DOW CORNING

DOW CORNING CORPORATION
Material Safety Data Sheet

Version: 1.5
Revision Date: 2010/01/13

DOW CORNING(R) XR-1541-002 E-BEAM RESIST IN MIBK

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.: 04082209 Revision Date: 2010/01/13

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

NFPA Profile: Health 2 Flammability 3 Instability/Reactivity 1

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 mild irritation.

Inhalation: Irritates respiratory passages very slightly. Overexposure by inhalation may cause drowsiness, dizziness, confusion or loss of coordination.

Oral: Aspiration of liquid while vomiting may injure lungs seriously.

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.

Oral: Repeated ingestion or swallowing large amounts may injure internally.

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
108-10-1	> 60.0	Methyl isobutyl ketone
137125-44-1	1.0 - 5.0	Hydrogen silsesquioxane
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: Remove contaminated clothing, shoes and leather goods (e.g. watchbands, belts). Quickly and gently blot or brush away excess chemical. Flush with lukewarm gently flowing water for 15 minutes. If irritation persists, repeat flushing. If irritation persists, obtain medical advice.

Inhalation: Remove from the source of contamination or move to fresh air. If irritation persists, obtain medical advice.

Oral: Never give anything by mouth if victim is rapidly losing consciousness or convulsing. Have victim rinse mouth thoroughly with water 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. Immediately obtain medical attention.

Notes to Physician: Treat according to person's condition and specifics of exposure.

5. FIRE FIGHTING MEASURES

Flash Point: 62.6 °F / 17 °C (Closed Cup)

Autoignition Temperature: Not determined.

Flammability Limits in Air: Not determined.

Extinguishing Media:	On large fires use AFFF alcohol compatible foam or water spray (fog). On small fires use AFFF alcohol compatible foam, CO2 or water spray (fog). Water can be used to cool fire exposed containers. Do not allow extinguishing medium to contact container contents. Most fire extinguishing media will cause hydrogen evolution. When the fire is put out, hydrogen may accumulate in poorly ventilated or confined areas and result in flash fire or explosion if ignited. Foam blankets may also trap hydrogen or flammable vapors, with the possibility of subsurface explosion.
Unsuitable Extinguishing Media:	Dry chemical.
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. Materials in contact with water, moisture, acids or bases have the potential to generate hydrogen gas. Recovered material should be stored in a vented 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. Avoid skin contact. Avoid breathing vapor, mist, dust, or fumes. Keep container closed. Do not take internally.

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. Product evolves minute quantities of

flammable hydrogen gas which can accumulate. Adequately ventilate to maintain vapors well below flammability limits and exposure guidelines. Do not repackage. Do not store in glass containers which may shatter due to pressure build up. Clogged container vents may increase pressure build up. Keep container closed and store away from water or moisture.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Component Exposure Limits

CAS Number	Component Name	Exposure Limits
108-10-1	Methyl isobutyl ketone	OSHA PEL (final rule): TWA 100 ppm and ACGIH TLV: TWA 50 ppm, STEL 75 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. Contaminated clothing and shoes should be removed as soon as practical and thoroughly cleaned before reuse. Chemical protective gloves are recommended.

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. Contaminated clothing and shoes should be removed as soon as practical and thoroughly cleaned before reuse. Chemical protective gloves are recommended.

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. Avoid skin contact. Avoid breathing vapor, mist, dust, or fumes. Keep container closed. Do not take internally. 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:	Liquid
Color:	Colorless
Odor:	Solvent odor.
Specific Gravity @ 25°C:	0.8
Viscosity:	0.6 cSt
Freezing/Melting Point:	Not determined.
Boiling Point:	116 °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:	62.6 °F / 17 °C (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. Water, alcohols, acidic or basic materials, and many metals or metallic compounds, when in contact with product, liberate flammable hydrogen gas, which can form explosive mixtures in air.

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. Formaldehyde. Silicon dioxide. Hydrogen.

11. TOXICOLOGICAL INFORMATION

Component Toxicology Information

A material containing 94% hydrogen silsesquioxane was evaluated for acute inhalation toxicity in two groups of five male and five female albino rats. Whole body exposures were for four hours to dust aerosol atmospheres at a concentration of either 8.2 or 1.3 mg/L. All but one male died either during the exposure to 8.2 mg/L or by the first day post-exposure. Exposure related macroscopic abnormalities were noted in the trachea, lungs and liver. None of the animals exposed to 1.3 mg/L died or exhibited exposure related abnormalities at necropsy. Therefore, the 4-hour LC50 for the test material is greater than 1.3 mg/L but less than 8.2 mg/L.

Special Hazard Information on Components

No known applicable information.

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.

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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
Reactive:	D003

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:	Methyl isobutyl ketone Solution
Hazard Class:	3
UN/NA Number:	UN 1245
Packing Group:	II
Hazard Label(s):	Flammable Liquid

Ocean Shipment (IMDG)

Proper Shipping Name:	METHYL ISOBUTYL KETONE Solution
Hazard Class:	3
UN/NA Number:	UN 1245
Packing Group:	II
Hazard Label(s):	flammable liquid

Air Shipment (IATA)

Proper Shipping Name:	Methyl isobutyl ketone Solution
Hazard Class:	3
UN/NA Number:	UN 1245
Packing Group:	II

Hazard Label(s):	Flammable Liquid
Remarks:	VENTED PACKAGES ARE FORBIDDEN FOR AIR TRANSPORT.

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
108-10-1	98.0	Methyl isobutyl ketone
108-88-3	0.12	Toluene

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

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

Section 313 Toxic Chemicals (40 CFR 372):

CAS Number	Wt %	Component Name
108-10-1	98.0	Methyl isobutyl ketone

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	
108-88-3	<1.0000	Toluene	Developmental toxin.

Massachusetts

CAS Number	Wt %	Component Name
108-10-1	> 60.0	Methyl isobutyl ketone

New Jersey

CAS Number	Wt %	Component Name
108-10-1	> 60.0	Methyl isobutyl ketone
137125-44-1	1.0 - 5.0	Hydrogen silsesquioxane

Pennsylvania

CAS Number	Wt %	Component Name
108-10-1	> 60.0	Methyl isobutyl ketone

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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