

*** MATERIAL SAFETY DATA SHEET ***

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME..... ABLEBOND[®] 84-1LMISNB Adhesive
 SYNONYM NAME(S)..... Modified Epoxy Resin

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 RANGE (%)</u>
Silver	7440-22-4	60-100
Epoxy resin	Proprietary	10-30
Curing agent & hardener	Proprietary	1-5

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..... Irritating to the skin. May be absorbed through the skin. May cause skin sensitization, a partial or whole-body dermatitic rash experienced after exposure, however minimal.
 INHALATION..... Irritating and/or toxic vapors may be released at elevated temperatures. Vapors may be irritating to respiratory system and nasal passages.
 INGESTION..... Corrosive to mouth, esophagus, and stomach. Irritant and may cause nausea and vomiting.

*** MATERIAL SAFETY DATA SHEET ***

4. FIRST-AID MEASURES

EYE.....	Immediately flush eyes with large amounts of water for at least 15 minutes, lifting upper and lower lids. If irritation persists, get medical attention.
SKIN CONTACT.....	Flush exposed areas thoroughly with 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.....	Get medical attention.

5. FIREFIGHTING MEASURES

AUTOIGNITION.....	Not available
FLASH POINT.....	Not available
EXTINGUISHING MEDIA.....	Foam; CO2; 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 Available
LOWER EXPLOSION LIMIT (%).....	Not Available

6. ACCIDENTAL RELEASE MEASURES

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

7. HANDLING AND STORAGE

STORAGE TEMPERATURE.....	- 40 ⁰ C
SPECIAL SENSITIVITY.....	Heat
HANDLING/STORAGE.....	Empty containers may contain product residue; follow MSDS and label warnings even after they have been

*** MATERIAL SAFETY DATA SHEET ***

emptied.
 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 ³
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.....	If product is spilled on clothes, remove immediately and launder before reuse.
WASH REQUIREMENTS.....	If contact has occurred, wash with soap and water before eating.
RESPIRATOR REQUIREMENTS.....	NIOSH approved respirator if required. Self-contained breathing apparatus in emergency and non-routine situations.

9. PHYSICAL AND CHEMICAL PROPERTIES

PURE SUBSTANCE OR MIXTURE.....	Mixture
PHYSICAL FORM.....	Paste
APPEARANCE/ODOR.....	Silver
ODOR THRESHOLD.....	Not available
PH AS IS.....	Not available
BOILING POINT.....	Not available
MELTING/FREEZING POINT.....	Not available
SOLUBILITY IN WATER.....	Insoluble
PARTITION COEFFICIENT (n-octanol/water).....	Not available
SPECIFIC GRAVITY (WATER=1).....	3.5
BULK DENSITY.....	Not available
EVAPORATION RATE.....	Not available
VAPOR PRESSURE (mmHg).....	Not available
VAPOR DENSITY (air = 1).....	Not available
VISCOSITY.....	Not available
VOLATILES.....	Not available
VOLATILE ORGANIC COMPOUNDS.....	Not available
AUTOIGNITION.....	Not available
FLASH POINT.....	Not available
OXIDIZING PROPERTIES.....	Not available

*** MATERIAL SAFETY DATA SHEET ***

10. STABILITY AND REACTIVITY

STABILITY..... Stable
MATERIALS TO AVOID..... 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, Inhalation
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

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

*** MATERIAL SAFETY DATA SHEET ***

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

TSCA..... All components are in compliance with TSCA requirements.

STATE LAWS..... WARNING: This product contains the following chemical known to the State of California to cause cancer: None to report

WARNING: This product contains the following chemical known to the State of California to cause birth defects or other reproductive harm: Toluene is present in trace amounts.

SARA/TITLE III, THIS PRODUCT CONTAINS (OR IS) A TOXIC CHEMICAL FOR ROUTINE ANNUAL CHEMICAL RELEASE REPORTING UNDER SECTION 313:

Silver

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.

16. OTHER INFORMATION

MSDS DATE.....	June 19,'06
CHANGES SINCE PREVIOUS ISSUE.....	-

*** MATERIAL SAFETY DATA SHEET ***

FOR REGULATORY INFORMATION, CONTACT:

Health & Safety Coordinator
Ablestik Laboratories
National Starch & Chemical Company
20021 Susana Road
Rancho Dominguez, CA 90221
USA

Telephone: 310-764-4600
FAX: 310-763-2725