



*** SAFETY DATA SHEET ***

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME..... Permabond E3762A

Permabond, Division of National Starch & Chemical
Woodside Road
Eastleigh
Hants.
SO50 4EX
United Kingdom
EMERGENCY TELEPHONE:
(44) 01703 629628 (Business hours)

2. COMPOSITION/INFORMATION ON INGREDIENTS

CHEMICAL FAMILY..... Formulated Epoxy Resin

COMPONENT	CAS NUMBER	CONCENTRATION RANGES	EEC SYMBOL/ RISK PHRASES
Epoxy resin	25068-38-6	20-<35%	Xi R36/38, R43

3. HAZARDS IDENTIFICATION

Irritant. Sensitiser.

EYE..... Irritating, but does not injure eye tissue.

SKIN CONTACT..... Frequent or prolonged contact may irritate the skin and cause sensitization.

INHALATION..... Based on its low volatility, product is not considered to be a respiratory hazard under normal conditions of use.

INGESTION..... Low order of toxicity. No hazard in normal industrial use.

*** SAFETY DATA SHEET ***

4. FIRST-AID MEASURES

EYE.....	Flush eyes with large amounts of water until irritation subsides. If irritation persists, get medical attention.
SKIN CONTACT.....	Flush with large amounts of water; use soap if available. If irritation persists, get medical attention.
INHALATION.....	Remove to fresh air.
INGESTION.....	If swallowed, DO NOT induce vomiting. Keep at rest. Get prompt medical attention.

5. FIREFIGHTING MEASURES

AUTOFLAMMABILITY.....	Not Applicable
FLASH POINT.....	>100 C
EXTINGUISHING MEDIA.....	CO2; Dry chemical; Foam; Water fog
SPECIAL FIREFIGHTING PROCEDURES....	Fire fighters should be equipped with self-contained breathing apparatus to protect against potentially toxic and irritating fumes
FIRE & EXPLOSION HAZARDS.....	Combustion may release noxious or toxic vapours. See below.
HAZARDOUS COMBUSTION PRODUCTS.....	Carbon monoxide, carbon dioxide, unknown hydrocarbons.
UPPER EXPLOSION LIMIT (%).....	Not Applicable
LOWER EXPLOSION LIMIT (%).....	Not Applicable

6. ACCIDENTAL RELEASE MEASURES

SPELL AND LEAK PROCEDURES.....	Take up with sand or other absorbent material and place in container for later disposal.
--------------------------------	--

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

*** SAFETY DATA SHEET ***

7. HANDLING AND STORAGE

STORAGE TEMPERATURE.....	Ambient.
HANDLING/STORAGE.....	Store in cool, dry place.
VENTILATION REQUIREMENTS.....	General
SENSITIVE TO STATIC ELECTRICITY?...	No
SENSITIVITY TO MECHANICAL IMPACT...	No

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

VENTILATION REQUIREMENTS.....	General
EYE PROTECTION REQUIREMENTS.....	Avoid contact with eyes. Wear chemical goggles if there is likelihood of contact with eyes.
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.
RESPIRATORY REQUIREMENTS.....	None required under normal handling conditions.

9. PHYSICAL AND CHEMICAL PROPERTIES

PURE SUBSTANCE OR PREPARATION.....	Preparation
PHYSICAL FORM.....	Paste
APPEARANCE/ODOUR.....	Grey; Slight odour
ODOUR THRESHOLD.....	Not available.
pH AS IS.....	Not Applicable
BOILING POINT.....	Not Applicable
MELTING/FREEZING POINT.....	Not Applicable
SOLUBILITY IN WATER.....	Insoluble
PARTITION COEFFICIENT (n-octanol/water).....	Not Applicable
RELATIVE DENSITY.....	3.200
EVAPORATION RATE.....	Not Applicable
VAPOUR PRESSURE (mmHg).....	Not Applicable
VAPOUR DENSITY (air=1).....	Not Applicable
VOLATILES.....	None.
VOLATILE ORGANIC COMPOUNDS.....	<5 g/l
AUTOFLAMMABILITY.....	Not Applicable
FLASH POINT.....	>100 C

*** SAFETY DATA SHEET ***

9. PHYSICAL AND CHEMICAL PROPERTIES (Continued)

OXIDIZING PROPERTIES..... Not Applicable

10. STABILITY AND REACTIVITY

STABILITY..... Stable
MATERIALS TO AVOID..... Bases; Amines; Acids; Oxidizers
HAZARDOUS DECOMPOSITION PRODUCTS... Carbon monoxide, carbon dioxide,
unknown hydrocarbons.

11. TOXICOLOGICAL INFORMATION

CHRONIC (LONG TERM) EFFECTS OF EXPOSURE

ROUTE OF ENTRY..... Skin contact; Eye contact
EFFECTS OF CHRONIC EXPOSURE..... Although this product has not been
tested for chronic effects it is
judged as having a low order of
toxicity based on component
information. Use of good industrial
hygiene practices is recommended.
TARGET ORGANS..... Skin
SPECIAL HEALTH EFFECTS..... Sensitiser.

12. ECOLOGICAL INFORMATION

POTENTIAL EFFECT ON ENVIRONMENT.... Unknown.
MOBILITY..... Unknown.
PERSISTENCE AND DEGRADABILITY..... Unknown
POTENTIAL TO BIOACCUMULATE..... Unknown
ECOTOXICITY..... Unknown.
AQUATIC TOXICITY..... None established.

13. DISPOSAL CONSIDERATIONS

WASTE DISPOSAL METHODS..... Waste disposal should be in
accordance with existing
Community, National and local

*** SAFETY DATA SHEET ***

13. DISPOSAL CONSIDERATIONS (Continued)

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

14. TRANSPORT INFORMATION (See also section 9)

ADR/RID..... Not Applicable
 CEFIC TREMCARD NUMBER..... Not Applicable
 HAZCHEM CODE..... Not Applicable
 KEMMLER CODE..... Not Applicable
 IMDG CLASSIFICATION..... Not Applicable
 IATA CLASSIFICATION..... Not Applicable
 MARINE POLLUTANT..... No
 U.N. NUMBER (S.I.N.)..... Not Applicable
 U.N. CLASS, PACKING GROUP..... Not Applicable

15. REGULATORY INFORMATION

EEC HAZARD CLASSIFICATION..... Irritant.
 RISK PHRASES..... R36/38 - Irritating to eyes and skin. R43 - May cause sensitization by skin contact.
 SAFETY PHRASES..... S24 - Avoid contact with skin. S26 - In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. S37 - Wear suitable gloves.
 EEC LABEL INFORMATION..... Contains epoxy constituents. See information supplied by the manufacturer.

Directives 88/379/EEC and 91/155/EEC have been considered when compiling this SDS; the information is provided for health and safety assessment by an industrial user. Reference should be made to any relevant local or national health, safety, and environmental legislation. This information does not constitute indication of suitability for specific uses.

*** SAFETY DATA SHEET ***

16. OTHER INFORMATION

MSDS DATE..... 25 November, 1996

FOR REGULATORY INFORMATION, CONTACT:

Simon Ward
Product Assurance Supervisor
Adhesives - Europe
National Starch & Chemical Ltd.
Galvin Road
Slough, Berkshire SL1 4DF
United Kingdom
Telephone: (+44) 01753 533494
FAX: (+44) 01753 577704

*** SAFETY DATA SHEET ***

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME..... Permabond E3762B

Permabond, Division of National Starch & Chemical
Woodside Road
Eastleigh
Hants.
S050 4EX
United Kingdom
EMERGENCY TELEPHONE:
(44) 01703 629628 (Business hours)

2. COMPOSITION/INFORMATION ON INGREDIENTS

No components which pose a risk.

3. HAZARDS IDENTIFICATION

No European Danger category (67/548/EEC and amendments).

EYE.....	Contact with eyes causes redness and discomfort which is transient.
SKIN CONTACT.....	Low order of toxicity.
INHALATION.....	No hazard in normal industrial use.
INGESTION.....	Low order of toxicity. No hazard in normal industrial use.

4. FIRST-AID MEASURES

EYE.....	Flush eyes with plenty of clean water.
SKIN CONTACT.....	Wash with soap and water.
INHALATION.....	Remove to fresh air.
INGESTION.....	Treat symptomatically and supportively. Get medical attention.

*** SAFETY DATA SHEET ***

5. FIREFIGHTING MEASURES

AUTOFLAMMABILITY.....	Not Applicable
FLASH POINT.....	>100 C
EXTINGUISHING MEDIA.....	CO2; Dry chemical; Foam; Water fog
SPECIAL FIREFIGHTING PROCEDURES....	Fire fighters should be equipped with self-contained breathing apparatus to protect against potentially toxic and irritating fumes
FIRE & EXPLOSION HAZARDS.....	Combustion may release noxious or toxic vapours. See below.
HAZARDOUS COMBUSTION PRODUCTS.....	Carbon monoxide, carbon dioxide, unknown hydrocarbons.
UPPER EXPLOSION LIMIT (%).....	Not Applicable
LOWER EXPLOSION LIMIT (%).....	Not Applicable

6. ACCIDENTAL RELEASE MEASURES

SPILL AND LEAK PROCEDURES..... Take up with sand or other absorbent material and place in container for later disposal.

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

7. HANDLING AND STORAGE

STORAGE TEMPERATURE.....	Ambient.
HANDLING/STORAGE.....	Store in cool, dry place.
VENTILATION REQUIREMENTS.....	General
SENSITIVE TO STATIC ELECTRICITY?...	No
SENSITIVITY TO MECHANICAL IMPACT...	No

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

VENTILATION REQUIREMENTS.....	General
EYE PROTECTION REQUIREMENTS.....	Safety glasses, goggles or face shield to protect against splashing.
GLOVE REQUIREMENTS.....	The use of chemically resistant gloves is recommended.
CLOTHING REQUIREMENTS.....	Overalls or lab coat should be worn.

*** SAFETY DATA SHEET ***

8. EXPOSURE CONTROLS/PERSONAL PROTECTION (Continued)

RESPIRATORY REQUIREMENTS..... None required under normal handling conditions.

9. PHYSICAL AND CHEMICAL PROPERTIES

PURE SUBSTANCE OR PREPARATION..... Preparation
 PHYSICAL FORM..... Paste
 APPEARANCE/ODOUR..... Grey; Amine odour
 ODOUR THRESHOLD..... Not available.
 pH AS IS..... Not Applicable
 BOILING POINT..... Not Applicable
 MELTING/FREEZING POINT..... Not Applicable
 SOLUBILITY IN WATER..... Insoluble
 PARTITION COEFFICIENT
 (n-octanol/water)..... Not Applicable
 RELATIVE DENSITY..... 2.000
 EVAPORATION RATE..... Not Applicable
 VAPOUR PRESSURE (mmHg)..... Not Applicable
 VAPOUR DENSITY (air=1)..... Not Applicable
 VOLATILES..... None.
 VOLATILE ORGANIC COMPOUNDS..... <5 g/l
 AUTOFLAMMABILITY..... Not Applicable
 FLASH POINT..... >100 C
 OXIDIZING PROPERTIES..... Not Applicable

10. STABILITY AND REACTIVITY

STABILITY..... Stable
 HAZARDOUS DECOMPOSITION PRODUCTS... Carbon monoxide, carbon dioxide, unknown hydrocarbons.

11. TOXICOLOGICAL INFORMATION

CHRONIC (LONG TERM) EFFECTS OF EXPOSURE

ROUTE OF ENTRY..... None known.
 EFFECTS OF CHRONIC EXPOSURE..... Although this product has not been tested for chronic effects it is judged as having a low order of

*** SAFETY DATA SHEET ***

11. TOXICOLOGICAL INFORMATION (Continued)

	toxicity based on component information. Use of good industrial hygiene practices is recommended.
TARGET ORGANS.....	Not Applicable
SPECIAL HEALTH EFFECTS.....	None known.

12. ECOLOGICAL INFORMATION

POTENTIAL EFFECT ON ENVIRONMENT....	Unknown.
MOBILITY.....	Unknown.
PERSISTENCE AND DEGRADABILITY.....	Unknown
POTENTIAL TO BIOACCUMULATE.....	Unknown
ECOTOXICITY.....	Unknown.
AQUATIC TOXICITY.....	None established.

13. DISPOSAL CONSIDERATIONS

WASTE DISPOSAL METHODS.....	Waste disposal should be in accordance with existing Community,National and local regulations.
EMPTY CONTAINER WARNINGS.....	Empty containers may contain product residue; follow SDS and label warnings even after they have been emptied.

14. TRANSPORT INFORMATION (See also section 9)

ADR/RID.....	Not Applicable
CEFIC TREMCARD NUMBER.....	Not Applicable
HAZCHEM CODE.....	Not Applicable
KEMMLER CODE.....	Not Applicable
IMDG CLASSIFICATION.....	Not Applicable
IATA CLASSIFICATION.....	Not Applicable
MARINE POLLUTANT.....	No
U.N. NUMBER (S.I.N.).....	Not Applicable
U.N. CLASS, PACKING GROUP.....	Not Applicable

*** SAFETY DATA SHEET ***

15. REGULATORY INFORMATION

EEC HAZARD CLASSIFICATION..... None.

Directives 88/379/EEC and 91/155/EEC have been considered when compiling this SDS; the information is provided for health and safety assessment by an industrial user. Reference should be made to any relevant local or national health, safety, and environmental legislation. This information does not constitute indication of suitability for specific uses.

16. OTHER INFORMATION

MSDS DATE..... 29 November, 1996

FOR REGULATORY INFORMATION, CONTACT:

Simon Ward
Product Assurance Supervisor
Adhesives - Europe
National Starch & Chemical Ltd.
Galvin Road
Slough, Berkshire SL1 4DF
United Kingdom
Telephone: (+44) 01753 533494
FAX: (+44) 01753 577704