



MATERIAL SAFETY DATA SHEET

BONDAFLEX PUR 1000 PRIMER

SECTION 1 – PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: BONDAFLEX PUR 1000 PRIMER
PRODUCT CODE: PUR 1000 PRIMER
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REVISION DATE: 3/11/08 SUPERSEDES: 6/3/05

SECTION 2 – COMPOSITION / INFORMATION ON HAZARDOUS INGREDIENTS

This product consists of a mixture/preparation.

CAS NO.	INGREDIENT	WT%
108-88-3	Toluene	15-40
67-64-1	Acetone	15-40
78-93-3	Methyl ethyl ketone	15-40
141-78-6	Ethyl Acetate	7-13
4151-51-3	Tris(4-Isocyanatophenyl) Thiophosphate ^b	1-5

SECTION 3 – HAZARDS IDENTIFICATION

MAIN SYMPTOMS:
EYE: Product liquid, aerosols or vapors are irritating and can cause tearing, reddening and swelling. If left untreated, corneal damage can occur and injury is slow to heal. However, damage is usually reversible. Chronic eye contact may cause conjunctivitis. See First Aid Section for treatment.
SKIN: Product may react with skin protein and moisture and cause irritation and/or dermatitis, which may include the following symptoms: reddening, swelling, rash, scaling or blistering. Cured material is difficult to remove.
ACUTE INHALATION: Acute inhalation of isocyanate vapors or mist at concentrations above the exposure guidelines can irritate (burning sensation) the mucous membranes in the respiratory tract (nose, throat, lungs) causing runny nose, sore throat, coughing, chest discomfort, shortness of breath and reduced lung function (breathing obstruction). Persons with a preexisting, nonspecific bronchial hyperreactivity can respond to concentration below the exposure limits with similar symptoms as well as asthma attacks. Exposure well above the exposure guidelines may lead to bronchitis, bronchial spasm and pulmonary edema (fluid in lung). These effects are usually reversible. Chemical or hypersensitive pneumonitis, with flu-like symptoms (e.g. chills, fever) has also been reported. These symptoms can be delayed up to several hours after exposure. Solvent vapors are irritating to the eyes, nose, throat and respiratory tract resulting in red, itchy eyes, dryness of the throat and tightness in the chest. Other possible symptoms of overexposure include headache, nausea, narcosis, fatigue and loss of appetite. Ethyl acetate (EA) odor may be objectionable at 200 ppm and is mildly irritating to the eyes, nose and throat at 400 ppm. At concentration in excess of 13,000 ppm EA is only mildly narcotic. Acetone and methyl ethyl ketone inhalation at high concentrations may cause central nervous system effects characterized by nausea, headache, dizziness, unconsciousness and coma.
ORAL: Acute ingestion can result in irritation and corrosive action in the mouth, stomach tissue and digestive tract. May cause central nervous system depression, kidney damage, and liver damage. Symptoms can include sore throat, abdominal pain, nausea, vomiting and diarrhea. Aspiration of material into the lungs can cause chemical pneumonitis, which may be fatal.

NFPA HAZARD CODES: Health: 2 Flammability: 3 Reactivity: 1

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SECTION 4 – FIRST-AID PROCEDURES

INHALATION:	Move to an area free from risk of further exposure. Administer oxygen or artificial respiration as needed. Obtain medical attention. Asthmatic-type symptoms may develop and may be immediate or delayed for several hours. Consult physician should this occur.
SKIN CONTACT:	Remove contaminated clothing. Wash affected skin thoroughly with soap and water. Wash contaminated clothing thoroughly before reuse. For severe exposures, get under safety shower after removing clothing, then get medical attention. For lesser exposure, seek medical attention if irritation develops or persists after the skin is washed. Get medical attention if irritation occurs. Clean contaminated clothing and shoes before reuse.
EYE CONTACT:	Flush with copious amounts of water (preferably lukewarm water) for at least 15 minutes, holding eyelids open all the time. Refer individual to physician or ophthalmologist for immediate follow-up.
INGESTION:	DO NOT INDUCE VOMITING. Give 1 to 2 cups of milk or water to drink. DO NOT GIVE ANYTHING BY MOUTH TO AN UNCONSCIOUS PERSON. Consult physician.
NOTE TO PHYSICIAN:	EYES: Stain for evidence of corneal injury. If cornea is burned, instill antibiotic steroid preparation frequently. Workplace isocyanate vapors have produced reversible corneal epithelial edema impairing vision. SKIN: Isocyanates are known skin sanitizers. Treat symptomatically as for contact dermatitis or thermal burns. If burned, treat as thermal burn. INGESTION: Treat symptomatically there is no specific antidote for isocyanates. For monochlorobenzene, administration of adrenaline is not recommended. RESPIRATORY: Isocyanates are known pulmonary sensitizers. Treatment is essentially symptomatic. An individual having a skin or pulmonary sensitization reaction to this material should be removed from any exposure to any isocyanate.

SECTION 5 – FIRE-FIGHTING MEASURES

SUITABLE EXTINGUISHING MEDIA:	Dry chemical; Carbon dioxide; Foam; Water spray for large fires.
UNSUITABLE EXTINGUISHING MEDIA:	None
SPECIFIC FIRE HAZARDS:	Closed container may explode when exposed to extreme heat or burst when contaminated with water (CO ₂ evolved). Solvent vapors may be heavier than air. Stagnant air may cause vapors to build up and travel along the ground to an ignition source which may result in a flash back to the source of the vapors. Isolate from heat, electrical equipment, sparks and open flame.
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. Warning! Flammable liquid and vapor. Keep away from heat, sparks, and flame. As a result of hydrolysis flammable vapors may accumulate in the container headspace. If large amount is involved, evacuate area.
FLASH POINT:	The component with the lowest flash point is 1 °F (-17 °C)
FLAMMABILITY LIMITS IN AIR :	LEL: 1.1% toluene, 1.8% MEK, 2.2 % ethyl acetate, 2.6% acetone UEL: 7.1% toluene, 11.5% MEK, 11% ethyl acetate, 12.8% acetone
HAZARDOUS DECOMPOSITION PRODUCTS:	At combustion: carbon monoxide, NO _x , PO _x , SO _x , HCl, isocyanate vapors, and small amounts of phosgene, chlorine, and HCN.

SECTION 6 – ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS:	Observe all personal protective equipment recommendations described in Sections 5 and 8.
ENVIRONMENTAL PRECAUTIONS:	Disposal of collected product, residues, and cleanup materials may be governmentally regulated. Observe all applicable local, state and federal waste management regulations.
METHODS FOR CLEANING UP:	Evacuate and ventilate spill area; dike spill to prevent entry into water systems; wear full protective equipment, including respiratory during clean-up. Remove all sources of ignition. Use a spark-proof tool. Provide ventilation. (See Protective Equipment Section). Major Spill: If transportation spill call CHEMTREC 800/424-9300. If temporary control of isocyanate vapor is required, a blanket of protein foam (available at most fire departments) may be placed over the spill. Large quantities may be pumped into closed, but not sealed, container



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for disposal. Minor spill: Absorb isocyanates with sawdust or other absorbent, shovel into suitable unsealed containers, transport to well-ventilated area (outside) Clean up: Decontaminate floor with decontamination solution letting stand for 15 minutes. Local, state, and federal reporting requirements may apply to spills or releases of this material into the environment. See applicable regulatory compliance information in Section 15.

SECTION 7 – HANDLING AND STORAGE

HANDLING: Material is flammable. If container is exposed to high heat it can be pressurized and possibly rupture. Isocyanates react slowly with water to form CO₂ gas. This gas can cause sealed containers to expand and possibly rupture. Use in a well ventilated area.

STORAGE: Keep away from heat, sparks or open flame. Ground container during storage and transfer operation. Store in tightly closed containers to prevent moisture contamination. Do not reseal if contamination is suspected. Avoid contact with skin and eyes. Do not breath aerosols and vapors. Warning properties (irritation of the eyes, nose and throat or odor) are not adequate to prevent chronic overexposure from inhalation. Isocyanates can produce asthmatic sensitization upon either single inhalation exposure to a relatively high concentration or upon repeated inhalation exposures to lower concentrations. Exposure to vapors of heated isocyanates can be extremely dangerous. Employee education and training in the safe use and handling of this compound are required under the OSHA Hazard Communication Standard.

SHELF LIFE: 6 months

STORAGE TEMPERATURE(MIN/MAX): Ambient/122F (50C)

SECTION 8 – EXPOSURE CONTROL AND PERSONAL PROTECTION

ENGINEERING CONTROLS:

LOCAL EXHAUST: Local exhaust should be used to maintain levels below the exposure limits or guidelines. For spray applications, an air-supplied respirator must be worn.

GENERAL VENTILATION: Standard reference sources regarding industrial ventilation (i.e., ACGIH Industrial ventilation) should be consulted for guidance about adequate ventilation.

PERSONAL PROTECTIVE EQUIPMENT:

EYE PROTECTION: Avoid eye contact. Liquid chemical goggles or full-face shield. Contact lenses should not be worn.

SKIN AND BODY PROTECTION: Avoid skin contact. Chemical resistant gloves (butyl rubber, nitrile rubber, polyvinyl alcohol). However, please note that PVA degrades in water. Cover as much of the exposed skin area as possible with appropriate clothing. If skin creams are used, keep the area covered by the cream to a minimum.

RESPIRATORY PROTECTION: Avoid breathing of vapors. Concentrations greater than the exposure guideline can occur when isocyanates are sprayed, heated or used in a poorly ventilated area. In such cases, or whenever concentrations of isocyanates and solvents exceed the exposure guideline or limits, respiratory protection must be worn. A supplied-air respirator or a self-contained breathing apparatus is recommended. In situations where isocyanates are not sprayed or heated and a supplied-air or self-contained apparatus is unavailable or it is impractical, at least an air-purifying respirator equipped with a particulate filter must be worn. **HOWEVER, THIS SHOULD BE PERMITTED FOR ONLY SHORT PERIODS OF TIME (LESS THAN ONE HOUR) AT RELATIVELY LOW CONCENTRATIONS (AT OR NEAR THE EXPOSURE GUIDELINE OR LIMITS).** However, due to the poor warning properties of isocyanates, proper fit and timely replacement of filter elements must be ensured. Observe OSHA regulations for respirator use (29 CFR 1910.134).

MEDICAL SURVELLANCE: Persons with asthmatic-type conditions, chronic bronchitis, other chronic respiratory diseases or recurrent skin eczema or sensitization should be excluded from working with isocyanates. Once a person is diagnosed as sensitized to isocyanates, no further exposure can be permitted.

HYGIENE MEASURES: Wash hands thoroughly after handling. Do not eat drink or smoke during use. Avoid contact with eyes, skin or clothing. Avoid breathing dust/vapor/mist/gas/aerosol.

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SECTION 9 – PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL FORM:	Liquid
COLOR:	Yellowish to Brownish
ODOR:	Solvent
BOILING POINT (AT 760 MM HG):	The lowest boiling component will start to boil at 133 F (56 C)
FLASHPOINT:	The component with the lowest flash point is 1 F (-17 C)
EXPLOSION PROPERTIES:	Acetone LEL 2.6%, UEL 12.8%; MEK LEL 1.8%, UEL 11.5%; Toluene LEL 1.1%, UEL 7.1%
VAPOR PRESSURE:	0.00003 mmHg for Tris (4-Isocyanatophenyl) Thiophosphate; 185 mmHg at 68 F for Acetone; 77 mmHg at 68 F for MEK; 75 mmHg at 68 F for EA; 37 mmHg at 86 F for Toluene.
VAPOR DENSITY (AIR = 1):	Toluene 3.1; EA 3; MEK 2.5; Acetone 2.
DENSITY:	7.1 lbs/gal
SOLUBILITY IN WATER (%):	Reacts slowly with water to liberate CO ₂ gas.
SOLUBILITY (NON AQUEOUS)	Acetone, methylene chloride
SPECIFIC GRAVITY (AT 77 °F/25 °C):	0.85
VISCOSITY (AT 68 °F/20 °C):	Approx. 10 sec flow time
FREEZING / MELTING POINT:	Not Determined
ODOR THRESHOLD:	Not Determined
EVAPORATION RATE:	Not Determined
VOC:	833 g/L
NOTE:	The above information is not intended for use in preparing product specifications.

SECTION 10 – STABILITY AND REACTIVITY

CHEMICAL STABILITY:	Stable under normal conditions.
HAZARDOUS POLYMERIZATION:	Hazardous polymerization may occur; May occur if in contact with moisture or other materials which react with isocyanates.
CONDITIONS TO AVOID:	Excessive heat, ignition sources. Avoid heat, sparks, and flames.
MATERIALS TO AVOID:	Water, strong oxidizers, amines alcohols, acids and alkali, chromyl chloride, chromic anhydride, potassium-tert-butoxide, pyridine, chloroform + alkali, hydrogen peroxides + nitric acid, 2- propanol, inorganic acids
HAZARDOUS DECOMPOSITION PRODUCTS:	At combustion: carbon monoxide, NO _x , PO _x , SO _x , HCl, isocyanate vapors, and small amounts of phosgene, chlorine, and HCN.

SECTION 11 – TOXICOLOGICAL INFORMATION

See Section 2 for exposure limits, Section 3 for exposure effects.

CHRONIC TOXICITY:	
SKIN:	Chronic or prolonged skin contact may cause reddening, swelling, rash, scaling, blistering, and in some cases, skin sensitization. Individuals who have developed a skin sensitization can develop these symptoms as a result of contact with very small amounts of liquid material or as a result of exposure to vapor. Repeated or prolonged skin contact with the solvents can result in dry, defatted and cracked skin causing increased susceptibility to infection. In addition, dermatitis and skin rash and redness may occur from skin contact. Ethyl acetate does not readily penetrate the skin to cause systemic toxic effects.
INHALATION:	As a result of previous repeated overexposure or a single large dose, certain individuals develop isocyanate sensitization (chemical asthma), which will cause them to react to a later exposure to isocyanate at levels well below the exposure limits. These symptoms, which can include chest tightness, wheezing, cough, shortness of breath or asthma attack, could be immediate or delayed (up to several hours after exposure). Similar to many non-specific asthmatic responses, there are reports that once sensitized an individual can experience these symptoms upon exposure to dust, cold air or other irritants. This increased lung sensitivity can persist for weeks and in severe cases for several years. Overexposure to isocyanates has also been reported to cause

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lung damage (including decrease in lung function), which may be permanent. Sensitization can either be temporary or permanent. Chronic exposure to organic solvents has been associated with various neurotoxic effects including permanent brain and nervous system damage. Symptoms include loss of memory, loss of intellectual ability and loss of coordination.

ORAL:

No data for chronic ingestion found.

SPECIFIC EFFECTS:

This material contains the following components with the special hazards listed below.

Carcinogens: See below.

Teratogens: None known.

Mutagens: Mutations were noted in hamster oral feeding studies and in yeasts exposed to high vapor concentrations of ethyl acetate.

Reproductive toxins: Toluene is listed for developmental toxicity.

CARCINOGENICITY:

The components of this product are not listed by NTP, IRAC, or regulated as a carcinogen by OSHA.

SECTION 12 – ECOLOGICAL INFORMATION

FOR TOLUENE:

Environmental Fate: When released into the soil, this material may evaporate to a moderate extent. When released into the soil, this material is expected to leach into groundwater. When released into the soil, this material may biodegrade to a moderate extent. When released into water, this material may evaporate to a moderate extent. When released into water, this material may biodegrade to a moderate extent. When released into the air, this material may be moderately degraded by reaction with photochemically produced hydroxyl radicals. When released into the air, this material is expected to have a half-life of less than 1 day. This material is not expected to significantly bioaccumulate. This material has a log octanol-water partition coefficient of less than 3.0. Bioconcentration factor = 13.2 (eels).

Environmental Toxicity: This material is expected to be toxic to aquatic life. The LC50/96-hour values for fish are between 10 and 100 mg/l.

FOR ACETONE:

Environmental Toxicity: Rainbow trout LC50=5,540 mg/L/96H Sunfish (tap water), death at 14,250 ppm/24H; Mosquito fish (turbid water) TLm=13,000 ppm/48H Cas# 67-64-1: LC50 (96Hr) Rainbow trout = 5,540 mg/L; Static conditions, 11-13 degrees C LC50 (96Hr) Fathead Minnow = 7,280-8,120 mg/L; Flow-through Conditions LC50 (96Hr) Bluegill = 8,300 mg/L

FOR METHYL ETHYL KETONE:

Environmental Toxicity: Fathead minnow LC50=3,220 mg/L/96H; Bluegill TLm=5,640 to 1,690 mg/L/24 to 96H

SECTION 13 – DISPOSAL INFORMATION

PRODUCT DISPOSAL:

When a decision is made to discard this material, as received, is it classified as a hazardous waste? Yes. U.S. EPA Hazardous Waste Number: D001 (Ignitable). Waste must be disposed of in accordance with federal, state, and local environmental control regulations. Incineration is the preferred method. Empty containers must be handled with care due to product residue. Decontaminate containers prior to disposal. Empty decontaminated containers should be crushed to prevent reuse. **DO NOT HEAT OR CUT EMPTY CONTAINER WITH ELECTRIC OR GAS TORCH.** (See Fire and Reactivity Section) Vapors and gases may be highly toxic.

WASTE FROM RESIDUES -

CONTAMINATED PACKAGING: Residues of hazardous waste in empty containers should be managed according to 40 CFR 261.7

State or local laws may impose additional regulatory requirements regarding disposal.



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SECTION 14 – TRANSPORT INFORMATION

DOT Information (49CFR 172.101)

PROPER SHIPPING NAME: Flammable Liquid, nos
HAZARD CLASS: Class 3, Flammable liquid
UN / NA NUMBER: UN1993,
PACKING GROUP: II
QUANTITY LIMITATIONS: Passenger Aircraft/Rail – 5L
Cargo Aircraft Only – 60 L
VESSEL STORAGE REQUIREMENTS: Category "B"
DOT PRODUCT RQ lbs (kgs): 100 lbs (45.4 kgs)
HAZARD LABEL: Flammable Liquid
HAZARD PLACARD: Flammable

SECTION 15 – REGULATORY INFORMATION

US FEDERAL REGULATIONS:

Occupational Health and Safety Administration (OSHA)

Ingredients listed on National Toxicology Program (NTP) Annual Report on Carcinogens

◆ None

Ingredients listed on International Agency for Research on Cancer (IARC) Monographs

◆ None

Toxic Substance Control Act (TSCA)

TSCA Status: All chemical substances found in this product comply with the Toxic Substances Control Act inventory reporting requirements.

Superfund Amendments and Reauthorization Act (SARA) Title III

- Section 302/304

These sections require emergency planning based on Threshold Planning Quantities (TPQs) and release reporting based on Reportable Quantities (RQs) of 'Extremely Hazardous Substances' (EHS) listed in Appendix A of 40 CFR 355.

<i>Chemical</i>	<i>CAS No.</i>	<i>Wt%</i>	<i>RQ (lbs)</i>	<i>TPQ (lbs)</i>
Toluene	108-88-3	15-40	1,000	None
Acetone	67-64-1	15-40	5,000	None
Methyl ethyl ketone	78-93-3	15-40	5,000	None
Ethyl acetate	141-78-6	7-13	5,000	None
Chlorobenzene	108-90-7	0.1-1.0	100	None

- Section 311/312

These sections require Tier I/Tier II - Emergency and hazardous chemical inventory form.

Minimum thresholds have been established for Tier One/Tier Two reporting under Title III, Section 312. These thresholds are as follows:

For Extremely Hazardous Substances (EHSs) designated under Section 302 of Title III, the reporting threshold is 500 pounds (or 227 kg.) or the threshold planning quantity (TPQ), whichever is lower:

For all other hazardous chemicals for which facilities are required to have or prepare an MSDS, the minimum reporting threshold is 10,000 pounds (or 4,540 kg.).

Section 312 Hazard Class:



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Acute: Yes
Chronic: Yes
Fire: Yes
Pressure: No
Reactive: Yes

- **Section 313**

This product contains the following toxic chemicals subject to the reporting requirements of Section 313 of the Emergency Planning and Community Right to Know Act:

<i>Chemical</i>	<i>CAS No.</i>	<i>Wt%</i>	<i>Threshold Reporting %</i>
Methyl ethyl ketone	78-93-3	15-40	1.0
Toluene	108-88-3	15-40	1.0
Chlorobenzene	108-90-7	0.1-1.0	1.0

Comprehensive Environmental Response, Compensation and Liability Act (CERCLA)

Releases of CERCLA hazardous substances, in quantities equal to or greater than their reportable quantity (RQ), are subject to reporting to the National Response Center under CERCLA. Such releases are also subject to state and local regulations under Section 304 of SARA Title III (EPCRA). This material contains the following components and RQs on the CERCLA hazardous substance list.

<i>Chemical</i>	<i>CAS No.</i>	<i>Wt%</i>	<i>Reportable Quantity (RQ) in pounds</i>
Toluene	108-88-3	15-40	1,000
Acetone	67-64-1	15-40	5,000
Methyl ethyl ketone	78-93-3	15-40	5,000
Ethyl acetate	141-78-6	7-13	5,000
Chlorobenzene	108-90-7	0.1-1.0	100

US STATE REGULATIONS:

California

California Safe Drinking Water and Toxic Enforcement Act – Proposition 65

This product contains the following chemical currently listed under California Proposition 65.

- ◆ Toluene - listed for developmental toxicity

State Right-to-Know Regulations

States within the US that have promulgated State Right-to-Know regulations with chemical listing requirements including the chemicals in this product are provided below.

<i>Chemical</i>	<i>CAS No.</i>	<i>Wt%</i>	<i>States</i>
Toluene	108-88-3	15-30	Florida, Massachusetts, Michigan, Minnesota, New Jersey, Pennsylvania, Washington
Acetone	67-64-1	15-30	Florida, Massachusetts, Minnesota, Pennsylvania, Washington
Methyl ethyl ketone	78-93-3	15-30	Florida, Massachusetts, Minnesota, New Jersey, Pennsylvania, Washington
Polyurethane Polymer	Trade Secret	10-30	New Jersey
Ethyl acetate (EA)	141-78-6	7-13	Florida, Massachusetts, Minnesota, Pennsylvania, Washington
Chlorobenzene	108-90-7	0.1-1.0	Florida, Massachusetts, Michigan, Minnesota, New Jersey, Pennsylvania, Washington



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INTERNATIONAL:

Canada

This product has been classified according to the hazard criteria of the CPR and the MSDS contains all the information required by the CPR.

Canadian DSL

All ingredients in this product are currently listed on the Canadian Domestic Substances List (DSL) and would not be considered new for the purposes of the Canadian Environmental Protection Act (CEPA).

Note:

The recipient of this product should be aware of the possible existence of additional local regulations, which may be applicable to this product.

SECTION 16 – OTHER INFORMATION

These data are offered in good faith as typical values and not as a product specification. No warranty, either expressed or implied, is hereby made. The recommended industrial hygiene and safe handling procedures are believed to be generally applicable. However, each user should review these recommendations in the specific context of the intended use and determine whether they are appropriate.