

MATERIAL SAFETY DATA SHEET

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This Material Safety Data Sheet (MSDS) has been prepared in compliance with the Federal OSHA Hazard Communication Standard 29 CFR 1910.1200.
This product is considered to be a hazardous chemical under that standard.

SECTION I - IDENTITY INFORMATION

Identity (Tradename): Powercrete DD Part B
Chemical/Family Name: Piperazine
Product Type: Epoxy hardener

Health	3
Flammability	1
Reactivity	0
Protective Equipment	X

SECTION II - HAZARDOUS INGREDIENTS

Specific Chemical Name:

1. N-aminoethylpiperazine

CAS Number: 140-31-8

Exposure Limits:

OSHA PEL: Not established

ACGIH TLV: Not established

Carcinogenicity: This chemical has not been reviewed for carcinogenicity by NTP, IARC, or OSHA.

SECTION III – PHYSICAL DATA

Appearance and Odor: Clear liquid, ammonia odor.

Boiling Point: 432°F (222°C).

Solubility in Water: Greater than 10%.

pH of Undiluted Product: 11.5.

Viscosity: 14 cSt at 68°F (20°C).

Percent VOC: 100%.

Specific Gravity (H₂O=1): 0.987.

Vapor Density (Air=1): 4.4.

Vapor Pressure: Less than 0.1 mm Hg at 68°F (20°C).

SECTION IV – FIRE AND EXPLOSION HAZARD DATA

Flash Point: 212°F (100°C) (PMCC).

Ignition Temperature: Not determined.

Flammable Limits (%): Lower: 1 Upper: Not determined

Fire Fighting Procedures – Special: Use water spray, dry chemical, foam, or carbon dioxide to extinguish flames. Water or foam may cause frothing. Use water to cool fire-exposed

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containers. If a leak or spill has not ignited, use water spray to disperse the vapors and to provide protection for persons attempting to stop the leak.

Unusual Fire and Explosion Hazards: None.

SECTION V – REACTIVITY DATA

This material reacts violently with acids. Do not add or formulate with nitrites. This product contains amines which can combine with nitrites or other nitrosating agents to form nitrosamines. Many nitrosamines have been found to cause cancer in laboratory animals.

Products Evolved when Subjected to Heat or Combustion: Toxic levels of ammonia, combustion products of nitrogen, carbon monoxide, carbon dioxide, irritating aldehydes and ketones may be formed on burning in a limited air supply.

Hazardous Polymerizations: Will not occur.

SECTION VI – HEALTH HAZARD DATA

Primary Routes of Exposure: Eyes, skin, inhalation.

Toxicological Information (Animal Toxicity Data):

Median Lethal Dose (LD50 LC50) (Species)

Oral: 2.15 g/kg (rat) slightly toxic.

Inhalation: Not determined.

Dermal: 0.9 g/kg (rabbit) moderately toxic.

Irritation Index (Species)

Dermal: (Draize) 8.0/8.0 (rabbit) corrosive.

Eyes: (Draize) Believed to be >80-110/110 (rabbit) extremely irritating.

Sensitization: (Buehler) Negative – skin (guinea pig).

Medical Conditions Aggravated by Exposure: Skin contact may aggravate an existing dermatitis (skin condition). Overexposure to vapor, dust, or mist may aggravate existing respiratory conditions, such as asthma, bronchitis, and inflammatory or fibrotic respiratory disease.

Overexposure Effects (Acute):

Eyes: Causes irritation, experienced as pain, with excess blinking and tear production, and seen as extreme redness and swelling of the eye and chemical burns of the eye. Severe eye damage may cause blindness.

Skin: Prolonged or widespread skin contact may result in the absorption of potentially harmful amounts of material. Causes severe irritation with pain, severe excess redness, and swelling with chemical burns, blister formation, and possible tissue destruction.

Inhalation: Vapors or mist are irritating and cause nasal discharge, coughing, and discomfort or pain in eyes, nose, throat, and chest. Severe overexposure may result in difficulty breathing, headache, nausea, vomiting, and drowsiness. Prolonged or repeated overexposure may result in lung damage. Prolonged or repeated overexposure may result in the absorption of potentially harmful amounts of material.

Ingestion: Causes burning of mouth, throat, and stomach with abdominal and chest pain, nausea, vomiting, diarrhea, thirst, weakness, and collapse. Aspiration may occur during swallowing or vomiting, resulting in lung damage.

Sensitization Properties: Unknown.

Overexposure Effects (Chronic): Repeated skin contact may cause a persistent irritation or dermatitis. Repeated inhalation may cause lung damage.

Other Remarks: This product contains one or more amines which may produce temporary and

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reversible hazy or blurred vision. Symptoms disappear when exposure is terminated.

Emergency and First Aid Procedures:

Eyes: Immediately flush eyes with large amounts of running water for at least 15 minutes. Hold eyelids apart while flushing to rinse entire surface of eye and lids with water. Get immediate medical attention. Continue flushing with water for an additional 15 minutes if medical attention is not immediately available.

Skin: Immediately remove contaminated clothing and shoes. Under a safety shower, flush skin with large amounts of running water for at least 15 minutes. Do not attempt to neutralize with chemical agents. Get immediate medical attention. Dry clean or launder clothing soaked or soiled with this material before reuse. Dry cleaning of contaminated clothing may be more effective than normal laundering. Inform individuals responsible for the cleaning of potential hazards associated with handling contaminated clothing. Destroy non-resistant footwear.

Ingestion: If patient is conscious and can swallow, give two glasses of water (16 oz). Do not induce vomiting. This material is corrosive. Get immediate medical attention. Never give anything by mouth to an unconscious or convulsing person.

Inhalation: Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, or cyanosis (blue discoloration of skin or lips) is noted, qualified personnel may administer oxygen. Get immediate medical attention.

Other: Swallowing may result in severe ulceration, inflammation, and possible perforation of the upper alimentary tract, with hemorrhage and fluid loss. Aspiration of this product during induced emesis can result in severe lung injury. Evacuation of stomach contents should be done by means least likely to cause aspiration, such as gastric lavage after endotracheal intubation. Contact a Poison Control Center for additional treatment information.

SECTION VII – SPILL OR LEAK PROCEDURES

Spill Procedures: Ventilate area. Avoid breathing vapor. Use self-contained breathing apparatus or supplied air for large spills or confined areas. Contain spill if possible. Wipe up or absorb with suitable material and shovel up. Prevent entry into sewers and waterways. Avoid contact with skin, eyes, or clothing.

Waste Disposal Methods: Polymerize in bucket. Add 100 parts of Powercrete DD Part A to each 6 parts of Powercrete DD Part B by weight and thoroughly mix. Set outdoors until the mixture is set up and cooled down, dispose in accordance with Federal, State, and local regulations.

This product has been evaluated for RCRA characteristics and does not meet the criteria of a hazardous waste if discarded in its purchased form. Under RCRA, it is the responsibility of the user of the product to determine at the time of disposal, whether the product meets RCRA criteria for hazardous waste. This is because product uses, transformations, mixtures, processes, etc may render the resulting materials hazardous.

SECTION VIII – SPECIAL PROTECTION INFORMATION

Ventilation: Local exhaust ventilation recommended if generating vapor, dust, or mist. If exhaust ventilation is not available or inadequate, use MSHA or NIOSH approved respirator as appropriate.

Skin Protection: Protective clothing such as uniforms, coveralls, or lab coats must be worn. Launder or dry clean when soiled. Gloves resistant to chemicals and petroleum distillates



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required. When handling large quantities, impervious suits, gloves, and rubber boots must be worn.

Eye Protection: Avoid eye contact. Wear splash-proof chemical goggles.

Respiratory Protection: Airborne concentrations should be kept to lowest levels possible. If vapor, mist, or dust is generated, use respirator approved by MSHA or NIOSH as appropriate.

Supplied air respiratory protection should be used for cleaning large spills or upon entry into tanks, vessels, or other confined spaces.

SECTION IX – SPECIAL PRECAUTIONS

Emergency Overview: **WARNING!**

Corrosive to eyes and skin.

May cause blindness.

May cause respiratory tract irritation.

Can cause lung injury if swallowed and aspirated.

Do not add nitrites.

May form suspected cancer-causing nitrosamines.

Store in tightly closed containers in dry area.

Use only with adequate ventilation.

Individuals should wash thoroughly after handling.

FOR INDUSTRIAL USE ONLY.

Precautions to be Taken in Handling and Storage: Minimum feasible handling temperatures should be maintained. Eye wash and safety shower should be available nearby when this product is handled or used. Periods of exposure to high temperatures should be minimized. Water contamination should be avoided.

SECTION X – REGULATORY INFORMATION

TRANSPORTATION:

DOT: Proper Shipping Name: N-aminoethylpiperazine

Hazard Class: 8

Identification Number: UN 2815

Packing Group: III

Label Required: Corrosive

IMDG, ICAO, TDG:

Proper Shipping Name: N-aminoethylpiperazine

Hazard Class: 8

Identification Number: UN 2815

Label Required: Corrosive

FEDERAL REGULATIONS:

SARA Title III:

Section 302/304 Extremely Hazardous Substance: None

Section 311 Hazardous Categorization: Acute

Section 313 Toxic Chemicals: None

CERCLA 102(a)/DOT Hazardous Substance: None



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States Right-to-Know Regulations:

N-aminoethylpiperazine CT, FL, MA, NJ, PA

California Prop. 65: None.

INTERNATIONAL REGULATIONS:

TSCA Inventory Status: This product, or its components, are listed on or are exempt from the Toxic Substance Control Act (TSCA) Chemical Substance Inventory.

WHMIS Classification: Class D, Div 1, Subdiv B: Toxic, Class E: Corrosive.

Canadian Inventory Status: This product, or its components, are listed on or are exempt from the Canadian Domestic Substance List (DSL).

EINECS Inventory Status: This product, or its components, are listed on or are exempt from the European Inventory of Existing Chemical Substances (EINECS) or the European List of Notified Chemical Substances (ELINCS).

Australian Inventory Status: This product, or its components, are listed on or are exempt from the Australian Inventory of Chemical Substances (AICS).

Japan Inventory Status: This product, or its components, are listed on or are exempt from the Japan Ministry of International Trade and Industry (MITI) Inventory.

SECTION XI – ENVIRONMENTAL INFORMATION

Aquatic Toxicity: Not determined.

Mobility: Not determined.

Persistence and Biodegradability: Not determined.

Potential to Bioaccumulate: Not determined.

Remarks: None.

The information and recommendations contained herein are based upon data believed to be correct. However, no guarantee or warranty of any kind expressed or implied is made with respect to the information contained herein.