



Revision Number: 002.2

Issue date: 01/14/2014

1. PRODUCT AND COMPANY IDENTIFICATION

Product name:	LOCTITE ECCOBOND FP4531 known as HYSOL FP4531 10CC FLPCHIP - 40CD	IDH number:	446513
Product use:	Encapsulant	Item number:	FP4531-V20
Company address:	Henkel Electronic Materials LLC 14000 Jamboree Road Irvine, CA 92606	Region:	Canada
		Contact information:	Telephone: 1.888.9.HENKEL (1.888.943.6535) MEDICAL EMERGENCY Phone: Poison Control Center 1-877-671-4608 (toll free) or 1-303-592-1711 TRANSPORT EMERGENCY Phone: CHEMTREC 1-800-424-9300 (toll free) or 1-703-527-3887 Internet: www.henkelna.com

This product contains an epoxy resin CAS # 27610-48-6 that is covered by a USEPA Significant New Use Requirement (SNUR) (40CFR 721.5192) that limits its use to binding fibers in aerospace composites or for encapsulating electronic devices. It is a violation of the SNUR to use this product for any other application.

2. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

Physical state:	Liquid	WHMIS hazard class:	D.2.A, D.2.B
Color:	Black		
Odor:	Slight		

DANGER: CAUSES EYE AND SKIN IRRITATION.
MAY CAUSE CANCER AND REPRODUCTIVE EFFECTS.
MAY CAUSE ALLERGIC SKIN AND RESPIRATORY REACTION.
MAY CAUSE RESPIRATORY TRACT IRRITATION.

Relevant routes of exposure: Skin, Inhalation, Eyes, Ingestion

Potential Health Effects

Inhalation:	May cause respiratory tract irritation. May cause allergic respiratory reaction. These symptoms, which can include chest tightness, wheezing, cough, shortness of breath or asthma attack, could be immediate or delayed (up to several hours after exposure).
Skin contact:	May cause severe skin irritation. May cause allergic skin reaction. Repeated or prolonged contact may cause burns.
Eye contact:	May cause severe eye irritation. Repeated or prolonged contact may cause burns. Blurred vision. May cause corneal injury.
Ingestion:	May cause gastrointestinal tract irritation if swallowed.

Existing conditions aggravated by exposure: Dermatitis. Other pre-existing skin conditions. Asthma. Other respiratory disorders (bronchitis, emphysema, bronchial hyperreactivity). Eye disorders.

See Section 11 for additional toxicological information.

3. COMPOSITION / INFORMATION ON INGREDIENTS

Hazardous components	CAS NUMBER	%
Silica, vitreous	60676-86-0	30 - 60
Hexahydromethylphthalic anhydride	25550-51-0	10 - 30
Oxirane, 2,2'-[1,6-naphthalenediylbis(oxy)methylen	27610-48-6	5 - 10
Bisphenol-F Epichlorhydrin resin	9003-36-5	5 - 10
Silicon dioxide	7631-86-9	5 - 10
Methacrylic acid methyl ester, polymer with butyl acrylate and ethyl acrylate	25767-43-5	1 - 5
2,2'-[Methylenebis(phenyleneoxymethylene)]bisoxirane	39817-09-9	1 - 5

4. FIRST AID MEASURES

Inhalation:	Move to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.
Skin contact:	Immediately flush skin with plenty of water (using soap, if available). Remove contaminated clothing and footwear. Wash clothing before reuse. Get medical attention.
Eye contact:	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Get medical attention.
Ingestion:	Do not induce vomiting. Never give anything by mouth to an unconscious person. Get medical attention.

5. FIRE FIGHTING MEASURES

Flash point:	> 121.1 °C (> 249.98 °F)
Autoignition temperature:	Not available.
Flammable/Explosive limits - lower:	Not available.
Flammable/Explosive limits - upper:	Not available.
Extinguishing media:	Water spray (fog), foam, dry chemical or carbon dioxide.
Special firefighting procedures:	Wear self-contained breathing apparatus and full protective clothing, such as turn-out gear. In case of fire, keep containers cool with water spray.
Unusual fire or explosion hazards:	Closed containers may rupture (due to build up of pressure) when exposed to extreme heat.
Hazardous combustion products:	Oxides of carbon. Oxides of nitrogen. Toxic and irritating vapors. Hydrocarbons.
Sensitivity to Mechanical Impact:	Not available.
Sensitivity to static discharge:	Not available.

6. ACCIDENTAL RELEASE MEASURES

Use personal protection recommended in Section 8, isolate the hazard area and deny entry to unnecessary and unprotected personnel.

Environmental precautions: Do not allow product to enter sewer or waterways.

Clean-up methods:

Ensure adequate ventilation. Remove all sources of ignition. Isolate area. Keep unnecessary personnel away. Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Store in a closed container until ready for disposal. Refer to Section 8 "Exposure Controls / Personal Protection" prior to clean up.

7. HANDLING AND STORAGE

Handling:

Do not taste or swallow. Use only with adequate ventilation. Prevent contact with eyes, skin and clothing. Do not breathe vapor and mist. Wash thoroughly after handling. Refer to Section 8.

Storage:

Keep in a cool, well ventilated area away from heat, sparks and open flame. Keep container tightly closed until ready for use.

For information on product shelf life, please review labels on container or check the Technical Data Sheet.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Employers should complete an assessment of all workplaces to determine the need for, and selection of, proper exposure controls and protective equipment for each task performed.

Hazardous components	ACGIH TLV	OSHA PEL	AIHA WEEL	OTHER
Silica, vitreous	None	20 MPPCF TWA 0.8 mg/m ³ TWA	None	None
Hexahydromethylphthalic anhydride	None	None	None	None
Oxirane, 2,2'-[1,6-naphthalenediylbis(oxymethylen	None	None	None	0.1 ppm TWA
Bisphenol-F Epichlorhydrin resin	None	None	None	None
Silicon dioxide	6 mg/m ³ TWA	20 MPPCF TWA 0.8 mg/m ³ TWA	None	3 mg/m ³ TWA Respirable fraction.
Methacrylic acid methyl ester, polymer with butyl acrylate and ethyl acrylate	None	None	None	None
2,2'-[Methylenebis(phenyleneoxymethylene)]bisoxirane	None	None	None	None

Engineering controls:

Local exhaust ventilation is recommended when general ventilation is not sufficient to control airborne contamination below occupational exposure limits.

Respiratory protection:

Use a NIOSH approved air-purifying respirator if the potential to exceed established exposure limits exists.

Eye/face protection:

Safety goggles or safety glasses with side shields. Full face protection should be used if the potential for splashing or spraying of product exists. Safety showers and eye wash stations should be available.

Skin protection:

Use chemical resistant, impermeable clothing including gloves and either an apron or body suit to prevent skin contact. 4H gloves.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state:	Liquid
Color:	Black
Odor:	Slight
Odor threshold:	Not available.
pH:	Not applicable
Vapor pressure:	Not available.
Boiling point/range:	Not available.
Melting point/ range:	Not available.
Specific gravity:	1.7
Vapor density:	Not available.
Flash point:	> 121.1 °C (> 249.98 °F)
Flammable/Explosive limits - lower:	Not available.
Flammable/Explosive limits - upper:	Not available.

Autoignition temperature: Not available.
Evaporation rate: Not available.
Solubility in water: Not miscible or difficult to mix
Partition coefficient (n-octanol/water): Not available.
VOC content: Not available.

10. STABILITY AND REACTIVITY

Stability: Stable at normal conditions.
Hazardous reactions: None under normal processing.
Hazardous decomposition products: Oxides of carbon. Oxides of nitrogen. Oxides of silicon. Hydrocarbons.
Incompatible materials: Oxidizing agents. Acids and bases. Amines. Halogens. Peroxides. Mercaptans. Alcohols. Water.
Conditions to avoid: Avoid static discharge. Heat, flames, sparks and other sources of ignition. Store away from incompatible materials. Exposure to moisture.

11. TOXICOLOGICAL INFORMATION

Product toxicity data: The U.S. Environmental Protection Agency (EPA) has identified certain substances that are structurally similar to the epoxy resin component with CAS # 27610-48-6. These analogues are phenylglycidylether and diglycidylether of resorcinol. Based on the results of animal bioassays on these analogues, the EPA finds that the epoxy resin component (CAS # 27610-48-6) may be carcinogenic and may cause reproductive effects. The epoxy resin is expected to be absorbed via all routes.

Toxicologically synergistic products: Not available.

Refer to the following for Irritancy of Product, Sensitization to Product, Carcinogenicity, Reproductive Toxicity, Teratogenicity, and Mutagenicity.

Hazardous Component(s)	NTP Carcinogen	IARC Carcinogen	OSHA Carcinogen (Specifically Regulated)
Silica, vitreous	No	No	No
Hexahydromethylphthalic anhydride	No	No	No
Oxirane, 2,2'-[1,6-naphthalenediylbis(oxymethylen	No	No	No
Bisphenol-F Epichlorhydrin resin	No	No	No
Silicon dioxide	No	No	No
Methacrylic acid methyl ester, polymer with butyl acrylate and ethyl acrylate	No	No	No
2,2'-[Methylenebis(phenyleneoxymethylene)]b isoxirane	No	No	No

Hazardous components	LD50s and LC50s	Health Effects/Target Organs
Silica, vitreous	None	Nuisance dust
Hexahydromethylphthalic anhydride	None	Allergen, Respiratory, Irritant
Oxirane, 2,2'-[1,6-naphthalenediylbis(oxymethylen	None	Irritant, Allergen, Blood, Reproductive
Bisphenol-F Epichlorhydrin resin	None	Allergen, Irritant
Silicon dioxide	Oral LD50 (RAT) > 22,500 mg/kg	Nuisance dust
Methacrylic acid methyl ester, polymer with butyl acrylate and ethyl acrylate	None	No Target Organs
2,2'-[Methylenebis(phenyleneoxymethylene)]b isoxirane	None	No Target Organs

12. ECOLOGICAL INFORMATION

Ecological information: Not available.

13. DISPOSAL CONSIDERATIONS

Information provided is for unused product only.

Recommended method of disposal: Any process stream associated with the use of this product must be disposed of by incineration or in a landfill. This provision, however, does not supersede any applicable federal, state or local laws and regulations.

14. TRANSPORT INFORMATION

Canada Transportation of Dangerous Goods - Ground

Proper shipping name: Not regulated (Up to 6 oz. max per inner/primary package when shipped as originally packaged only)
Hazard class or division: None
Identification number: None
Packing group: None

International Air Transportation (ICAO/IATA)

Proper shipping name: Not regulated (Up to 6 oz. max per inner/primary package when shipped as originally packaged only)
Hazard class or division: None
Identification number: None
Packing group: None

Water Transportation (IMO/IMDG)

Proper shipping name: Not regulated (Up to 6 oz. max per inner/primary package when shipped as originally packaged only)
Hazard class or division: None
Identification number: None
Packing group: None

15. REGULATORY INFORMATION

Canada Regulatory Information

CEPA DSL/NDL Status: One or more components are not listed on, and are not exempt from listing on either the Domestic Substances List or the Non-Domestic Substances List.

United States Regulatory Information

TSCA 8 (b) Inventory Status: All components are listed or are exempt from listing on the Toxic Substances Control Act Inventory.

TSCA 5 (a) (2) SNUR: This product contains an ingredient for which a Significant New Use Rule (SNUR) has been promulgated by the USEPA under the Toxic Substances Control Act (TSCA) section 5(a)(2). This SNUR (40CFR 721.5192) limits its use to binding fibers in aerospace composites or for encapsulating electronic devices. It is in violation of the SNUR to use this product for any other application. Manufacture, import, distribution, use and disposition of this product is restricted to the requirements listed in 40 CFR.

16. OTHER INFORMATION

This material safety data sheet contains changes from the previous version in sections: 14

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulation (CPR), and the MSDS contains all the information required by the CPR.

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