

ENTHONE

MATERIAL SAFETY DATA SHEET

Health	3
Flammability	1
Reactivity	0
Personal Protection	

In Case of Emergency
CHEMTREC Number
(800) 424-9300

Section 1. Chemical Product and Company Identification

Product Name ENTHONE® 50-301R CAT-L-INK
Product Code Number(s) 135665
135666
135667
Material Uses Specialty chemicals for the electronics and surface finishing industries.
Manufacturer ENTHONE
350 Frontage Road
West Haven, CT 06516
(203) 799-4917
(203) 799-8179 (fax)
www.cooksonelectronics.com
Supersedes Date 10/20/1997 **Revision No.** 1
Print Date 1/7/2003. **Validation Date** 1/7/2003.
Prepared by Anton Mayer - Regulatory Specialist

Section 2. Composition, Information on Ingredients

Name	CAS #	% by Weight
PROPRIETARY EPOXY RESINS AND POLYMERS		25-45
DIETHYLENE GLYCOL ETHYL ETHER ACETATE	112-15-2	7-13
DIPROPYLENE GLYCOL METHYL ETHER	34590-94-8	5-10
PROPYLENE GLYCOL MONOMETHYL ETHER ACETATE	108-65-6	5-10
CARBON BLACK	1333-86-4	0.1-0.5
BARIUM SULFATE	7727-43-7	10-20
CADMIUM SULFIDE	1306-23-6	0.5-1
TITANIUM DIOXIDE	13463-67-7	1-5

All ingredients comply with applicable rules or orders under TSCA

Section 3. Hazards Identification

Physical State and Appearance Liquid. **Odor** Mild. **Color** Deep green

Emergency Overview WARNING!
Hazardous in case of ingestion.

Routes of Entry Absorbed through skin. Eye contact. Inhalation. Ingestion.

Potential Acute Health Effects

Eyes Hazardous in case of eye contact (irritant, corrosive).

Skin Slightly hazardous in case of skin contact (irritant, sensitizer). Skin inflammation is characterized by itching, scaling, reddening, or, occasionally, blistering.

Inhalation Hazardous in case of inhalation (lung irritant).

Ingestion Hazardous in case of ingestion. May cause nausea and vomiting.

Medical Conditions Caused or Aggravated by Overexposure Repeated exposure to a highly toxic material may produce general deterioration of health by an accumulation in one or many human organs. Prolonged skin exposure may lead to sensitization and allergic reaction. Repeated or prolonged exposure may cause irritation and dermatitis.

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Section 4. First Aid Measures

Eye Contact	Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention.
Skin Contact	Wash with soap and water. Cover the irritated skin with an emollient. Get medical attention if irritation develops.
Inhalation	If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention if symptoms appear.
Ingestion	Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. If large quantities of this material are swallowed, call a physician immediately. Loosen tight clothing such as a collar, tie, belt or waistband.

Section 5. Fire Fighting Measures

Flammability of the Product	Combustible.
Flash Points	Closed cup: 68.33°C (155°F). (Pensky-Martens)
Products of Combustion	These products are carbon oxides (CO, CO ₂), sulfur oxides (SO ₂ , SO ₃ ...). nitrogen oxides (NO, NO ₂ ...)Some metallic oxides.
Fire Fighting Media and Instructions	SMALL FIRE: Use DRY chemical powder. LARGE FIRE: Use water spray, fog or foam. Do not use water jet.
Protective Equipment (Fire)	Wear NIOSH approved self-contained breathing apparatus or equivalent and full protective gear.
Special Remarks on Fire and Explosion Hazards	No unusual fire or explosion hazards.

Section 6. Accidental Release Measures

Small Spill and Leak	Absorb with an inert material and put the spilled material in an appropriate waste disposal.
Large Spill and Leak	Keep away from heat. Keep away from sources of ignition. Stop leak if without risk.

Section 7. Handling and Storage

Handling	Keep away from heat, sparks and flame. Keep container closed. Use only with adequate ventilation. To avoid fire, minimize ignition sources.
Storage	Keep container in a cool, well-ventilated area. Keep container tightly closed and sealed until ready for use. Avoid all possible sources of ignition (spark or flame).

Section 8. Exposure Controls, Personal Protection

Engineering Controls	Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors below their respective occupational exposure limits. Ensure that eyewash stations and safety showers are proximal to the work-station location.
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Personal Protection

Eyes Splash goggles.

Body Synthetic apron.

Respiratory Be sure to use a MSHA/NIOSH approved respirator or equivalent. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product, and the safe working limits of the selected respirator.

Hands Butyl rubber gloves. Nitrile gloves.

Feet Boots.

Protective Equipment (Pictograms)



Personal Protection in Case of a Large Spill	Splash goggles. Full suit. Boots. Gloves. A self-contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.
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Product Name

Exposure Limits

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BARIUM SULFATE

ACGIH TLV (United States, 2001). Notes: The value is for total dust containing no asbestos and < 1% crystalline silica.

TWA: 10 mg/m³ 8 hour(s).

NIOSH REL (United States, 2001).

TWA: 5 mg/m³ 10 hour(s). Form: Respirable fraction

TWA: 10 mg/m³ 10 hour(s). Form: Total

OSHA PEL (United States, 1971).

TWA: 5 MGM3 8 hour(s). Form: Respirable fraction

TWA: 15 MGM3 8 hour(s). Form: Total dust

OSHA PEL 1989 (United States, 1989).

TWA: 0.5 mg/m³ 8 hour(s).

TWA: 5 mg/m³ 8 hour(s). Form: Respirable fraction

TWA: 10 mg/m³ 8 hour(s). Form: Total dust

CADMIUM SULFIDE

ACGIH TLV (United States, 2001).

TWA: 0.002 mg/m³ 8 hour(s).

OSHA PEL 1989 (United States, 1989). Notes: As Cadmium

CEIL: 0.6 mg/m³ Form: Dust

CEIL: 0.3 mg/m³ Form: Fume

TWA: 0.2 mg/m³ 8 hour(s). Form: Dust

TWA: 0.1 mg/m³ 8 hour(s). Form: Fume

TWA: 5 • g/m³ 8 hour(s).

OSHA PEL 22 (United States, 2002). Notes: As Cadmium

CEIL: 0.6 mg/m³ Form: Dust

CEIL: 0.3 mg/m³ Form: Fume

TWA: 0.2 mg/m³ 8 hour(s). Form: Dust

TWA: 0.1 mg/m³ 8 hour(s). Form: Fume

DIPROPYLENE GLYCOL METHYL ETHER

ACGIH TLV (United States, 2001). Skin

STEL: 909 mg/m³ 15 minute(s).

STEL: 150 ppm 15 minute(s).

TWA: 606 mg/m³ 8 hour(s).

TWA: 100 ppm 8 hour(s).

NIOSH REL (United States, 2001). Skin

STEL: 900 mg/m³ 15 minute(s).

STEL: 150 ppm 15 minute(s).

TWA: 600 mg/m³ 10 hour(s).

TWA: 100 ppm 10 hour(s).

OSHA PEL 1989 (United States, 1989). Skin

STEL: 900 mg/m³ 15 minute(s).

STEL: 150 ppm 15 minute(s).

TWA: 600 mg/m³ 8 hour(s).

TWA: 100 ppm 8 hour(s).

PROPYLENE GLYCOL MONOMETHYL ETHER ACETATE

AIHA WEEL (United States, 2001).

TWA: 100 ppm 8 hour(s).

TITANIUM DIOXIDE

ACGIH TLV (United States, 2001).

TWA: 10 mg/m³ 8 hour(s).

OSHA PEL (United States, 1971).

TWA: 15 MGM3 8 hour(s). Form: Total dust

OSHA PEL 1989 (United States, 1989).

TWA: 10 mg/m³ 8 hour(s). Form: Total dust

ACGIH TLV (United States, 2001).

TWA: 3.5 mg/m³ 8 hour(s).

NIOSH REL (United States, 2001).

TWA: 3.5 mg/m³ 10 hour(s).

TWA: 0.1 MGPHM3 10 hour(s).

OSHA PEL 1989 (United States, 1989).

TWA: 3.5 mg/m³ 8 hour(s).

CARBON BLACK

Consult local authorities for acceptable exposure limits.

Section 9. Physical and Chemical Properties

Physical State and Appearance	Liquid.	Odor Mild.	Color Deep green
pH	Not applicable.		
Boiling Point	160 °C		
Melting/Freezing Point	Not available.		
Specific Gravity	1.25 (Water = 1)		
VOC	308.4 (g/l).		
Solubility	Soluble in Butyl acetate.		

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Section 10. Stability and Reactivity

Stability and Reactivity	Stable under recommended storage and handling conditions (see section 7).
Conditions of Instability	Keep away from heat, sparks and flame.
Incompatible Substances	Reactive with oxidizing agents.
Hazardous Decomposition Products	In a fire, toxic gases, including oxides of carbon, sulfur, and nitrogen. Metallic oxides.
Hazardous Polymerization	Will not occur.

Section 11. Toxicological Information

Toxicity Data

<u>Ingredient Name</u>	<u>Test</u>	<u>Result</u>	<u>Route</u>	<u>Species</u>
CADMIUM SULFIDE	LD50	7080 mg/kg	Oral	Rat
	LD50	1166 mg/kg	Oral	Mouse
DIPROPYLENE GLYCOL METHYL ETHER	LD50	7500 mg/kg	Oral	Dog
PROPYLENE GLYCOL MONOMETHYL ETHER ACETATE	LD50	8532 mg/kg	Oral	Rat
CARBON BLACK	LD50	>15400 mg/kg	Oral	Rat

Chronic Effects on Humans **CARCINOGENIC EFFECTS:** Classified 1 (Proven for human.) by IARC, 1 (Known To Be Human Carcinogens.) by NTP, + (Proven.) by OSHA [CADMIUM SULFIDE]. Classified 3 (Possible for human.) by European Union [CADMIUM SULFIDE]. Classified A2 (Suspected for human.) by ACGIH [CADMIUM SULFIDE]. Classified A4 (Not classifiable for human or animal.) by ACGIH [ALUMINUM OXIDE]. Classified + (Proven.) by NIOSH [CARBON BLACK]. Classified 2B (Possible for human.) by IARC [CARBON BLACK]. Classified A4 (Not classifiable for human or animal.) by ACGIH [CARBON BLACK].

MUTAGENIC EFFECTS: None identified.

TERATOGENIC EFFECTS: None identified.

Special Remarks on Toxicity Carbon black is a component of this product, however, exposure to carbon black is highly unlikely since the carbon black is part of a viscous, polymeric liquid mixture. Inhalation of carbon black has been determined to cause cancer in experimental animals, but studies of workers exposed to carbon black have had conflicting results as to the carcinogenicity of carbon black to humans.

Special Remarks on Chronic Effects on Humans Repeated, or long term exposure to cadmium, even at relatively low concentrations, may result in kidney damage and an increased risk of lung cancer.

Special Remarks on Other Toxic Effects on Humans Absorption of toxic amounts through the skin is unlikely under ordinary conditions of industrial use. Emetic effects possible due to the cadmium content. Cadmium is very poorly absorbed from the gastrointestinal tract. Systemic toxicity is very unlikely under ordinary conditions of industrial use. The glycol ether in this product does not cause adverse effects on the male or female reproductive system.

Any component listed in this section that is not listed in Section 2 is present in the product in concentrations below legal disclosure limits (1% for hazardous components and 0.1% for carcinogens)

Section 12. Ecological Information

Enthone has not conducted specific studies on the ecotoxicity or environmental fate of this product.

Section 13. Disposal Considerations

Waste Information Waste must be disposed of in accordance with federal, state and local environmental control regulations.

Section 14. Transport Information

DOT Classification -

UN number Not regulated.

Proper shipping name -

Special Remarks on Transportation Information Ink Materials, NMFC Item 101720, Class 55

This Transport Information applies only to the Product Code Number(s) listed in Section 1. Other container sizes may require different Transport Information. If assistance is required, contact Regulatory Affairs at 203-799-4936.

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Section 15. Regulatory Information

U.S. Federal Regulations

SARA 313 toxic chemical notification and release reporting: CADMIUM SULFIDE; DIETHYLENE GLYCOL ETHYL ETHER ACETATE

All ingredients comply with applicable rules or orders under TSCA

State Regulations

California prop. 65: This product contains the following ingredients for which the State of California has found to cause cancer, birth defects or other reproductive harm, which would require a warning under the statute: QUARTZ
California prop. 65: This product contains the following ingredients for which the State of California has found to cause reproductive harm (male) which would require a warning under the statute: CADMIUM SULFIDE
California prop. 65: This product contains the following ingredients for which the State of California has found to cause birth defects which would require a warning under the statute: CADMIUM SULFIDE
California prop. 65: This product contains the following ingredients for which the State of California has found to cause cancer which would require a warning under the statute: CADMIUM SULFIDE; QUARTZ

Any component listed in this section that is not listed in Section 2 is present in the product in concentrations below legal disclosure limits (1% for hazardous components and 0.1% for carcinogens).

Section 16. Other Information

Definition of Terms

ACGIH	American Conference of Governmental Industrial Hygienists
Ceiling	Maximum exposure limit defined by OSHA
CAS	Chemical Abstract Service
IARC	International Agency for Research on Cancer
NIOSH	National Institute for Occupational Safety and Health
NTP	National Toxicology Program
OSHA	Occupational Safety and Health Administration
PEL	Permissible Exposure Limit
REL	Recommended Exposure Limit
RTK	Right to Know
SARA	Superfund Amendments and Reauthorization Act
STEL	Short Term Exposure Limit
TLV	ACGIH Threshold Limit Value
TLV-C	ACGIH Threshold Limit Value, Ceiling
TRADE SECRET	Claimed as allowed under 29CFR§1910.1200
TSCA	Toxic Substances Control Act

Disclaimer

This Material Safety Data Sheet may be used to comply with OSHA's Hazard Communication Standard, 29CFR§1910.1200. Enthone furnishes the data contained herein in good faith at customer's request without liability or legal responsibility for same whatsoever, and no warranty or guarantee, express or implied, is made with respect to such data; nor does Enthone grant permission, recommendation, or inducement to infringe any patent whether owned by Enthone or others. The data is offered solely for your information and consideration. Since conditions of use are beyond Enthone's control, user assumes all responsibility and risk.

