

MATERIAL SAFETY DATA SHEET

Technical Barrier Systems  
 151 Randall Street  
 Oakville, Ontario, Canada, L6J 1P5  
 (905) 842-9488

PRODUCT : EMBE Novalac Hardener



SECTION 01 : PRODUCT INFORMATION

Supplier Technical Barrier Systems Inc.  
 Product Identifier Novalac Hardener  
 TradeName EMBE Novalac Hardener  
 Prepared by R.K. Seaman  
 Preparation Date 1-Aug-06  
 Revision #  
 CEPA Status All substances listed on the Domestic Substance List (DSL)  
 Chemical Family Polyamide/amine mixture  
 Chemical Formula  
 Chemical Name  
 Material Use  
 Molecular Weight  
 T.D.G. Classification Hazardous  
 WHMIS Classification

SECTION 02 : HAZARDOUS INGREDIENTS

HAZARDOUS INGREDIENTS, %, EXPOSURE LEVELS, C.A.S. #, LD/50, ROUTE, SPECIES, LC/50, ROUTE, SPECIES

Ancamine 2280	80.4		1761-71-3	N/A		
			100-51-6			
Ancamine 2089	17.7	30-50	98-544	3250 mg/kg	rat/oral	N/A
		10-30	1477-65-0	920 mg/kg	rat/oral	N/A
		25-40	25620-58-0	910 mg/kg	rat/oral	N/A
Ancamine K-54	2.79		90-72-2	1200 mg/kg	rat/oral	N/A

SECTION 03 : PHYSICAL DATA

PHYSICAL STATE Liquid  
 ODOUR/APPEARANCE Ammonia, amber liquid  
 ODOUR THRESHOLD N/A  
 VAPOUR PRESSURE 0.70 mm Hg @ 21 C  
 VAPOUR DENSITY (AIR=1)  
 % VOLATILE:  
     BY VOLUME N/A  
     BY WEIGHT N/A  
 EVAPORATION RATE  
 BOILING POINT 222 C  
 FREEZING POINT  
 pH Alkaline  
 SPECIFIC GRAVITY 1.06  
 SOLUBILITY IN WATER (20C) Slight  
 COEFFICIENT WATER/OIL DIST. Not available

SECTION 04 : FIRE & EXPLOSION DATA

FLAMMABILITY Not under normal handling conditions  
 IF YES, UNDER WHAT CONDITIONS N/A  
 MEANS OF EXTINCTION In case of large fire use; water spray or alcohol foam. In case of small fire use; carbon dioxide, dry chemical, dry sand or limestone.  
 SPECIAL PROCEDURES Personnel in vicinity and downwind should be evacuated. Fire fighters should wear approved self contained breathing apparatus and full protective clothing.  
 FLASHPOINT AND METHOD 103.99 C (closed cup)  
 AUTO IGNITION TEMPERATURE N/A  
 T.D.G. FLAMMABILITY CLASS Not regulated  
 UPPER EXPLOSION LIMIT N/A  
 LOWER EXPLOSION LIMIT N/A



HAZARDOUS COMBUSTION PRODUCTS	May generate toxic or irritating combustion products. Amonia. Oxides of carbon (CO, CO2). Oxides of nitrogen
EXPLOSION DATA	
SENSITIVITY TO STATIC DISCHARGE	Take precautionary measures against static discharges.
SENSITIVITY TO IMPACT	Protect against physical damage
RATE OF BURNING	N/A
EXPLOSIVE POWER	N/A

## SECTION 05 : REACTIVITY DATA

CHEMICAL STABILITY	
STABLE?	Yes
CONDITIONS TO AVOID	N/A
COMPATIBILITY W/OTHER SUBSTANCES	
YES	
INCOMPATIBLE MATERIALS	Mineral acids (I.e. sulfuric, phosphoric, etc.). Alkalis (sodium or potassium hydroxide, etc.).Organic acids (I.e. acetic acid, critic acid etc.). Reducing agents, reactive metals (sodium, calcium, zinc, ect.).Sodium or calcium hypochlorite. Material reactive with hydroxyl compounds. Amine nitrates, nitrosating agents, oxidizing agents (i.e. percelorates, nitrates, etc.)
REACTIVITY UNDER WHAT CIRCUMSTANCES	Hazardous polymerization will not occur. Product slowly corrodes copper, aluminum, zinc and galvanized surfaces. Reactions with peroxides may result in violent decomposition of peroxide possibly creating an explosion. Caution! N-nitrosamines, many of which are known to be powerful carcinogens may be formed when the product comes in contact with nitrousacid, nitrites, or atmospheres with high concentrations of nitrous oxide. A reaction followed by a large heat release occurs when the product is mixed with acids. Heat generated may be sufficient to cause boiling, creating a splashing or splattering hazard.
HAZARDOUS PRODUCTS OF DECOMPOSITION	Irritating and toxic fumes at elevated temperatures. Ammonia when heated. Oxides of nitrogen, organic acid vapours, aldehyde, nitric acid, nitrosamines. The oxides of nitrogen gas, (except nitrous oxide)emitted on decomposition are highly toxic.Nitrogen oxides can reactwith water vapors to form corrosive nitric acids, oxides of carbon (CO, CO2)

## SECTION 06 : TOXICOLOGICAL PROPERTIES

ROUTE OF ENTRY	
SKIN CONTACT	Mild irritation and discomfort. May cause dryness, defatting, itching and/or rash
SKIN ABSORPTION	Product is absorbed through skin. May cause nausea, headache and general discomfort.
EYE CONTACT	Mild irritation
INHALATION, ACUTE	Inhalation of mists may cause irritation in the respiratory tract.
INHALATION, CHRONIC	Refer to inhalation acute
INGESTION	Harmful if swallowed
EFFECTS OF ACUTE EXPOSURE	Refer to route of entry
EFFECTS OF CHRONIC EXPOSURE	Mixed polycyclicalphatic amines was tested in rats for systemic effects in a subceronic (28 day). Oral study at doses ranging from 15 to 300mg/kg/day. Effects seen at 300 mg/kg/day included decreased survival, decreased body weight gain, increased liver, kidney and adrenal weights and histological changes in the liver, kidney , adrenals and spleen. The No-Observable-Effect-Level (NOEL) was 15 mg/kg/day. Adverse skin effects, (such as defatting, rash, irritation or corrosion). Dryness of nasal passages may be experienced when material is inhaled over long periods of time. Algeric reaction/sensitization may occur duringrepeatedorprolonged contact with the skin.
LD 50 OF MATERIAL, SPECIES & ROUTE	> 1200 mg/kg/rat/oral (estimate). (no deaths) >2800 mg/kg/rabbit/dermal/estimate



LC 50 OF MATERIAL, SPECIES & ROUTE	Refer to hazardous ingredients section
EXPOSURE LIMIT OF MATERIAL	Refer to hazardous ingredients section
IRRITATION CAUSED BY MATERIAL	Causes eye and skin irritation
SENSITIZING CAPABILITY OF MATERIAL	May cause skin sensitization
CARCINOGENICITY OF MATERIAL	This product contains no carcinogens in concentrations of 0.1% or greater
REPRODUCTIVE EFFECTS	A component has shown to cause reproductive/teratogenic effects in laboratory animals
SYNERGISTIC MATERIALS	None known

SECTION 07 : PREVENTIVE MATERIALS

<b>PROTECTIVE EQUIPMENT</b>	
GLOVES/TYPE	Impervious gloves, neoprene rubber gloves. Cuffed butyl rubber gloves, nitrile rubber gloves.
RESPIRATORY/TYPE	Not required under normal conditions in well ventilated workplace. Approved respirator if TLV is exceeded.
EYE/TYPE	Use chemical worker goggles
FOOTWEAR/TYPE	Impervious footwear
CLOTHING/TYPE	Long sleeved clothing
OTHER/TYPE	Emergency shower should be in close proximity, eyewash facility should be in close proximity
<b>ENGINEERING CONTROLS</b>	
SPILL/LEAK SPILL/LEAK	Stop the leak if possible. Reduce vapour spreading with a water spray. Eliminate all sources of ignition. Dike area to prevent spreading. If recovery is not feasible, admix with dry soil, sand or non-reactive absorbent. Transfer to containers by suction, preparatory for later disposal. Flush area with water spray. For large spills, recover using a vacuum truck. Wear protective clothing, boots, gloves and eye protection. Clean up personnel must be equipped with self-contained breathing apparatus and butyl rubber protective clothing.
<b>WASTE DISPOSAL, METHOD AND EQUIPMENT</b>	
	In accordance with Municipal, Provincial and Federal regulations
<b>HANDLING PROCEDURES AND EQUIPMENT</b>	
	Do not use sodium nitrite or other nitrosating agents in formulations containing this product. Cancer causing nitrosating agents could be formed. Wash thoroughly after handling and before eating, drinking, or using tobacco products. Avoid drinking or eating in use. Avoid contact with eyes, skin and clothing. Discard contaminated leather
<b>STORAGE NEEDS</b>	
	Keep away from acids. Keep away from oxidizers. Keep away from alkalis. Store in a cool and dry place. Store in a well ventilated area. Keep container closed when not in use. Store in steel containers, preferably located outdoors, above ground, and surrounded by dikes to contain spills or leaks. Do not store in iron or other reactive metal containers.
<b>SPECIAL SHIPPING INSTRUCTIONS</b>	
	Protect against physical damage. Shipments of this product must be in compliance with all applicable Federal, Provincial and International transportation regulations.

SECTION 08 : FIRST AID MEASURES

EYE CONTACT	Flush immediately with water for 15 minutes. Call a physician
SKIN CONTACT	Remove product and immediately flush with water for at least 15 minutes. Remove contaminated clothing and shoes. Wash before reuse. Call a physician. Discard contaminated leather articles.
INGESTION	Get medical attention immediately. Induce vomiting or remove stomach contents by gastric suction only as directed by medical personnel. Never give anything by mouth to an unconscious person.
INHALATION	Remove to fresh air. Contact a physician. If breathing has stopped or is labored give assisted respiration (I.e. mouth to mouth) Supplemental oxygen may be indicated. Prevent aspiration of vomit. Turn victims head to the side.
<b>NOTES TO PHYSICIAN</b>	

SECTION 09 : PREPARATION INFORMATION

PHONE # 888-537-2888

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