

\*\*\* MATERIAL SAFETY DATA SHEET \*\*\*

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME..... ABLEBOND<sup>®</sup> 2025D Adhesive  
 SYNONYM NAME(S)..... Modified Diester 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>
Silicon dioxide	Proprietary	30-60
Diester resin	Proprietary	15-40
Epoxy resin	Proprietary	5-10
Polymeric material	Proprietary	5-10
Functionalized ester	Proprietary	10-30

3. HAZARDS IDENTIFICATION

Emergency Overview

Red paste.  
 Warning! May cause eye and skin irritation.  
 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.

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INGESTION..... No specific data are available.

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4. FIRST-AID MEASURES

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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.

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5. FIREFIGHTING MEASURES

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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

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6. ACCIDENTAL RELEASE MEASURES

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

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7. HANDLING AND STORAGE

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STORAGE TEMPERATURE..... - 40<sup>0</sup> C

SPECIAL SENSITIVITY..... Heat

HANDLING/STORAGE..... Empty containers may contain product residue; follow MSDS and label warnings even after they have been

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

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

<u>COMPONENT</u>	<u>EXPOSURE LIMITS</u>
Silica fused	OSHA: PEL-TWA; respirable . . 0.1 mg/m <sup>3</sup> ACGIH: TLV-TWA; respirable . . 0.1 mg/m <sup>3</sup>
Nuisance dust	OSHA: PEL-TWA; total dust . . 10 mg/m <sup>3</sup> Respirable . . 5 mg/m <sup>3</sup> ACGIH: TLV-TWA; total dust . . 10 mg/m <sup>3</sup> Respirable . . 3 mg/m <sup>3</sup>
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.....	Red
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).....	1.4
BULK DENSITY.....	Not available
EVAPORATION RATE.....	Not available

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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

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10. STABILITY AND REACTIVITY

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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.

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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

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12. ECOLOGICAL INFORMATION

Not available.

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13. DISPOSAL CONSIDERATIONS

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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.

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14. TRANSPORTATION INFORMATION

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DOT INFORMATION

DOT SHIPPING NAME..... Not regulated  
UN/ID Number..... NA  
Class ..... NA  
Packaging Group ..... NA  
Subsidiary risk ..... NA  
Label ..... NA

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15. REGULATORY INFORMATION

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

STATE LAWS..... WARNING: This product contains the following chemicals known to the State of California to cause cancer:

Benzene, Phenyl glycidyl ether, Acrylonitrile and Epichlorohydrin are present in trace amounts.

WARNING: This product contains the following chemicals known to the State of California to cause birth defects or other reproductive harm:

Benzene, Toluene and Epichlorohydrin are present in trace amounts.

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

None

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

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under their own operating conditions and to determine whether the product is suitable for their purposes.

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16. OTHER INFORMATION

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MSDS DATE..... April 24, '07  
CHANGES SINCE PREVIOUS ISSUE..... -

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