

*** MATERIAL SAFETY DATA SHEET ***

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME..... Ablebond 8390
 SYNONYM NAME(S)..... Modified Epoxy Resin - Silver Filled

Ablestik Laboratories
 Subsidiary of National Starch and Chemical Company
 20021 Susana Road
 Rancho Dominguez, CA 90221
 USA

Emergency telephone numbers:
 For U.S., Canada and the U.S. Virgin Islands: 1 - 800 - 424 - 9300
 (24hours, CHEMTREC)

For calls originating elsewhere: 703-527-3887 (Collect calls are accepted)

2. COMPOSITION/INFORMATION ON INGREDIENTS

<u>COMPONENT</u>	<u>CAS NUMBER</u>	<u>CONCENTRATION RANGES (%)</u>
Phenolic resin	Proprietary	1-5
Silver	7440-22-4	60-100
Curing and hardening agent	Proprietary	1-5
Epoxy resin	Proprietary	10-30

3. HAZARDS IDENTIFICATION

Emergency Overview

Silver paste.
 Danger! Corrosive. May cause eye and skin burns.
 May cause skin sensitization. Risk of sensitization depends on duration and level of exposure.

EYE..... Irritating, and will injure eye tissue if not removed promptly.

SKIN CONTACT..... May be absorbed through the skin. May cause skin sensitization, a partial or whole-body dermatitic rash experienced after exposure, however minimal.

INHALATION..... Vapors and/or aerosols which may be formed at elevated temperatures may be irritating to eyes and respiratory tract. Avoid breathing vapors or mists. If cured material is sanded resulting powder would be considered hazardous.

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INGESTION..... May cause burning of mouth, throat and stomach with abdominal and chest pain, nausea, vomiting, diarrhea, thirst and weakness. Aspiration may occur during swallowing or vomiting resulting in lung damage.

4. FIRST-AID MEASURES

EYE..... Immediately flush eyes with large amounts of water for at least 15 minutes, lifting upper and lower lids. Get prompt medical attention.

SKIN CONTACT..... Flush exposed areas thoroughly with soap and water until all chemical is removed. Remove contaminated clothing and launder before reuse. If irritation persists, get medical attention.

INHALATION..... Remove to fresh air. Get medical attention if irritation persists.

INGESTION..... Treat symptomatically and supportively. Get medical attention. DO NOT attempt to give anything by mouth to an unconscious person.

5. FIREFIGHTING MEASURES

AUTOIGNITION..... Not available

FLASH POINT..... Not available

EXTINGUISHING MEDIA..... CO2; Foam; Dry chemical

SPECIAL FIREFIGHTING PROCEDURES.... Fire fighters should be equipped with self-contained breathing apparatus to protect against potentially toxic and irritating fumes

FIRE & EXPLOSION HAZARDS..... Emits toxic fumes under fire conditions.

UPPER EXPLOSION LIMIT (%)..... Not Applicable

LOWER EXPLOSION LIMIT (%)..... Not Applicable

6. ACCIDENTAL RELEASE MEASURES

SPILL AND LEAK PROCEDURES..... Scrape up and place in suitably labeled container for disposal.

For safety and environmental precautions, please review entire Material Safety Data Sheet for necessary information.

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7. HANDLING AND STORAGE

STORAGE TEMPERATURE..... -40⁰ C
 SPECIAL SENSITIVITY..... Keep away from heat.

HANDLING/STORAGE..... While this product is supplied in wet form, processes involving sanding or grinding after curing could release airborne toxic dust. Product can ONLY be used for thin bond line applications or rapid exothermic curing reaction may result.

VENTILATION REQUIREMENTS..... Vent curing oven to outdoors.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

<u>COMPONENT</u>	<u>EXPOSURE LIMITS</u>
Silver	OSHA: PEL-TWA; 0.01 mg/m ³ ACGIH: TLV-TWA; 0.1 mg/m
VENTILATION REQUIREMENTS.....	Vent curing oven to outdoors.
EYE PROTECTION REQUIREMENTS.....	Wear safety glasses with side shields.
GLOVE REQUIREMENTS.....	Employee must wear appropriate protective gloves to prevent contact with this substance.
CLOTHING REQUIREMENTS.....	Employee must wear appropriate protective clothing and equipment to prevent any possibility of skin contact with this substance.
CHANGE/REMOVAL OF CLOTHING.....	Remove contaminated clothing and launder before reuse.
WASH REQUIREMENTS.....	Wash before eating, drinking, or using toilet facilities.
RESPIRATOR REQUIREMENTS.....	If operating conditions create a high vapor/mist concentration or if the product is sanded or ground, use of a NIOSH approved TC-23C organic vapor/ hepa filter combination cartridge is recommended.

9. PHYSICAL AND CHEMICAL PROPERTIES

PURE SUBSTANCE OR MIXTURE..... Mixture
 PHYSICAL FORM..... Paste
 APPEARANCE/ODOR..... Silver; Slight odor
 ODOR THRESHOLD..... Not available
 PH AS IS..... Not available

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BOILING POINT.....	Not available
MELTING/FREEZING POINT.....	Not available
SOLUBILITY IN WATER.....	Insoluble
PARTITION COEFFICIENT	
(n-octanol/water).....	Not available
SPECIFIC GRAVITY (WATER=1).....	3.6
EVAPORATION RATE.....	Not available
VAPOR PRESSURE (mmHg).....	Not available
VAPOR DENSITY (air = 1).....	Not available
VOLATILES.....	Not available
VOLATILE ORGANIC COMPOUNDS.....	Not available
AUTOIGNITION.....	Not available
FLASH POINT.....	Not available
OXIDIZING PROPERTIES.....	Not available

10. STABILITY AND REACTIVITY

STABILITY.....	Stable
MATERIALS TO AVOID.....	Strong oxidizing agents, acids, and alkaline materials.
HAZARDOUS DECOMPOSITION PRODUCTS...	Carbon dioxide, carbon monoxide, oxides of nitrogen and unknown organics. Thermal decomposition products are hazardous and/or toxic.

11. TOXICOLOGICAL INFORMATION

CHRONIC (LONG TERM) EFFECTS OF EXPOSURE

ROUTE OF ENTRY.....	Skin absorption
EFFECTS OF CHRONIC EXPOSURE.....	Repeated exposure may cause skin sensitization. This product has not been tested for mutagenicity. Epoxy resins similar to those used in this formulation have been tested and have produced equivocal mutagenic activity. The relevance of those findings to toxicological impact on humans is unknown. The toxicological properties of this product have not been fully evaluated. Use of good industrial hygiene practices is required. Avoid direct contact with skin or eyes. Do not ingest or inhale.
TARGET ORGANS.....	Skin
CARCINOGEN.....	No
SENSITIZER.....	Yes

TOXICOLOGY INFORMATION

RAW MATERIAL NAME.....	Mixed aryl allyl glycidyl compounds.
NOTES ON ORAL TOXICITY.....	May cause vomiting.

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NOTES ON DERMAL TOXICITY..... Frequent or prolonged contact may irritate the skin. Causes skin sensitization, a partial or whole-body dermatitic rash experienced after exposure, however minimal.

NOTES ON INHALATION TOXICITY..... Vapors and/or aerosols may cause irritation. Avoid breathing vapors or mists.

NOTES ON EYE IRRITATION..... Slightly irritating but does not injure eye tissue.

OTHER NOTES ON TOXICITY..... This chemical was found to be positive in one or more mutagenetic assays. Sensitizer.

12. ECOLOGICAL INFORMATION

Not available.

13. DISPOSAL CONSIDERATIONS

WASTE DISPOSAL METHODS..... Waste disposal should be in accordance with existing federal, state and local environmental regulations.

EMPTY CONTAINER WARNINGS..... Empty containers may contain product residue; follow MSDS and label warnings even after they have been emptied.

14. TRANSPORTATION INFORMATION

DOT INFORMATION

DOT SHIPPING NAME..... Not regulated

UN/ID Number..... NA

Class NA

Packaging Group NA

Subsidiary risk NA

Label NA

15. REGULATORY INFORMATION

The information given and the recommendations made herein apply to our product(s) alone and are not combined with other product(s). Such are based on our research and on data from other reliable sources and are believed to be accurate. No guaranty of accuracy is made. It is the purchaser's responsibility before using any product to verify this data under their own operating conditions and to determine whether the product is suitable for their purposes.

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16. OTHER INFORMATION

MSDS DATE..... July 07, 2000
CHANGES SINCE PREVIOUS ISSUE..... April 20,'04: section 2,3 & 11

FOR REGULATORY INFORMATION, CONTACT:

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