



1. Identification

Product identifier COMBAT DEFIANCE-A

Other means of identification Not available.

Recommended use Not available.

Recommended restrictions None known.

Manufacturer/Importer/Supplier/Distributor information

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. Hazard(s) identification

Physical hazards Flammable liquids

Category 3

Health hazards Not classified.

Environmental hazards Not classified.

OSHA defined hazards Not classified.

Label elements



Signal word Warning

Hazard statement Flammable liquid and vapor.

Prevention

Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Keep container tightly closed. Ground/bond container and receiving equipment. Use explosion-proof electrical/ventilating/lighting equipment. Use only non-sparking tools.

Response

In case of fire: Use CO2 for extinction.

Storage

Store in a well-ventilated place. Keep cool.

Disposal

Dispose of contents/container in accordance with local/regional/national/international regulations. See section 13 of this SDS for disposal instructions.

Hazard(s) not otherwise classified (HNOC) None known.

Supplemental information None.

3. Composition/information on ingredients

Mixtures

Chemical name	Common name and synonyms	CAS number	%
ASPHALT		8052-42-4	10 - 30
STODDARD SOLVENT		8052-41-3	1 - 10
QUARTZ		14808-60-7	< 1
Other components below reportable levels			72.4988950954



4. First-aid measures

Inhalation	Remove victim to fresh air and keep at rest in a position comfortable for breathing. 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 if symptoms occur.
Skin contact	Wash off with soap and plenty of water. For minor skin contact, avoid spreading material on unaffected skin. If skin irritation occurs: Get medical advice/attention.
Eye contact	Immediately flush eyes with plenty of water for at least 15 minutes. If a contact lens is present, DO NOT delay irrigation or attempt to remove the lens. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if irritation develops and persists.
Ingestion	Rinse mouth thoroughly. 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. Aspiration may cause pulmonary edema and pneumonitis. If ingestion of a large amount does occur, call a poison control center immediately.
Most important symptoms/effects, acute and delayed	Not available.
Indication of immediate medical attention and special treatment needed	In case of shortness of breath, give oxygen. Symptoms may be delayed.
General information	IF exposed or concerned: Get medical advice/attention. Wash contaminated clothing before reuse.

5. Fire-fighting measures

Suitable extinguishing media	Foam. Dry powder. Carbon dioxide (CO ₂). Extinguish with water fog.
Unsuitable extinguishing media	Do not use water jet as an extinguisher, as this will spread the fire.
Specific hazards arising from the chemical	Fire may produce irritating, corrosive and/or toxic gases.
Special protective equipment and precautions for firefighters	Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA. Structural firefighters protective clothing will only provide limited protection.
Fire-fighting equipment/instructions	In case of fire and/or explosion do not breathe fumes. Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA. Move containers from fire area if you can do so without risk. For massive fire in cargo area, use unmanned hose holder or monitor nozzles, if possible. If not, withdraw and let fire burn out. Some of these materials, if spilled, may evaporate leaving a flammable residue. Water runoff can cause environmental damage.
Specific methods	In the event of fire, cool tanks with water spray. Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures	Remove sources of ignition. Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Do not touch or walk through spilled material.
Methods and materials for containment and cleaning up	Dike far ahead of spill for later disposal. Cover with DRY earth, DRY sand, or other non-combustible material followed with plastic sheet to minimize spreading or contact with rain. Collect spillage. Prevent product from entering drains. Never return spills in original containers for re-use.
Environmental precautions	Prevent further leakage or spillage if safe to do so. Do not contaminate water.

7. Handling and storage

Precautions for safe handling	DO NOT handle, store or open near an open flame, sources of heat or sources of ignition. Protect material from direct sunlight. All equipment used when handling the product must be grounded. Do not breathe dust/fume/gas/mist/vapors/spray. Wear personal protective equipment. Do not use in areas without adequate ventilation. Avoid prolonged exposure. When using, do not eat, drink or smoke. Wash thoroughly after handling. Do not empty into drains.
Conditions for safe storage, including any incompatibilities	The pressure in sealed containers can increase under the influence of heat. Do not handle or store near an open flame, heat or other sources of ignition. This material can accumulate static charge which may cause spark and become an ignition source. Prevent electrostatic charge build-up by using common bonding and grounding techniques. Store in a well-ventilated place. Keep container tightly closed. Use care in handling/storage.



8. Exposure controls/personal protection

Occupational exposure limits

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Components	Type	Value
STODDARD SOLVENT (CAS 8052-41-3)	PEL	2900 mg/m ³ 500 ppm

US. OSHA Table Z-3 (29 CFR 1910.1000)

Components	Type	Value	Form
QUARTZ (CAS 14808-60-7)	TWA	0.3 mg/m ³ 0.1 mg/m ³ 2.4 mppcf	Total dust. Respirable. Respirable.

US. ACGIH Threshold Limit Values

Components	Type	Value	Form
ASPHALT (CAS 8052-42-4)	TWA	0.5 mg/m ³	Inhalable fraction.
QUARTZ (CAS 14808-60-7)	TWA	0.025 mg/m ³	Respirable fraction.
STODDARD SOLVENT (CAS 8052-41-3)	TWA	100 ppm	

US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value	Form
ASPHALT (CAS 8052-42-4)	Ceiling	5 mg/m ³	Fume.
QUARTZ (CAS 14808-60-7)	TWA	0.05 mg/m ³	Respirable dust.
STODDARD SOLVENT (CAS 8052-41-3)	Ceiling	1800 mg/m ³	
	TWA	350 mg/m ³	

Biological limit values

No biological exposure limits noted for the ingredient(s).

Appropriate engineering controls

Provide adequate ventilation, including appropriate local extraction, to ensure that the defined occupational exposure limit is not exceeded.

Individual protection measures, such as personal protective equipment

Eye/face protection

Chemical goggles are recommended.

Hand protection

Chemical resistant gloves are recommended. If contact with forearms is likely wear gauntlet style gloves.

Other

Wear appropriate chemical resistant clothing. Chemical resistant gloves.

Skin protection

Respiratory protection

When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.

Thermal hazards

Not available.

General hygiene considerations

When using do not smoke. When using, do not eat, drink or smoke. Avoid contact with eyes. Avoid contact with skin. Wash hands before breaks and immediately after handling the product. Handle in accordance with good industrial hygiene and safety practice.

9. Physical and chemical properties

Appearance	Black liquid
Physical state	Liquid.
Form	Semi-solid at ambient temperature
Color	Black
Odor	Not available.
Odor threshold	Not available.
pH	Not available.
Melting point/freezing point	Not available.
Initial boiling point and boiling range	300 - 360 °F (148.89 - 182.22 °C)
Flash point	100.0 - 140.0 °F (37.8 - 60.0 °C)
Evaporation rate	Not available.
Flammability (solid, gas)	Not available.



Upper/lower flammability or explosive limits

Flammability limit - lower (%)	Not available.
Flammability limit - upper (%)	Not available.
Explosive limit - lower (%)	Not available.
Explosive limit - upper (%)	Not available.

Vapor pressure Not available.

Vapor density Not available.

Relative density Not available.

Solubility(ies)

Solubility (water) Not available.

Partition coefficient (n-octanol/water) Not available.

Auto-ignition temperature Not available.

Decomposition temperature Not available.

Viscosity Not available.

Other information

Specific gravity 1 - 1.05

VOC (Weight %) 1.23 lb/gal

10. Stability and reactivity

Reactivity Not available.

Chemical stability Stable under normal temperature conditions.

Possibility of hazardous reactions Hazardous polymerization does not occur.

Conditions to avoid Heat, flames and sparks.

Incompatible materials Strong oxidizing agents.

Hazardous decomposition products Irritants. Toxic gas.

11. Toxicological information

Information on likely routes of exposure

Ingestion May cause discomfort if swallowed. However, ingestion is not likely to be a primary route of occupational exposure.

Inhalation May cause irritation to the respiratory system. However, this product does not currently meet the criteria for classification.

Skin contact Frequent or prolonged contact may defat and dry the skin, leading to discomfort and dermatitis

Eye contact Causes eye irritation.

Symptoms related to the physical, chemical and toxicological characteristics Not available.

Information on toxicological effects

Acute toxicity Not classified.

Product	Species	Test Results
BH5700 Component 1 (CAS Mixture)		
Acute		
<i>Oral</i>		
LD50	Mouse	35531.2383 mg/kg estimated
	Rabbit	1179.1063 ml/kg estimated
	Rat	29362.1797 mg/kg estimated
<i>Other</i>		
LD50	Rat	45238.0938 mg/kg estimated

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



Skin corrosion/irritation May cause defatting of the skin, but is neither an irritant nor a sensitizer.
Serious eye damage/eye irritation Not classified. May be irritating to eyes.
Respiratory or skin sensitization
Respiratory sensitization Not available.
Skin sensitization Irritating to skin.
Germ cell mutagenicity No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.
Carcinogenicity Risk of cancer cannot be excluded with prolonged exposure. This product contains crystalline silica. Silica is a known carcinogen; however in this encapsulated form the normal routes of exposure are unavailable.

IARC Monographs. Overall Evaluation of Carcinogenicity

ASPHALT (CAS 8052-42-4) 2B Possibly carcinogenic to humans.
 QUARTZ (CAS 14808-60-7) 1 Carcinogenic to humans.
 STODDARD SOLVENT (CAS 8052-41-3) 3 Not classifiable as to carcinogenicity to humans.

US. National Toxicology Program (NTP) Report on Carcinogens

QUARTZ (CAS 14808-60-7) Known To Be Human Carcinogen.

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

Reproductive toxicity Based on available data, the classification criteria are not met.
Specific target organ toxicity - single exposure Not available.
Specific target organ toxicity - repeated exposure Not available.
Aspiration hazard Not classified.
Chronic effects Not expected to be hazardous by OSHA criteria.
Further information Symptoms may be delayed.

12. Ecological information

Ecotoxicity Components of this product are hazardous to aquatic life. Accumulation in aquatic organisms is expected. Not expected to be harmful to aquatic organisms.

Product	Species	Test Results
BH5700 Component 1 (CAS Mixture) Fish LC50	Fish	2454.1477 mg/l, 96 hours estimated

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

Persistence and degradability Not available.
Bioaccumulative potential Not available.
Partition coefficient n-octanol / water (log Kow)
 STODDARD SOLVENT 3.16 - 7.15
Mobility in soil Not available.
Other adverse effects Not available.

13. Disposal considerations

Disposal instructions Contract with a disposal operator licensed by the Law on Disposal and Cleaning. Dispose of this material and its container to hazardous or special waste collection point. If discarded, this product is considered a RCRA ignitable waste, D001. Dispose of contents/container in accordance with local/regional/national/international regulations. Dispose in accordance with all applicable regulations.
Hazardous waste code D001: Waste Flammable material with a flash point <140 F
Waste from residues / unused products Dispose of in accordance with local regulations.
Contaminated packaging Offer rinsed packaging material to local recycling facilities.

14. Transport information

DOT
UN number UN1999
UN proper shipping name Tars, liquid
Transport hazard class(es)
Class Combustible Liquid



Subsidiary risk	-
Label(s)	3
Packing group	III
Environmental hazards	
Marine pollutant	No
Special precautions for user	If shipped by ground in quantities LESS than 119 gallons (450 L): Not regulated as a hazardous material.
Special provisions	B1, B13, IB3, T1, TP3
Packaging exceptions	150
Packaging non bulk	203
Packaging bulk	242

IATA

UN number	UN1999
UN proper shipping name	Tars, liquid
Transport hazard class(es)	
Class	3
Subsidiary risk	-
Packing group	III
Environmental hazards	No.
ERG Code	3L
Special precautions for user	Not available.
Other information	
Passenger and cargo aircraft	Allowed.
Cargo aircraft only	Allowed.

IMDG

UN number	UN1999
UN proper shipping name	Tars, liquid
Transport hazard class(es)	
Class	3
Subsidiary risk	-
Packing group	III
Environmental hazards	
Marine pollutant	No.
EmS	F-E, S-E
Special precautions for user	Not available.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code Not available.

DOT



IATA; IMDG





Further information

If shipped by ground in quantities LESS than 119 gallons (450 L): Not regulated as a hazardous material. If shipped by vessel in individual containers that are less than 7.9 gallons (30 L) each, then IMDG 2.3.2.5 exception applies: Not regulated as a hazardous material.

15. Regulatory information

US federal regulations

This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.
CERCLA/SARA Hazardous Substances - Not applicable.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

CERCLA Hazardous Substance List (40 CFR 302.4)

ASPHALT (CAS 8052-42-4) Listed.

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories

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

SARA 302 Extremely hazardous substance

Not listed.

SARA 311/312

No

Hazardous chemical

SARA 313 (TRI reporting)

Not regulated.

Other federal regulations

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Not regulated.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

Safe Drinking Water Act (SDWA)

Not regulated.

US state regulations

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

US. Massachusetts RTK - Substance List

ASPHALT (CAS 8052-42-4)
QUARTZ (CAS 14808-60-7)
STODDARD SOLVENT (CAS 8052-41-3)

US. New Jersey Worker and Community Right-to-Know Act

Not regulated.

US. Pennsylvania RTK - Hazardous Substances

ASPHALT (CAS 8052-42-4)
QUARTZ (CAS 14808-60-7)
STODDARD SOLVENT (CAS 8052-41-3)

US. Rhode Island RTK

Not regulated.

US. California Proposition 65

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

ASPHALT (CAS 8052-42-4) Listed: January 1, 1990
QUARTZ (CAS 14808-60-7) Listed: October 1, 1988

International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
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)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No



Country(s) or region	Inventory name	On inventory (yes/no)*
Japan	Inventory of Existing and New Chemical Substances (ENCS)	No
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	No
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	No
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)
A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. Other information, including date of preparation or last revision

Issue date	05-13-2015
Version #	01
Further information	HMIS® is a registered trade and service mark of the NPCA.
References	ACGIH EPA: AQUIRE database NLM: Hazardous Substances Data Base US. IARC Monographs on Occupational Exposures to Chemical Agents HSDB® - Hazardous Substances Data Bank IARC Monographs. Overall Evaluation of Carcinogenicity National Toxicology Program (NTP) Report on Carcinogens ACGIH Documentation of the Threshold Limit Values and Biological Exposure Indices
Disclaimer	The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.
Revision Information	Product and Company Identification: Synonyms Composition / Information on Ingredients: Ingredients Physical & Chemical Properties: Multiple Properties Transport Information: Material Transportation Information HazReg Data: International Inventories GHS: Classification