

1. Product and company identification

Product Name	Pro-Bonder – Part B
Internal Code	260120, 260130
Product Type	Amine Curing Agent for Epoxy Resin
Product Use	Civil Engineering Resin System
Manufacturer/Supplier	Prospec Specialties Inc. Suite 400, 3601, Highway 7, Markham ON, L3R 0M3, CANADA info@prospecspecialties.com
Revision Date	06-DEC-2012
Telephone	For 24-Hour Emergency Response Information Call Tel: (888) 749-8456 (Canada)

2. Hazards identification

Product Form	Black liquid
OSHA/HCS status	This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Emergency Overview	WARNING! HARMFUL IN CONTACT WITH SKIN. HARMFUL IF SWALLOWED. CORROSIVE. SEVERE SKIN IRRITANT. SEVERE EYE IRRITANT. RESPIRATORY IRRITANT. MAY CAUSE SENSITIZATION BY SKIN CONTACT. MAY CAUSE SENSITIZATION BY INHALATION. KEEP AWAY FROM HEAT AND SOURCES OF IGNITION.
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Potential acute health effects

Inhalation	Harmful if inhaled and may cause delayed lung injury. Inhalation of aerosol may cause irritation to the upper respiratory tract. Risk of serious damage to the lungs (by inhalation). May cause nose, throat, and lung irritation. Can cause severe eye, skin and respiratory tract burns. Inhalation of vapors and/or aerosols in high concentration may cause irritation of respiratory system.
Ingestion	If ingested, severe burns of the mouth and throat, as well as a danger of perforation of the esophagus and the stomach.

Skin	May cause severe irritation and burns. May cause skin sensitization. May aggravate pre-existing skin disorders.
Eyes	May cause severe irritation or burns. Direct contact with the eye may cause blindness.

Potential chronic health effects

Chronic effects	Prolonged contact may result in chemical burns and permanent damage. Repeated or prolonged contact may cause skin &/or respiratory sensitization, asthma and eczemas.
Carcinogenicity	<p>This product contains < 0.3% Carbon Black (CAS # 1333-86-4) which is classified as possibly carcinogenic to humans by IARC (IARC Group 2B). Not listed as a carcinogen by NTP, ACGIH, OSHA or the European Union.</p> <p>This product contains < 0.3% Quartz (CAS # 14808-60-7) which is classified as carcinogenic to humans by IARC (IARC Group 1; Monograph 68).</p>
Developmental effects	No known significant effects or critical hazards.
Fertility effects	No known significant effects or critical hazards.
Target organs	Skin, Eyes, Respiratory Tract, Kidneys. Liver

Over-exposure signs/symptoms

Inhalation	Irritation of the nose, throat, and lungs.
Ingestion	Burns of the mouth, throat, and gastrointestinal tract.
Skin	Moderate to severe irritation. Contact with skin may cause burns.
Eyes	Pain and/or irritation, redness, watering eyes. Burns of the eyes.
Medical conditions aggravated by over-exposure	Pre-existing skin and respiratory disorders may be aggravated by over-exposure to this product.

See section 11 for more detailed information on health effects and symptoms.

3. Composition/Information on ingredients

<u>Ingredient name</u>	<u>CAS number</u>	<u>WT%</u>
Calcium Carbonate	1317-65-3	15 – 30%
Phenol, 4, 4'- (1-methylethylidene) bis-	80-05-7	5 – 20%
Diethylenetriamine (DETA)	111-40-7	5 – 20%

4. First aid measures

Eye contact	Immediately flush eyes with plenty of water for at least 20 minutes, while lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention.
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Skin contact	Immediately remove contaminated clothing and shoes. Wipe excess material from skin and flush with water for at least 20 minutes. Use soap if available or follow by washing with soap and water. Cover any resulting wounds with sterile dressing. Do not reuse contaminated clothing without laundering. Get medical attention.
Inhalation	Move exposed person to fresh air. Keep person warm and at rest. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. Get medical attention if adverse health effects persist or are severe. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.
Ingestion	Wash out mouth with water. Remove dentures if any. Move exposed person to fresh air. Keep person warm and at rest. If material has been swallowed and the exposed person is conscious, give 1-2 glasses of water to drink. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs; Give fluids again. Get medical attention immediately. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.
Notes to physician	Treat symptomatically. Application of corticosteroid cream has been effective in treating skin irritation.

5. Fire-fighting measures

Flammability properties of the product	Flash Point: >216°F (>102°C) Flash Point Method Used: ASTM D86 Flammable Limits in Air (Lower - % by volume): N/A Flammable Limits in Air (Upper - % by volume): N/A
<u>Extinguishing media</u>	
Suitable	Use Alcohol-Resistant Foam, Dry Chemical, Carbon Dioxide (CO2), Dry Sand
Not suitable	Use of water may result in the formation of very toxic aqueous solutions. Do not allow run-off from firefighting to enter drains or water courses.
Special exposure hazards	Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.
Hazardous combustion products	Irritating vapors, ammonia gas, nitrogen oxides, carbon monoxide, and carbon dioxide.
Unusual Fire and Explosion Hazards	Sealed, fire-exposed containers may build up dangerous pressure, potentially resulting in explosive rupture.

Special protective equipment for fire-fighters Fire-fighters should wear appropriate protective equipment. Wear self-contained breathing apparatus and complete personal protective equipment when entering confined areas where potential for exposure to vapors or products of combustion exists.

6. Accidental release measures

Personal precautions No action shall be taken involving any personal risk or without suitable training. Wear a properly fitted NIOSH/MSHA approved respirator whenever exposure to mist is likely to exceed acceptable limits. Put on appropriate personal protective equipment (see section 8).

Environmental precautions Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Spill Response Use the proper personal protection equipment. Shut off source of leak if it is safe to do so. Dike spill. Absorb with inert material and dispose of properly.

7. Handling and storage

Handling Put on appropriate personal protective equipment (see section 8). Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Avoid breathing vapor or mist. Avoid contact with eyes, skin, and clothing. Avoid tasting or swallowing. Keep container closed when not in use. Use with adequate ventilation. Wash thoroughly after handling.

Storage Store away from oxidizers. Do not store near acids. Keep product in the original container or an approved alternative made from a compatible material, kept tightly sealed when not in use, and stored in a dry, cool and well-ventilated location. Store in accordance with all local and government regulations. Store at room temperatures above 50°F (>10°C) to preserve product.

8. Exposure controls/personal protection

CAS Number	Chemical Identity	Exposure Limits				
		ACGIH		OSHA		NIOSH
		TWA	STEL	PEL	STEL	
1317-65-3	Calcium Carbonate (Total Dust) (Respirable Fraction)	N.E.	N.E.	15 mg/m ³ TWA 5 mg/m ³ TWA	N.E.	10 mg/m ³ TWA 5 mg/m ³ TWA
80-05-7	Phenol, 4,4'-(1-methylethylidene)bis-	N.E.	N.E.	N.E.	N.E.	N.E.
111-40-0	Diethylenetriamine (DETA)	1 ppm (8 hr.) 4.2 mg/m ³ (8 hr.)	N.E.	1 ppm (8 hr.) 4 mg/m ³ (8 hr.)	N.E.	1 ppm (10 hr.) 4 mg/m ³ (10 hr.)

Recommended monitoring procedures If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment.

Engineering measures	Use only with adequate ventilation. If user operations generate dust, fumes, gas, vapor or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.
Hygiene measures	Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are located in the work area.
Respiratory	Use a properly fitted, air-purifying or air-supplied respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.
Eyes	Chemical splash goggles and full face shield are recommended.
Skin	Impervious gloves made of Neoprene, Butyl Rubber or Nitrile Rubber should be used. Wear additional protective clothing to prevent skin contact. This may include aprons, chemical resistant boots, and chemical resistant suits. Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

9. Physical and chemical properties

Form	Thick, Viscous Liquid
Color	Black
pH	Alkaline (> 7)
Boiling point	Not determined
Freezing Point	Not determined
Specific gravity	1.21
Vapor pressure	< 5.17 mmHg at 70 °F (21 °C)
Odor threshold	Slight, ammonia-like odor
Solubility in water	Slightly soluble; Reacts slowly with water to form ammonia
Evaporation rate	<1 (Slower than Butyl Acetate)
Vapor density	>1 (Heavier than air)

10. Stability and reactivity

Stability	The product is stable. Under normal conditions of storage and use, hazardous polymerization will not occur.
Conditions to avoid	Sparks, open flames, and other sources of ignition. Product slowly corrodes copper, aluminum, zinc and galvanized surfaces CAUTION! N-Nitrosamines, many of which are known to be potent carcinogens, may be formed when the product comes in contact with nitrous acid, nitrites or atmospheres with high nitrous oxide concentrations.

Materials to avoid	<p>Reactive or incompatible with the following materials:</p> <p>Oxidizing agents. Reaction with peroxides may result in violent decomposition of peroxide, possibly creating an explosion. Sodium hypochlorite. Organic acids (i.e. acetic acid, citric acid etc.) and mineral acids. Nitrous acid and other nitrosating agents. Reactive metals (e.g. sodium, calcium, zinc etc.). Materials reactive with hydroxyl compounds. Heat and/or water and atmospheric moisture will affect product quality.</p>
Other hazards	Curing reaction may release significant heat when mixed with Part A.
Hazardous decomposition products	Decomposition products may include the following materials: Nitrogen Oxides, Nitric Acid, Ammonia, Carbon Dioxide; Carbon Monoxide, Nitrosamines.

11. Toxicological information

Acute toxicity

LD50 Oral	Rat	> 1,080 mg/kg
LD50 Dermal	Rabbit	> 1,090 mg/kg

Diethylenetriamine: LC50 InhalationRat > 0.07 to < 0.3 mg/L (4 Hour)

Carcinogenicity Classification

Quartz (CAS # 14808-60-7)	IARC	Monograph 68; Group 1 (Carcinogenic to humans)
	NTP	Known Human
	OSHA	Potential Carcinogen
	EU	May cause cancer if inhaled
Carbon Black (CAS # 1333-86-4)	IARC	Group 2B (Possibly carcinogenic to humans)
	NTP	Not listed
	OSHA	Not regulated as a carcinogen
	EU	Not classified

12. Ecological information

Component Aquatic Eco-toxicity

Diethylenetriamine (DETA)
(CAS # 111-40-0)

Fish
Acute LC50: 332 mg/L (96 Hours)

Daphnia
Acute EC50: 17 mg/L (48 Hours)

Environmental effects

No known significant effects or critical hazards. Not readily biodegradable. This product is not anticipated to bioaccumulate.

13. Disposal considerations

Waste disposal The generation of waste should be avoided or minimized wherever possible. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

14. Transport information

The data provided in this section is for information only and may not be specific to each package size or mode of transport. Apply the appropriate regulations to properly classify your shipment for transportation.

International transport regulations

Regulatory Information	UN/NA number	Proper shipping name	Classes/*PG	Reportable Quantity (RQ)
CFR	UN2735	Amines, liquid, corrosive, N.O.S. (Diethylenetriamine)	N/A	N/A
TDG	UN2735	Amines, liquid, corrosive, N.O.S. (Diethylenetriamine)	N/A	N/A
IMO/IMDG	UN2735	Amines, liquid, corrosive, N.O.S. (Diethylenetriamine)	N/A	N/A
IATA (Cargo)	UN2735	Amines, liquid, corrosive, N.O.S. (Diethylenetriamine)	N/A	N/A

*PG: Packing group

LIMITED QUANTITIES: When limited quantities of this product are offered for transportation, except by air, and packaged in proper combination packages with individual inner containers of less than 5.0 L (1.3 gallons) net capacity each, this product may ship as non-regulated. Placarding rules may still apply.

15. Regulatory information

US regulations

HCS Classification When used for its intended purpose, this material is classified as hazardous in accordance with OSHA 29CFR 1910.1200 Irritating material; Sensitizing material

U.S. Federal regulations	<p>SARA Title III, Section 311/312 Classification Immediate (Acute) health hazard</p> <p>SARA Title III, Section 313 - Supplier Notification This product contains the following toxic chemical(s) subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986, and Subpart C-Supplier Notification Requirement of 40 CFR Part 372.</p> <p>Phenol, 4, 4'-(1-methylethylidene)bis- (CAS # 80-05-7)</p> <p>SARA Section 302 Extremely Hazardous Substances None required.</p>
State regulations	<p>Massachusetts RTK Substances None</p> <p>New Jersey RTK Hazardous Substances Diethylenetriamine (CAS # 111-40-0) Phenol, 4, 4'-(1-methylethylidene) bis- (CAS # 80-05-7) Calcium Carbonate (CAS # 1317-65-3)</p> <p>Pennsylvania RTK Hazardous Substances Diethylenetriamine (CAS # 111-40-0) Phenol, 4, 4'-(1-methylethylidene)bis- (CAS # 80-05-7) Calcium Carbonate (Limestone) (CAS # 1317-65-3)</p> <p>California Prop. 65: WARNING: This product contains the following chemical(s) known to the State of California to cause cancer: None known</p> <p>California Prop. 65: WARNING: This product contains the following chemical(s) known to the State of California to be a reproductive toxin: None known</p>
<u>International regulations</u>	
Chemical inventories	<p>Europe inventory - All components are listed or exempted. Australia inventory (AICS) - All components are listed or exempted. Canada inventory - All components are listed or exempted. Japan inventory - Not on inventory. China inventory (IECSC) - All components are listed or exempted. Korea inventory - All components are listed or exempted. Philippines inventory (PICCS) - All components are listed or exempted. United States inventory (TSCA 8b) - All components are listed or exempted.</p>
WHMIS Hazard Classification	<p>Class D-2A: Very Toxic Material Causing Other Toxic Effects Class D-2B: Toxic Material Causing Other Toxic Effects Class E: Corrosive Material</p>

16. Other information

Hazardous Material Information System III (U.S.A.)	Health: 3 Flammability: 1 Physical hazards: 0 Personal Protection: X
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Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. HMIS® ratings are to be used with a fully implemented HMIS® program.

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