a minimum and wash skin promptly upon any skin contact.
Inhalation/Suitable Respirator:	Respiratory protection recommended. Follow OSHA Respirator Regulations (29 CFR 1910.134) and use NIOSH/MHSA approved respirators. Protection provided by air purifying respirators against exposure to any hazardous chemical is limited. Use a positive pressure air supplied respirator if there is any potential for uncontrolled release, exposure levels are unknown, or any other circumstance where air purifying respirators may not provide adequate protection.
Precautionary Measures:	Avoid eye exposure. Do not get on skin. Avoid breathing vapor, mist, dust, or fumes. Keep container closed. Use reasonable care.

Note: These precautions are for room temperature handling. Use at elevated temperature or aerosol/spray applications may require added precautions. For further information regarding aerosol inhalation toxicity, please refer to the guidance document regarding the use of silicone-based materials in aerosol applications that has been developed by the silicone industry (www.SEHSC.com) or contact the Dow Corning customer service group.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical Form:	Viscous Liquid
Color:	Colorless
Odor:	Aromatic odor
Specific Gravity @ 25°C:	0.98
Viscosity:	40000 cSt
Freezing/Melting Point:	Not determined.
Boiling Point:	141.00 °C
Vapor Pressure @ 25°C:	Not determined.
Vapor Density:	Not determined.
Solubility in Water:	Not determined.
pH:	Not determined.
Volatile Content:	Not determined.
Flash Point:	55.9 °F / 13.3 °C (Pensky-Martens Closed Cup)
Autoignition Temperature:	Not determined.

Flammability Limits in Air: Not determined.

Note: The above information is not intended for use in preparing product specifications. Contact Dow Corning before writing specifications.

10. STABILITY AND REACTIVITY

Chemical Stability: Stable.

Hazardous Polymerization: Hazardous polymerization will not occur.

Conditions to Avoid: None.

Materials to Avoid: Oxidizing material can cause a reaction.

Hazardous Decomposition Products

Thermal breakdown of this product during fire or very high heat conditions may evolve the following decomposition products: Carbon oxides and traces of incompletely burned carbon compounds. Silicon dioxide. Formaldehyde.

11. TOXICOLOGICAL INFORMATION

Component Toxicology Information

Octamethylcyclotetrasiloxane administered to rats by inhalation at concentrations of 500 and 700 ppm resulted in statistically significant decreases in the number of pups born and the live litter size in both the first and second generations. Prolonged estrous cycles, and decreased mating and fertility indices were observed following 700 ppm exposure in the second generation only. There were also increases in the incidence of deliveries of offspring extending over an unusually long time period (dystocia).

Results from a 2 year repeated vapour inhalation exposure study to rats of octamethylcyclotetrasiloxane (D4) indicate effects (benign uterine adenomas) in the uterus of female animals. This finding occurred at the highest exposure dose (700 ppm) only.

Studies to date have not demonstrated if these effects occur through pathways that are relevant to humans.

Based on the available information on its potential to cause harm to human health, Health Canada, in a 2008 screening assessment, has concluded that octamethylcyclotetrasiloxane is not entering the environment in a quantity or concentration or under conditions that constitute or may constitute a danger in Canada to human life or health (http://www.ec.gc.ca/substances/ese/eng/challenge/batch2/batch2_556-67-2.cfm).

Repeated exposure in rats to D4 resulted in what appears to be protoporphyrin accumulation in the liver. Without knowledge of the specific mechanism leading to the protoporphyrin accumulation the relevance of this finding to humans is unknown.

Results from a 2 year repeated vapour inhalation exposure study to rats of decamethylcyclopentasiloxane (D5) indicate

effects (uterine endometrial tumors) in female animals. This finding occurred at the highest exposure dose (160 ppm) only. Studies to date have not demonstrated if this effect occurs through a pathway that is relevant to humans.

Based on the available information on its potential to cause harm to human health, Health Canada, in a 2008 screening assessment, has concluded that D5 is not entering the environment in a quantity or concentration or under conditions that constitute or may constitute a danger in Canada to human life or health (http://www.ec.gc.ca/substances/ese/eng/challenge/batch2/batch2_541-02-6.cfm).

Special Hazard Information on Components

Carcinogens

CAS Number	Wt %	Component Name	
100-41-4	7.0 - 13.0	Ethylbenzene	IARC Group 2B - Possibly Carcinogenic to Humans.

Developmental Toxicity

CAS Number	Wt %	Component Name
1330-20-7	15.0 - 35.0	Xylene

Reproductive Toxicity

CAS Number	Wt %	Component Name	
556-67-2	1.0 - 5.0	Octamethylcyclotetrasiloxane	Evidence of reproductive effects in laboratory animals.

12. ECOLOGICAL INFORMATION

Environmental Fate and Distribution

Complete information is not yet available.

Environmental Effects

Complete information is not yet available.

Fate and Effects in Waste Water Treatment Plants

Complete information is not yet available.

Ecotoxicity Classification Criteria

Hazard Parameters (LC50 or EC50)	High	Medium	Low
Acute Aquatic Toxicity (mg/L)	<=1	>1 and <=100	>100

Acute Terrestrial Toxicity	<=100	>100 and <= 2000	>2000

This table is adapted from "Environmental Toxicology and Risk Assessment", ASTM STP 1179, p.34, 1993.

This table can be used to classify the ecotoxicity of this product when ecotoxicity data is listed above. Please read the other information presented in the section concerning the overall ecological safety of this material.

13. DISPOSAL CONSIDERATIONS

RCRA Hazard Class (40 CFR 261)

When a decision is made to discard this material, as received, is it classified as a hazardous waste? Yes

Characteristic Waste:
Ignitable: D001
TCLP: D018

State or local laws may impose additional regulatory requirements regarding disposal. Call (989) 496-6315, if additional information is required.

14. TRANSPORT INFORMATION

DOT Road Shipment Information (49 CFR 172.101)

Proper Shipping Name: Adhesives

Hazard Class: 3

UN/NA Number: UN 1133

Packing Group: II

Hazard Label(s): Flammable Liquid

Ocean Shipment (IMDG)

Proper Shipping Name: ADHESIVES

Hazard Class: 3

UN/NA Number: UN 1133

Packing Group: II

Hazard Label(s): flammable liquid

Air Shipment (IATA)

Proper Shipping Name:	Adhesives
Hazard Class:	3
UN/NA Number:	UN 1133
Packing Group:	II
Hazard Label(s):	Flammable Liquid

Call Dow Corning Transportation, (989) 496-8577, if additional information is required.

15. REGULATORY INFORMATION

Contents of this MSDS comply with the OSHA Hazard Communication Standard 29 CFR 1910.1200.

TSCA Status: All chemical substances in this material are included on or exempted from listing on the TSCA Inventory of Chemical Substances.

EPA SARA Title III Chemical Listings

Section 302 Extremely Hazardous Substances (40 CFR 355):
None.

Section 304 CERCLA Hazardous Substances (40 CFR 302):

CAS Number	Wt %	Component Name
1330-20-7	29.0	Xylene
100-41-4	8.4	Ethylbenzene
108-88-3	0.14	Toluene
71-43-2	<0.1	Benzene

Section 311/312 Hazard Class (40 CFR 370):

Acute:	Yes
Chronic:	Yes
Fire:	Yes
Pressure:	No
Reactive:	No

Section 313 Toxic Chemicals (40 CFR 372):

CAS Number	Wt %	Component Name
1330-20-7	29.0	Xylene

100-41-4	8.4	Ethylbenzene
67-63-0	2.2	Isopropyl alcohol

Note: Chemicals are listed under the 313 Toxic Chemicals section only if they meet or exceed a reporting threshold.

Supplemental State Compliance Information

California

Warning: This product contains the following chemical(s) listed by the State of California under the Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65) as being known to cause cancer, birth defects or other reproductive harm.

CAS Number	Wt %	Component Name	
100-41-4	7.0000 - 13.0000	Ethylbenzene	Carcinogenic.
108-88-3	<1.0000	Toluene	Developmental toxin.
71-43-2	<0.0100	Benzene	Carcinogenic. Developmental toxin. Male reproductive toxin.

Massachusetts

CAS Number	Wt %	Component Name
1330-20-7	15.0 - 35.0	Xylene
100-41-4	7.0 - 13.0	Ethylbenzene
67-63-0	1.0 - 5.0	Isopropyl alcohol
71-43-2	<0.1	Benzene

New Jersey

CAS Number	Wt %	Component Name
68988-56-7	30.0 - 50.0	Trimethylated silica
1330-20-7	15.0 - 35.0	Xylene
70131-67-8	15.0 - 35.0	Dimethyl siloxane, hydroxy-terminated

100-41-4	7.0 - 13.0	Ethylbenzene
67-63-0	1.0 - 5.0	Isopropyl alcohol

Pennsylvania

CAS Number	Wt %	Component Name
68988-56-7	30.0 - 50.0	Trimethylated silica
1330-20-7	15.0 - 35.0	Xylene
70131-67-8	15.0 - 35.0	Dimethyl siloxane, hydroxy-terminated
100-41-4	7.0 - 13.0	Ethylbenzene
67-63-0	1.0 - 5.0	Isopropyl alcohol
71-43-2	<0.1	Benzene

16. OTHER INFORMATION

Prepared by: Dow Corning Corporation

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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