

GC Electronics
1801 Morgan Street
Rockford, IL 61102
Phone: (815) 968-9661
Fax: (815) 968-9731
www.gcelectronics.com

Product Name: Print Kote Conformal Coating
MSDS Number: 138
Revision Date: 12/8/03
Supersedes Date: 1/20/03

MATERIAL SAFETY DATA SHEET

Complies with OSHA Hazard Communication Standard 29 CFR 1910.1200

Product Type: Silicone resin solution
Product Name: **Print Kote Conformal Coating**
Part Number(s): **22-203**

Emergency Contact: Chemtrec
Phone (24 hours): (800)424-9300

Section 1 - Identification of Product

NFPA RATINGS

Health	2	Least	0
Flammability	3	Slight	1
Reactivity	1	Moderate	2
Personal Protection	B	High	3
		Extreme	4
Product Name: Silicone Resin Solution		Gloves, Safety Glasses	B

Note: NFPA = National Fire Protection Association

Section 2 - Hazardous Ingredients

Component	Cas Number	% Weight	Exposure Limits
Octamethyltrisiloxane (Silicone Resins)	107-51-7	>60	TWA 200 PPM
Dimethyl. Methylphenylmethoxy Siloxane	68952-93-2	15-40	See methyl alcohol comments
Toluene	108-88-3	3-7	OSHA PEL (final rule): 8 Hour TWA 200 PPM, Ceiling 300 ppm 10 minutes maximum duration 500 ppm./ ACGIH TLV- Skin: TWA 50 PPM.
Methyltrimethoxysilane	1185-55-3	3-7	TWA 50 PPM. Also see methyl alcohol comments.

Comments: Methyl alcohol forms on contact with water or humid air. Provide adequate ventilation to control exposures within guidelines of OSHA PEL: TWA 200 PPM and ACGIH TLV-Skin: TWA 200 PPM, STEL 250 PPM

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

Warning: This product contains Toluene, known to the State of California to cause birth defects or other reproductive harm.

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Section 3 - Physical Data

Physical form:	Liquid
Color:	Translucent
Odor:	Some odor
Specific Gravity @ 25C:	0.9
Viscosity:	350.00 cSt
Freezing/Melting Point:	Not Determined
Boiling Point:	> 35C/95F
Vapor Pressure @ 25C:	Not Determined
Vapor Density:	Not Determined
Solubility in Water:	Not Determined
pH:	Not Determined
VOC:	52% by Weight

Note: The above information is not intended for use in preparing product specifications.

Section 4 - Fire & Explosion Hazard Data

Flammability Limits in Air:	Not Determined
Flash Point (closed cup):	61 Degree F/16.1 Degree C (closed cup)
Autoignition Temperature:	Not Determined
Extinguishing Media:	On large fires use medium expansion (>30:1) AFFF alcohol compatible foam or water spray. On small fires use medium expansion (>30:1) AFFF alcohol compatible foam or CO2 or water spray. Water can be used to cool fire exposed containers.
Unusual Fire Hazards:	Fire burns more vigorously than would be expected. Static electricity will accumulate and may ignite vapors. Prevent a possible fire hazard by bonding and grounding or inert gas purge. Vapors are heavier than air and may travel to a source of ignition and flash back.
Fire Fighting Procedures:	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.
Hazardous Decomposition products:	Thermal breakdown of this product during fire or very high heat conditions may evolve the following hazardous decomposition products: Carbon oxides and traces of incompletely burned carbon compounds. Silicon dioxide. Metal Oxides. Formaldehyde.

Section 5 - Health Hazard Data

Effects of Overexposure-
Acute Effects:

Eye:	Direct contact may cause moderate irritation.
Skin:	May cause mild irritation.
Inhalation:	Vapor may irritate nose and throat. Vapor overexposure may cause drowsiness.
Oral:	Low ingestion hazard in normal use. Swallowing large amounts may cause drowsiness.

Emergency First Aid Measures

Eye:	Immediately flush with water for 15 minutes. Get medical attention.
Skin:	Remove from skin and wash thoroughly with soap and water or waterless cleanser. Get medical attention if irritation or other ill effects develop or persist.
Inhalation:	Remove to fresh air. Get medical attention if ill effects persist.
Oral:	Get medical attention.
Comments:	Treat according to person's condition and specifics of exposure.

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 detailed toxicology information.

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Section 6 - Reactivity Data

Chemical Stability:	Stable
Hazardous Polymerization:	<input checked="" type="checkbox"/> Will not occur.
Conditions to Avoid:	None.
Materials to Avoid:	Oxidizing materials can cause a reaction. Water, moisture, or humid air can cause hazardous vapors to form as described in Section 2 and 8.

Section 7 - Spill or Leak Procedures

Containment/Clean-up:	Remove possible ignition source. Determine whether to evacuate or isolate the area according to your local emergency plan. Observe all personal protection equipment recommendations described in Sections 4 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 absorbent. Clean area as appropriate since some silicone materials, even in small quantities, may present a slip hazard. Final cleaning may require use of steam, solvents or detergents. Dispose of saturated absorbent 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 9 and 10 of this MSDS provide information regarding certain federal and state requirements.
Personal Protective Equipment for Spills	
Eye:	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 circumstances where air purifying respirators may not provide adequate protection.
Precautionary Measures:	Avoid eye contact. Avoid skin contact. Avoid breathing vapor, mist dust or fumes. Keep container closed. Do not take internally. Use reasonable care.

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Comments:

Product evolves flammable methyl alcohol when exposed to water or humid air. Provide ventilation during use to control exposure within Section 2 and 8 guidelines or use air-supplied or self-contained breathing apparatus. Traces of Benzene (carcinogen) may form if heated in air above 300° F (149° C). Provide ventilation to control vapor exposure within inhalation guidelines when handling at elevated temperatures. Review the OSHA benzene regulation for detailed information on safe handling requirements.

Note: These precautions are for room temperature handling. Use at elevated temperature, or aerosol/spray applications, may require added precautions.

Section 8 - Special Protection Information

Component Exposure Limits:

Component Name	CAS#	Exposure Limits
Octamethyltrisiloxane	107-51-7	TWA 200ppm.
Dimethyl methylphenylmethoxy siloxane	68952-93-2	See methyl alcohol comments.
Methyltrimethoxysilane	1185-55-3	TWA 50ppm. Also see methyl alcohol comments.
Toluene	108-88-3	OSHA PEL (final rule): 8 hour TWA 200 ppm. Ceiling 300 ppm, 10 minutes maximum duration 500 ppm. ACGIH TLV-skin: TWA 50 ppm.

Methyl alcohol forms on contact with water or humid air. Provide adequate ventilation to control exposures within guidelines of OSHA PEL: TWA 200 ppm and ACGIH TLV-skin: TWA 200 ppm, STEL 250 ppm

Engineering Controls

Local exhaust: Recommended
General Ventilation: Recommended

Personal Protective Equipment for Routine Handling

Eye: Use proper protection – safety glasses as a minimum.
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: Silver Shield ® 4H ®
Inhalation: Use respiratory protection unless adequate local exhaust ventilation is provided or air sampling data show exposures are within recommended exposure guidelines. Industrial Hygiene 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 as determined by air sampling or are unknown, appropriate respiratory protection should be worn. Follow OSHA Respirator Regulations (29 CFR 1910.134) and use NIOSH/MSHA approved respirators.

Section 9 – Special Precautions

Handling and Storage: Use with adequate ventilation. Product evolves flammable methyl alcohol when exposed to water or humid air. Provide ventilation during use to control exposure within Section 2 and 8 guidelines or use air-supplied or self-contained breathing apparatus. Traces of benzene (carcinogen) may form if heated in air above 300°F (149°C). Provide ventilation to control vapor exposure within inhalation guidelines when handling at elevated temperatures. Review the OSHA benzene regulation for detailed information on safe handling requirements. Avoid breathing vapor, mist, dust and fumes. Keep container closed. Avoid eye contact. Do not take internally. Avoid skin contact.

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 store away from water, moisture, heat sparks or flame.

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

Federal Hazardous Waste Code: NA

Characteristic Waste: Ignitable: D001

State or local laws may impose additional regulatory requirements regarding disposal.

NA= Not Applicable

Section 10 - Regulatory Information

This product has been classified in accordance with the hazard criteria of the CPR and the MSDS contains all the information required by the CPR.

WHMIS Classification: Class B, Division 2
Class D, Division 2, Subdivision A
Class D, Division 2, Subdivision B

Material Usage: Semi conductor coating

DSL Status: All chemical substances in this material are included in or exempted from the DSL.

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

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

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EPA SARA Title III chemical Listings:

	Cas#	Wt.	Component Name
Section 302 Extremely Hazardous Substances:	None		
Section 304 CERCLA Hazardous Substances:	108-88-3	3.0	Toluene

Section 312 Hazard Class:

Acute: Y
 Chronic: Y
 Fire: Y
 Pressure: N
 Reactive: Y
 Y= Yes N= No

Section 313 Toxic Chemicals:

Cas#	Wt. %	Component Name
108-88-3	3	Toluene

Supplemental State Compliance Information

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

	Cas #	WT%	Component
California	108-88-3	3-7	Toluene Developmental Toxin
Massachusetts	108-88-3	3.0-7.0	Toluene
New Jersey	107-51-7	>60	Octamethyltrisiloxane
	68952-93-2	15-40	Dimethyl methylphenylmethoxy siloxane
	1185-55-3	3-7	Methyltrimethoxysilane
	108-88-3	3-7	Toluene
Pennsylvania	CAS#	Wt%	Component
	107-51-7	>60	Octamethyltrisiloxane
	68952-93-2	15-40	Dimethyl methylphenylmethoxy siloxane
	1185-55-3	3-7	Methyltrimethoxysilan
	108-88-3	3-7	Toluene

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Ocean Shipment (IMDG)

Proper Shipping Name: Flammable Liquid N.O.S.
Hazardous Technical Name: Octamethyltrisiloxane/Toluene
Hazard Class: 3
UN/NA #: UN1993
Packing Group: II
Hazard Label: Flammable Liquid
Marine Pollutant: N/A

Air Shipment (IATA)

Proper Shipping Name: Flammable Liquid, N.O.S.
Hazard Technical Name: Octamethyltrisiloxane/Toluene
Hazard Class: 3
UN#: UN1993
Packing Group: II
Hazard Label(s): Flammable Liquid

Section 11- Other Information

Toxicological Information

Component Toxicology Information Toxicology studies with laboratory animals and occupational evaluations with humans have found limited evidence of birth defects, low birth weights and delayed growth in offspring resulting from repeated exposure to toluene during pregnancy.

Special Hazard Information On Components Evidence of reproductive effects in humans

CAS#	Wt%	Component Name
108-88-3	3-7	Toluene

Ecological Information

Environmental Fate and Distribution Complete information is not yet available.
Environmental Effects Complete information is not yet available.
Fated Effects in Waste Water Treatment Plant Complete information is not yet available.

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Ecotoxicity Classification Criteria

Hazard Paramaters (LC50 or EC 50)	High	Medium	Low
Acute Aquatic Toxicity (mg/L)	<=1	>1 and <=100	>100
Acute Terrestrial Toxicity (mg/kg)	<=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.

Transport Information

Dot Road Shipment Information (49CFR 172.101)

Proper Shipping Name: FLAMMABLE LIQUID, N.O.S.
Hazard Technical Name: OCTAMETHYLTRISILOXANE/TOLUENE
Hazard Class: 3
UN/NA Number: UN1993
Packing Group: II
Hazard Label: Flammable liquid

0000 and NA= Not Applicable

Disclaimer

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