



1. Product and Company Identification

Material name	COMBAT NuMetal-B	
Version #	02	
Revision date	01-01-2014	
CAS #	Mixture	
Manufacturer	Refractory Anchors, Inc. 9836 S. 219th E. Ave. Broken Arrow, OK 74014 USA 800-331-3270 www.rai-1.com sales@rai-1.com CHEMTREC: 1-800-424-9300 8:00 am - 5:00 pm	Matrix Solutions, Inc. 9836 S. 219th E. Ave. Broken Arrow, OK 74014 USA 800-331-3270 www.endcorrosion.com sales@endcorrosion.com CHEMTREC: 1-800-424-9300 8:00 am - 5:00 pm

2. Hazards Identification

Emergency overview	DANGER Corrosive. Causes skin and eye burns. Cancer hazard. Prolonged exposure may cause chronic effects.
OSHA regulatory status	This product is considered hazardous under 29 CFR 1910.1200 (Hazard Communication).
Potential health effects	
Routes of exposure	Inhalation. Ingestion. Skin contact. Eye contact.
Eyes	Causes eye burns. Risk of serious damage to eyes. Do not get this material in contact with eyes.
Skin	Causes skin burns. Do not get this material in contact with skin.
Inhalation	Causes burns. May be irritating. May cause cancer by inhalation. Prolonged inhalation may be harmful. Do not breathe dust/fume/gas/mist/vapors/spray.
Ingestion	Components of the product may be absorbed into the body by ingestion. Ingestion may produce burns to the lips, oral cavity, upper airway, esophagus and possibly the digestive tract. Do not ingest.
Target organs	Eyes. Liver. RESPIRATORY SYSTEM. Skin. Kidneys.
Chronic effects	Edema. Jaundice. Liver injury may occur. Kidney injury may occur.
Signs and symptoms	Edema. Liver enlargement. Jaundice. Proteinuria. Irritation of nose and throat. Irritation of eyes and mucous membranes.
Potential environmental effects	Components of this product are hazardous to aquatic life. May cause long-term adverse effects in the environment.

3. Composition / Information on Ingredients

Hazardous components	CAS #	Percent
PHENOL	108-95-2	0 - 10
TRIENTINE	112-24-3	0 - 10
BENZYL ALCOHOL	100-51-6	0 - 10
QUARTZ	14808-60-7	10 - 20
Non-hazardous components	CAS #	Percent
PROPRIETARY INGREDIENTS	N/A	< 1
4,4'-METHYLENEBIS(CYCLOHEXYLAMINE)	1761-71-3	0 - 10



MIXED CYCLOALIPHATIC AMINES	Mixture	0 - 10
Polyamide Resin	Mixture	5 - 20
FORMALDEHYDE, POLYMER WITH N1,N2-BIS(2-AMINOETHYL)-1,2-ETHANEDIAMINE AND PHENOL	32610-77-8	5 - 20
MINERAL FILLER	Mixture	30 - 50

4. First Aid Measures

First aid procedures

- Eye contact** Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention immediately.
- Skin contact** Remove and isolate contaminated clothing and shoes. Immediately flush skin with plenty of water. Get medical attention immediately. For minor skin contact, avoid spreading material on unaffected skin. Wash clothing separately before reuse.
- Inhalation** Move to fresh air. Oxygen or artificial respiration if needed. Do not use mouth-to-mouth method if victim inhaled the substance. Induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Get medical attention immediately.
- Ingestion** Rinse mouth thoroughly. Never give anything by mouth to a victim who is unconscious or is having convulsions. Do not induce vomiting without advice from poison control center. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs. Do not use mouth-to-mouth method if victim ingested the substance. Induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.

Notes to physician In case of shortness of breath, give oxygen. Keep victim warm. Keep victim under observation. Symptoms may be delayed.

General advice Immediate medical attention is required. In case of shortness of breath, give oxygen. Keep victim warm. Keep victim under observation. Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

5. Fire Fighting Measures

Flammable properties Not flammable by OSHA criteria. Not combustible by OSHA criteria.

Extinguishing media

Suitable extinguishing media Water. Alcohol foam. Carbon dioxide (CO2).

Specific methods In the event of fire, cool tanks with water spray. Use water spray to cool unopened containers.

6. Accidental Release Measures

Personal precautions Keep unnecessary personnel away. Keep upwind. Keep out of low areas. Keep people away from and upwind of spill/leak. Ventilate closed spaces before entering them. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing.

Environmental precautions Prevent further leakage or spillage if safe to do so. Do not contaminate water.

Methods for containment ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area). Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Prevent entry into waterways, sewer, basements or confined areas.

Methods for cleaning up Should not be released into the environment.

Large Spills: Dike far ahead of spill for later disposal. Use a non-combustible material like vermiculite, sand or earth to soak up the product and place into a container for later disposal.

Small Spills: Clean surface thoroughly to remove residual contamination. Following product recovery, flush area with water.

Never return spills in original containers for re-use. Soak up with inert absorbent material.



7. Handling and Storage

Handling

DO NOT handle, store or open near an open flame, sources of heat or sources of ignition. Protect material from direct sunlight. Do not get this material in contact with eyes. Do not get this material in contact with skin. Avoid breathing dust/fume/gas/mist/vapors/spray. Do not get this material on clothing. Wear personal protective equipment. Do not use in areas without adequate ventilation. Avoid prolonged exposure. Wash thoroughly after handling. Avoid release to the environment.

Storage

Store locked up. Keep away from heat, sparks and open flame. Store in a well-ventilated place. Keep container tightly closed. Keep away from food, drink and animal feedingstuffs. Keep out of the reach of children.

8. Exposure Controls / Personal Protection

Occupational exposure limits

ACGIH

Components	Type	Value	Form
PHENOL (108-95-2)	TWA	5.0000 ppm	
QUARTZ (14808-60-7)	TWA	0.0250 mg/m3	Respirable fraction.

U.S. - OSHA

Components	Type	Value	Form
PHENOL (108-95-2)	PEL	5.0000 ppm	
	TWA	19.0000 mg/m3	
QUARTZ (14808-60-7)	TWA	19.0000 mg/m3	
		5.0000 ppm	
		2.4000 mppcf	Respirable.
		0.3000 mg/m3	Total dust.
		0.1000 mg/m3	Respirable.

Engineering controls

Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level.

Personal protective equipment

Eye / face protection

Do not get in eyes. Chemical goggles are recommended.

Skin protection

Do not get this material in contact with skin. Do not get this material on clothing. Wear chemical protective equipment that is specifically recommended by the manufacturer. It may provide little or no thermal protection. Structural firefighters protective clothing provides limited protection in fire situations ONLY; it is not effective in spill situations. Chemical resistant gloves.

Respiratory protection

Avoid breathing dust/fume/gas/mist/vapors/spray. If ventilation is not sufficient to effectively prevent buildup of aerosols or vapors, appropriate NIOSH/MSHA respiratory protection must be provided.

General hygiene considerations

Do not get in eyes. Do not get this material in contact with skin. Do not get this material on clothing. When using, do not eat, drink or smoke. Keep away from food and drink. Handle in accordance with good industrial hygiene and safety practice.

9. Physical & Chemical Properties

Appearance	Liquid.
Color	Golden to Light Amber
Odor	Ammoniacal. Amine-like.
Odor threshold	Not available.
Physical state	Liquid.
Form	Liquid.
pH	Alkaline
Melting point	Not available.
Freezing point	Not available.
Boiling point	Not available.
Flash point	Not available.



Evaporation rate	Not available.
Flammability limits in air, upper, % by volume	Not available.
Flammability limits in air, lower, % by volume	Not available.
Vapor pressure	Not available.
Vapor density	Not available.
Specific gravity	0.95
Relative density	Not available.
Solubility (water)	Partial
Partition coefficient (n-octanol/water)	Not available
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
VOC	Not available.

10. Chemical Stability & Reactivity Information

Chemical stability	Stable at normal conditions.
Conditions to avoid	Contact with incompatible materials. Keep away from sources of ignition - No smoking. High temperatures.
Incompatible materials	Powerful oxidizers. Peroxides. Fluorine. Chlorine. This product may react with strong acids. This product may react with strong alkalies.
Hazardous decomposition products	Irritants. Toxic gas. If product is burned hazardous gases such as oxides of carbon and nitrogen and various hydrocarbons may be produced.
Possibility of hazardous reactions	Hazardous polymerization does not occur.

11. Toxicological Information

Toxicological data

Product

EP3900 B (Mixture)

Test Results

Acute Dermal LD50 Rabbit: 13652 mg/kg estimated
Acute Dermal LD50 Rat: 16625 mg/kg estimated
Acute Inhalation LC100 Rat: 3859 mg/l estimated
Acute Inhalation LC50 Rat: 19297 mg/l estimated
Acute Oral LD50 Cat: 2485 mg/kg estimated
Acute Oral LD50 Dog: 12425 mg/kg estimated
Acute Oral LD50 Mouse: 5499 mg/kg estimated
Acute Oral LD50 Rabbit: 37437 mg/kg estimated
Acute Oral LD50 Rat: 5915 mg/kg estimated
Acute Other LD50 Guinea pig: 7719 mg/kg estimated
Acute Other LD50 Mouse: 1926 mg/kg estimated

Components

BENZYL ALCOHOL (100-51-6)

Test Results

Acute Dermal LD50 Guinea pig: <= 5 ml/kg
Acute Dermal LD50 Rabbit: 2000 mg/kg
Acute Inhalation LC100 Rat: 200 - 300 mg/l 8.00 Hours
Acute Inhalation LC50 Rat: 1000 mg/l 8.00 Hours
Acute Oral LD50 Mouse: 1580 mg/kg
Acute Oral LD50 Rabbit: 1940 mg/kg
Acute Oral LD50 Rat: 1230 - 3100 mg/kg
Acute Other LD50 Guinea pig: >= 400 mg/kg
Acute Other LD50 Mouse: 324 mg/kg



Components

BENZYL ALCOHOL (100-51-6)

PHENOL (108-95-2)

Test Results

Acute Other LD50 Mouse: <= 0.499999 ml/kg
Acute Other LD50 Rat: 53 mg/kg
Acute Dermal LD50 Rabbit: 850 mg/kg
Acute Dermal LD50 Rat: 669 mg/kg
Acute Oral LD50 Cat: 100 mg/kg
Acute Oral LD50 Dog: 500 mg/kg
Acute Oral LD50 Mouse: 270 mg/kg
Acute Oral LD50 Rat: 317 mg/kg
Acute Other LD50 Mouse: 112 mg/kg

* Estimates for product may be based on additional component data not shown.

Sensitization

US ACGIH Threshold Limit Values: Skin designation

PHENOL (CAS 108-95-2)

Can be absorbed through the skin.

Acute effects

Causes burns.

Local effects

Liver toxicity.

Chronic effects

Hazardous by OSHA criteria. Prolonged inhalation may be harmful. Repeated absorption may cause disorder of central nervous system, liver, kidneys and blood. Prolonged exposure may cause chronic effects.

Subchronic effects

Kidney injury may occur.

Carcinogenicity

ACGIH Carcinogens

PHENOL (CAS 108-95-2)

A4 Not classifiable as a human carcinogen.

QUARTZ (CAS 14808-60-7)

A2 Suspected human carcinogen.

IARC Monographs. Overall Evaluation of Carcinogenicity

PHENOL (CAS 108-95-2)

3 Not classifiable as to carcinogenicity to humans.

QUARTZ (CAS 14808-60-7)

1 Carcinogenic to humans.

US NTP Report on Carcinogens: Known carcinogen

QUARTZ (CAS 14808-60-7)

Known carcinogen.

Skin corrosion/irritation

Hazardous by OSHA criteria.

Further information

Symptoms may be delayed.

12. Ecological Information

Ecotoxicological data

Product

EP3900 B (Mixture)

Test Results

EC50 Daphnia: 869 mg/l 48.00 Hours estimated

LC50 Fish: 552 mg/l 96.00 Hours estimated

Components

BENZYL ALCOHOL (100-51-6)

Test Results

LC50 Bluegill (Lepomis macrochirus): 10 mg/l 96.00 Hours

PHENOL (108-95-2)

EC50 Water flea (Daphnia magna): 4.2 mg/l 48.00 Hours

LC50 Carp (Cyprinus carpio): 0.00175 mg/l 96.00 Hours

* Estimates for product may be based on additional component data not shown.

Ecotoxicity

Components of this product are hazardous to aquatic life.

Environmental effects

Harmful to aquatic organisms.

Persistence and degradability

Not available.



13. Disposal Considerations

Waste codes

US RCRA Hazardous Waste U List: Reference

PHENOL (CAS 108-95-2) U188

Disposal instructions

Dispose of this material and its container to hazardous or special waste collection point. Do not allow this material to drain into sewers/water supplies. Dispose in accordance with all applicable regulations.

14. Transport Information

DOT

Not regulated as dangerous goods.

15. Regulatory Information

US federal regulations

This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard 29 CFR 1910.1200.

US EPCRA (SARA Title III) Section 302 - Extremely Hazardous Spill: Reportable quantity

PHENOL (CAS 108-95-2) 1000 LBS

US EPCRA (SARA Title III) Section 302 - Extremely Hazardous Substance: Threshold planning quantity, lower value

PHENOL (CAS 108-95-2) 500 LBS

US EPCRA (SARA Title III) Section 302 - Extremely Hazardous Substance: Threshold planning quantity, upper value

PHENOL (CAS 108-95-2) 10000 LBS

US EPCRA (SARA Title III) Section 313 - Toxic Chemical: De minimis concentration

PHENOL (CAS 108-95-2) 1.0 %

US EPCRA (SARA Title III) Section 313 - Toxic Chemical: Listed substance

PHENOL (CAS 108-95-2) Listed.

CERCLA (Superfund) reportable quantity

PHENOL: 1000.0000

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories
 Immediate Hazard - Yes
 Delayed Hazard - Yes
 Fire Hazard - No
 Pressure Hazard - No
 Reactivity Hazard - No

Section 302 extremely hazardous substance No

Section 311 hazardous chemical Yes

Clean Water Act (CWA) Hazardous substance

Inventory status

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	No
Canada	Domestic Substances List (DSL)	No
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	No
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	No
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	No
Korea	Existing Chemicals List (ECL)	No
New Zealand	New Zealand Inventory	No
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	No



Country(s) or region	Inventory name	On inventory (yes/no)*
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	No

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

State regulations WARNING: This product contains a chemical known to the State of California to cause cancer.

US - California Proposition 65 - Carcinogens & Reproductive Toxicity (CRT): Listed substance

QUARTZ (CAS 14808-60-7)	Listed.
-------------------------	---------

US - California Proposition 65 - CRT: Listed date/Carcinogenic substance

QUARTZ (CAS 14808-60-7)	Listed: October 1, 1988 Carcinogenic.
-------------------------	---------------------------------------

US - New Jersey Community RTK (EHS Survey): Reportable threshold

PHENOL (CAS 108-95-2)	500 LBS
-----------------------	---------

US - Pennsylvania RTK - Hazardous Substances: Listed substance

BENZYL ALCOHOL (CAS 100-51-6)	Listed.
-------------------------------	---------

PHENOL (CAS 108-95-2)	Listed.
-----------------------	---------

QUARTZ (CAS 14808-60-7)	Listed.
-------------------------	---------

TRIENTINE (CAS 112-24-3)	Listed.
--------------------------	---------

16. Other Information

Further information HMIS® is a registered trade and service mark of the NPCA.

HMIS® ratings
Health: 2
Flammability: 1
Physical hazard: 0

NFPA ratings
Health: 2
Flammability: 1
Instability: 0

Issue date 01-12-2011