

MANUFACTURER:

BondPro Corporation  
650 Brakke Drive  
Hudson, WI 54016  
Phone: 715-386-6206  
Fax: 715-386-1462  
ISSUED: March 10, 2003

Transportation Emergency  
Chemtrec: 800-424-9300

TRADE NAME:

BondPak 2221 Adhesive

This product is a kit which contains both the Part A and Part B independently packaged in a duel cartridge syringe. An MSDS for each of these components is included. Please do not separate the component MSDSs from this cover page.

The information in this Material Safety Data Sheet (MSDS) is believed to be correct as of the date issued. BONDPRO CORPORATION MAKES WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE

OR COURSE OF PERFORMANCE OR USAGE OF TRADE. User is responsible for determining whether the BondPro Corporation product is fit for a particular purpose and suitable for user's methods of use or application. Given the variety of factors that can affect the use and application of a BondPro Corporation product, some of which are uniquely within the user's knowledge and control, it is essential that the user evaluate the BondPro Corporation product to determine whether it is fit for a particular purpose and suitable for user's method of use or application.

BondPro Corporation provides information in electronic form as a service to its customers. Due to the remote possibility that electronic transfer may have resulted in errors, omissions or alterations in this information, BondPro Corporation makes no representations as to its completeness or accuracy. In addition, information obtained from a database may not be as current as the information in the MSDS available directly from BondPro Corporation.

<b>SECTION 1. CHEMICAL PRODUCT AND COMPANY INFORMATION</b>
--

MANUFACTURER:

BondPro Corporation  
650 Brakke Drive  
Hudson, WI 54016  
Phone: 715-386-6206  
Fax: 715-386-1462  
ISSUED: May 29, 2001

Transportation Emergency  
Chemtrec: 800-424-9300

TRADE NAME:

BondPak 2221 Adhesive part A Off-white Epoxy

## SECTION 2. COMPOSITION/INFORMATION ON INGREDIENTS

SUBSTANCE DESCRIPTION	CAS#	PERCENT
4,7,10-TRIOXATRIDECANE-1,13-DIAMINE	4246-51-9	50.0 - 60.0
MODIFIED DIGLYCIDYL ETHER OF BISPHENOL A - N.J. TRADE SECRET (T.S.) REGISTRY #04499600-5023P	Trade Secret	20.0 - 30.0
EPOXY RESIN	25068-38-6	5.0 - 10.0
AMORPHOUS SILICA 2,4,6-	7631-86-9	3.0 - 7.0
TRIS((DIMETHYLAMINO)METHYL)PHENOL	90-72-2	3.0 - 7.0
SULFONIC ACID SALT - N.J. TRADE SECRET (T.S.) REGISTRY #04499600-5022P	Trade Secret	1.0 - 5.0

The components of this product are in compliance with the chemical notification requirements of TSCA. All applicable chemical ingredients in this material are listed on the European Inventory of Existing Chemical Substances (EINECS), or are exempt polymers whose monomers are listed on EINECS.

## SECTION 3. PHYSICAL DATA

BOILING POINT:	N/A
VAPOR PRESSURE:	N/A
VAPOR DENSITY:	3.72 Air=1
EVAPORATION RATE:	N/A
SOLUBILITY IN WATER:	slight
SPECIFIC GRAVITY:	1.120 Water=1
PERCENT VOLATILE:	0.00% by wt
pH:	N/A
VISCOSITY:	8000 centipoise
MELTING POINT:	N/D

APPEARANCE AND ODOR:  
viscous liquid, amber, very mild pungent odor.

BondPak 2221 Adhesive part A Page 2 of 5

## SECTION 4. FIRE AND EXPLOSION HAZARD DATA

FLASH POINT:	> 194.00 F TCC
FLAMMABLE LIMITS - LEL:	N/A
FLAMMABLE LIMITS - UEL:	N/A
AUTOIGNITION TEMPERATURE:	N/D

EXTINGUISHING MEDIA:  
Water, Carbon dioxide, Dry chemical, Foam

SPECIAL FIRE FIGHTING PROCEDURES:  
Wear full protective clothing, including helmet, self-contained, positive pressure or pressure demand breathing apparatus, bunker coat

and pants, bands around arms, waist and legs, face mask, and protective covering for exposed areas of the head.

UNUSUAL FIRE AND EXPLOSION HAZARDS:

None known.

NFPA HAZARD CODES: HEALTH: 1 FIRE: 1 REACTIVITY: 0

UNUSUAL REACTION HAZARD: none

## SECTION 5. REACTIVITY DATA

STABILITY: Stable

INCOMPATIBILITY - MATERIALS/CONDITIONS TO AVOID:

Heat is generated during cure. Do not cure a mass larger than 50 grams in a confined space to prevent a premature reaction (exotherm) with production of intense heat and smoke.

HAZARDOUS POLYMERIZATION: Hazardous polymerization will not occur.

HAZARDOUS DECOMPOSITION PRODUCTS:

Carbon Monoxide and Carbon Dioxide, Oxides of Nitrogen, Amine Compounds, Toxic Vapors, Gases or Particulates.

## SECTION 6. ENVIRONMENTAL INFORMATION

SPILL RESPONSE:

Refer to other sections of this MSDS for information regarding physical and health hazards, respiratory protection, ventilation, and personal protective equipment. Cover with absorbent material. Collect spilled material. Place in a U.S. DOT-approved container.

RECOMMENDED DISPOSAL:

Cure product according to product instructions. Incinerate uncured waste in an industrial or commercial incinerator. Dispose of completely cured (or polymerized) material in a sanitary landfill.

ENVIRONMENTAL DATA:

Not determined.

BondPak 2221 Adhesive part A part A Page 3 of 5

REGULATORY INFORMATION:

Volatile Organic Compounds: N/A.

VOC Less H<sub>2</sub>O & Exempt Solvents: N/D.

Since regulations vary, consult applicable regulations or authorities before disposal. U.S. EPA Hazardous Waste Number = None (Not U.S. EPA Hazardous).

EPCRA HAZARD CLASS:

FIRE HAZARD: No PRESSURE: No REACTIVITY: No ACUTE: Yes CHRONIC: Yes

<b>SECTION 7. SUGGESTED FIRST AID</b>
---------------------------------------

EYE CONTACT:

Immediately flush eyes with large amounts of water for at least 15 minutes. Get immediate medical attention.

SKIN CONTACT:

Immediately flush skin with large amounts of water for at least 15 minutes in a chemical safety shower while removing contaminated clothing and shoes. Get immediate medical attention. Wash contaminated clothing before reuse.

INHALATION:

If signs/symptoms occur, remove person to fresh air. If signs/symptoms continue, call a physician.

IF SWALLOWED:

Do not induce vomiting. Drink two glasses of water. Call a physician.

<b>SECTION 8. PRECAUTIONARY INFORMATION</b>
---

EYE PROTECTION:

Avoid eye contact. Wear vented goggles. Wear safety glasses with side shields.

SKIN PROTECTION:

Avoid skin contact. Wear appropriate gloves when handling this material. A pair of gloves made from the following material(s) are recommended: polyethylene/ethylene vinyl alcohol.

RECOMMENDED VENTILATION:

Provide appropriate local exhaust for grinding, cutting or sanding cured material. Curing ovens must be exhausted to outdoors or to a suitable emission control device. Use in a well-ventilated area. If exhaust ventilation is not adequate, use appropriate respiratory protection.

RESPIRATORY PROTECTION:

Avoid breathing of vapors. Avoid breathing of dust created by cutting, sanding or grinding. Select one of the following NIOSH approved respirators based on airborne concentration of contaminants and in accordance with OSHA regulations: half-mask dust respirator.

BondPak 2221 Adhesive part A part A Page 4 of 5

PREVENTION OF ACCIDENTAL INGESTION:

Do not eat, drink or smoke when using this product. Wash exposed areas thoroughly with soap and water. Do not ingest.

RECOMMENDED STORAGE:

Store away from heat. Keep out of the reach of children.

FIRE AND EXPLOSION AVOIDANCE:

Keep container tightly closed.

## EXPOSURE LIMITS

<u>INGREDIENT</u>	<u>VALUE</u>	<u>UNIT</u>	<u>TYPE</u>	<u>AUTH</u>	<u>SKIN*</u>
4,7,10-TRIOXATRIDECANE-1,13-DIAMINE	NONE	NONE	NONE	NONE	
MODIFIED DIGLYCIDYL ETHER OF BISPHENOL A - N.J. TRADE SECRET (T.S.) REGISTRY #04499600-5023P	NONE	NONE	NONE	NONE	
EPOXY RESIN	NONE	NONE	NONE	NONE	
AMORPHOUS SILICA	3	MG/M3	TWA	CMRG	
			AS RESPIRABLE DUST		
2,4,6-TRIS((DIMETHYLAMINO)METHYL)PHENOL SULFONIC ACID SALT - N.J. TRADE SECRET (T.S.) REGISTRY #04499600-5022P	5	PPM	TWA	CMRG	
	NONE	NONE	NONE	NONE	

\* SKIN NOTATION: Listed substances indicated with 'Y' under SKIN refer to the potential contribution to the overall exposure by the cutaneous route including mucous membrane and eye, either by airborne or, more particularly, by direct contact with the substance. Vehicles can alter skin absorption.

SOURCE OF EXPOSURE LIMIT DATA:

- CMRG: Chemical Manufacturer Recommended Exposure Guidelines
- NONE: None Established

## SECTION 9. HEALTH HAZARD DATA

EYE CONTACT:

Chemical Related Eye Burns (chemical corrosivity): signs/symptoms can include cloudy appearance of the cornea, chemical burns, pain, tearing, ulcers, impaired vision or loss of vision. Vapors from heated material may cause eye irritation. Dust created by cutting, grinding, sanding, or machining may cause eye irritation.

SKIN CONTACT:

Allergic Skin Reaction: signs/symptoms can include redness, swelling, blistering, and itching.

Skin Burns (chemical corrosivity): signs/symptoms can include redness, swelling, itching, pain, blistering, ulceration, sloughing, and scar

BondPak 2221 Adhesive part A part A Page 5 of 5

formation.

May be absorbed through the skin and produce effects similar to those caused by inhalation and/or ingestion.

INHALATION:

Irritation (upper respiratory): signs/symptoms can include soreness of the nose and throat, coughing and sneezing.

Vapors of heated material may cause respiratory system irritation.

Dust from cutting, grinding, sanding or machining may cause irritation of the respiratory system.

IF SWALLOWED:

Ingestion may cause:

Irritation of Gastrointestinal Tissues: signs/symptoms can include pain, vomiting, abdominal tenderness, nausea, blood in

Abbreviations: N/D - Not Determined N/A - Not Applicable CA - Approximately

The information in this Material Safety Data Sheet (MSDS) is believed to be correct as of the date issued. BONDPRO CORPORATION MAKES WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE

OR COURSE OF PERFORMANCE OR USAGE OF TRADE. User is responsible for determining whether the BondPro Corporation product is fit for a particular purpose and suitable for user's methods of use or application. Given the variety of factors that can affect the use and application of a BondPro

Corporation product, some of which are uniquely within the user's knowledge and control, it is essential that the user evaluate the BondPro Corporation product to determine whether it is fit for a particular purpose and suitable for user's method of use or application.

BondPro Corporation provides information in electronic form as a service to its customers. Due to the remote possibility that electronic transfer may have resulted in errors, omissions or alterations in this information, BondPro Corporation makes no representations as to its completeness or accuracy. In addition, information obtained from a database may not be as current as the information in the MSDS available directly from BondPro Corporation.

<b>SECTION 1. CHEMICAL PRODUCT AND COMPANY INFORMATION</b>
--

MANUFACTURER:

BondPro Corporation  
650 Brakke Drive  
Hudson, WI 54016  
Phone: 715-386-6206  
Fax: 715-386-1462  
ISSUED: May 29, 2001

Transportation Emergency  
Chemtrec: 800-424-9300

TRADE NAME:

BondPak 2221 part B Off-White Epoxy

**SECTION 2. COMPOSITION/INFORMATION ON INGREDIENTS**

SUBSTANCE DESCRIPTION	CAS#	PERCENT
EPOXY RESIN	25068-38-6	80.0 - 90.0
ACRYLIC POLYMER - N.J. TRADE SECRET (T.S.) REGISTRY #04499600-5018P ++	TradeSecret	10.0 - 20.0

The components of this product are in compliance with the chemical notification requirements of TSCA. All applicable chemical ingredients in this material are listed on the European Inventory of Existing Chemical Substances (EINECS), or are exempt polymers whose monomers are listed on EINECS.

++ Not hazardous according to Canadian WHMIS criteria. Non-WHMIS controlled.

**SECTION 3. PHYSICAL DATA**

BOILING POINT:	N/A
VAPOR PRESSURE:	N/A
VAPOR DENSITY:	N/A
EVAPORATION RATE:	N/A
SOLUBILITY IN WATER:	nil
SPECIFIC GRAVITY:	1.140 Water=1
PERCENT VOLATILE:	0.00% by wt
pH:	N/A
VISCOSITY:	80000 - 100000 centipoise @ room temperature
MELTING POINT:	N/D
APPEARANCE AND ODOR:	
viscous, white, very mild odor.	

**SECTION 4. FIRE AND EXPLOSION HAZARD DATA**

FLASH POINT:	> 340 F COC
FLAMMABLE LIMITS - LEL:	N/A
FLAMMABLE LIMITS - UEL:	N/A

BondPak 2221 part B part B Page 2 of 5

AUTOIGNITION TEMPERATURE:	N/D
---------------------------	-----

**EXTINGUISHING MEDIA:**

Water, Carbon dioxide, Dry chemical, Foam

**SPECIAL FIRE FIGHTING PROCEDURES:**

Wear full protective clothing, including helmet, self-contained, positive pressure or pressure demand breathing apparatus, bunker coat and pants, bands around arms, waist and legs, face mask, and protective covering for exposed areas of the head.

**UNUSUAL FIRE AND EXPLOSION HAZARDS:**

None known.

NFPA HAZARD CODES: HEALTH: 1 FIRE: 0 REACTIVITY: 1

UNUSUAL REACTION HAZARD: none

## SECTION 5. REACTIVITY DATA

STABILITY: Stable

INCOMPATIBILITY - MATERIALS/CONDITIONS TO AVOID:

Strong Acids, Strong Oxidizing Agents. Heat is generated during cure. Do not cure a mass larger than 50 grams in a confined space to prevent a premature reaction (exotherm) with production of intense heat and smoke.

HAZARDOUS POLYMERIZATION: Hazardous polymerization will not occur.

HAZARDOUS DECOMPOSITION PRODUCTS:

Carbon Monoxide and Carbon Dioxide, Aldehydes, Ketones, Hydrocarbons, Toxic Vapors, Gases or Particulates.

## SECTION 6. ENVIRONMENTAL INFORMATION

SPILL RESPONSE:

Refer to other sections of this MSDS for information regarding physical and health hazards, respiratory protection, ventilation, and personal protective equipment. Cover with absorbent material. Collect spilled material. Place in a U.S. DOT-approved container.

RECOMMENDED DISPOSAL:

Cure product according to product instructions. Incinerate uncured waste in an industrial or commercial incinerator. Dispose of completely cured (or polymerized) material in a sanitary landfill.

ENVIRONMENTAL DATA:

Not determined.

REGULATORY INFORMATION:

Volatile Organic Compounds: N/A.

VOC Less H<sub>2</sub>O & Exempt Solvents: N/D.

BondPak 2221 part B part B Page 3 of 5

Since regulations vary, consult applicable regulations or authorities before disposal. U.S. EPA Hazardous Waste Number = None (Not U.S. EPA Hazardous).

EPCRA HAZARD CLASS:

FIRE HAZARD: No PRESSURE: No REACTIVITY: No ACUTE: Yes CHRONIC: Yes

## SECTION 7. SUGGESTED FIRST AID

EYE CONTACT:

Immediately flush eyes with large amounts of water. Get immediate

medical attention.

SKIN CONTACT:

Immediately wash skin with soap and large amounts of water. Remove contaminated clothing. If signs/symptoms occur, call a physician. Wash contaminated clothing before reuse and dispose of contaminated shoes.

INHALATION:

If signs/symptoms occur, remove person to fresh air. If signs/symptoms continue, call a physician.

IF SWALLOWED:

Do not induce vomiting. Drink two glasses of water. Call a physician.

<b>SECTION 8. PRECAUTIONARY INFORMATION</b>
---

EYE PROTECTION:

Avoid eye contact. Wear vented goggles. Wear safety glasses with side shields.

SKIN PROTECTION:

Avoid skin contact. Wear appropriate gloves when handling this material. A pair of gloves made from the following material(s) are recommended: polyethylene/ethylene vinyl alcohol.

RECOMMENDED VENTILATION:

Provide appropriate local exhaust for grinding, cutting or sanding cured material. Curing ovens must be exhausted to outdoors or to a suitable emission control device. Use in a well-ventilated area. If exhaust ventilation is not adequate, use appropriate respiratory protection.

RESPIRATORY PROTECTION:

Avoid breathing of vapors created during the cure cycle. Avoid breathing of dust created by cutting, sanding or grinding. Select one of the following NIOSH approved respirators based on airborne concentration of contaminants and in accordance with OSHA regulations: half-mask dust respirator.

PREVENTION OF ACCIDENTAL INGESTION:

Do not eat, drink or smoke when using this product. Wash exposed  
BondPak 2221 part B part B Page 4 of 5

areas thoroughly with soap and water. Do not ingest.

RECOMMENDED STORAGE:

Store away from heat. Keep out of the reach of children.

FIRE AND EXPLOSION AVOIDANCE:

Keep container tightly closed.

**EXPOSURE LIMITS**

**INGREDIENT**

**VALUE UNIT TYPE AUTH SKIN\***

EPOXY RESIN	NONE	NONE	NONE	NONE
ACRYLIC POLYMER - N.J. TRADE				
SECRET (T.S.) REGISTRY #04499600-5018P ++	NONE	NONE	NONE	NONE

\* SKIN NOTATION: Listed substances indicated with 'Y' under SKIN refer to the potential contribution to the overall exposure by the cutaneous route including mucous membrane and eye, either by airborne or, more particularly, by direct contact with the substance. Vehicles can alter skin absorption.

++ Not hazardous according to Canadian WHMIS criteria. Non-WHMIS controlled.

SOURCE OF EXPOSURE LIMIT DATA:

- NONE: None Established

<b>SECTION 9. HEALTH HAZARD DATA</b>
--------------------------------------

EYE CONTACT:

Moderate Eye Irritation: signs/symptoms can include redness, swelling, pain, tearing, and hazy vision.

Vapors from heated material may cause eye irritation.

Dust created by cutting, grinding, sanding, or machining may cause eye irritation.

SKIN CONTACT:

Allergic Skin Reaction: signs/symptoms can include redness, swelling, blistering, and itching.

Mild Skin Irritation: signs/symptoms can include redness, swelling, and itching.

INHALATION:

Irritation (upper respiratory): signs/symptoms can include soreness of the nose and throat, coughing and sneezing.

Vapors of heated material may cause respiratory system irritation.

Dust from cutting, grinding, sanding or machining may cause irritation of the respiratory system.

IF SWALLOWED:

Ingestion may cause:

BondPak 2221 part B part B Page 5 of 5

Irritation of Gastrointestinal Tissues: signs/symptoms can include pain, vomiting, abdominal tenderness, nausea, blood in vomitus, and blood in feces.

OTHER HEALTH HAZARD INFORMATION:

Exposure to this material in normal storage and handling has not been reported to cause significant adverse health effects. However, under normal processing conditions, e.g. grinding or heating, this product may release fumes and vapors of variable composition based on specific process conditions. These process releases may produce irritation or any of the health effects listed above when the emissions are present at elevated concentrations. Use with appropriate local exhaust ventilation.

Abbreviations: N/D - Not Determined N/A - Not Applicable CA - Approximately

The information in this Material Safety Data Sheet (MSDS) is believed to be correct as of the date issued. BONDPRO CORPORATION MAKES WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR COURSE OF PERFORMANCE OR USAGE OF TRADE. User is responsible for determining whether the BondPro Corporation product is fit for a particular purpose and suitable for user's methods of use or application. Given the variety of factors that can affect the use and application of a BondPro

Corporation product, some of which are uniquely within the user's knowledge and control, it is essential that the user evaluate the BondPro Corporation product to determine whether it is fit for a particular purpose and suitable for user's method of use or application.

BondPro Corporation provides information in electronic form as a service to its customers. Due to the remote possibility that electronic transfer may have resulted in errors, omissions or alterations in this information, BondPro Corporation makes no representations as to its completeness or accuracy. In addition, information obtained from a database may not be as current as the information in the MSDS available directly from BondPro Corporation.