

1. Identification

Product identifier	NOVOCOATTM EP3700FG CERAMIC CARBIDE HARDENER
Other means of identification	None.
Recommended use	Industrial tile adhesive and grout
Recommended restrictions	None known.
Manufacturer/Importer/Supplier/Distributor information	
Company Name	Armor Limited, Inc.
Address	2410 US-15 South, Sumter, SC 29150
After hours telephone number	1-877-982-7667
Normal work hours telephone number	1-877-982-7667
Website	www.armor-inc.com
E-mail	customerservice@armor-inc.com
Emergency 24-hour telephone number	CHEMTREC North America: +1-800-424-9300, International: +1-703-527-3887
Information on operation hours	8:00 a.m. to 5:00 p.m.

2. Hazard(s) identification

Physical hazards	Not classified.	
Health hazards	Skin corrosion/irritation	Category 2
	Serious eye damage/eye irritation	Category 2
	Sensitization, skin	Category 1
	Reproductive toxicity	Category 1
Environmental hazards	Not classified.	
OSHA defined hazards	Not classified.	

Label elements



Signal word	Danger
Hazard statement	Causes skin irritation. May cause an allergic skin reaction. Causes serious eye irritation. May damage fertility or the unborn child.

Precautionary statement

Prevention	Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Avoid breathing dust/fume/gas/mist/vapors/spray. Wash thoroughly after handling. Contaminated work clothing must not be allowed out of the workplace. Wear protective gloves/protective clothing/eye protection/face protection/hearing protection.
Response	IF ON SKIN: Wash with plenty of water. If skin irritation or rash occurs: Get medical advice/attention. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention. If exposed or concerned: Get medical advice/attention. Specific treatment see Section 4 of this SDS. Take off contaminated clothing and wash before reuse.
Storage	Store locked up.
Disposal	Dispose of contents/container in accordance with local/regional/national/international regulations.
Hazard(s) not otherwise classified (HNOC)	None known.

3. Composition/information on ingredients

Mixtures

Chemical name	Common name and synonyms	CAS number	%
QUARTZ		14808-60-7	1 - 20
1,3-BENZENEDIMETHANAMINE		1477-55-0	1 - 10
BISPHENOL A		80-05-7	1 - 10
PHENOL, 4-NONYL-, BRANCHED		84852-15-3	1 - 10
TRIETHYLENETETRAMINE		112-24-3	< 1
EPOXY RESIN		25068-38-6	< 0.5
Other components below reportable levels			82.504

*Designates that a specific chemical identity and/or percentage of composition has been withheld as a trade secret.

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. Call a physician or poison control center immediately.
Skin contact	Wash off immediately with soap and plenty of water. Remove contaminated clothing. Wash contaminated clothing before reuse. Get medical attention if irritation develops and persists.
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. Call a physician or poison control center immediately.
Ingestion	Rinse mouth. Do not induce vomiting. Never give anything by mouth to a victim who is unconscious or is having convulsions. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs. Call a physician or poison control center immediately.
Most important symptoms/effects, acute and delayed	Irritation of eyes. Skin irritation. Rash. Dermatitis. May cause an allergic skin reaction. May cause respiratory irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision.
Indication of immediate medical attention and special treatment needed	Provide general supportive measures and treat symptomatically. Keep victim under observation. In case of shortness of breath, give oxygen. Symptoms may be delayed.
General information	Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Show this safety data sheet to the doctor in attendance.

5. Fire-fighting measures

Suitable extinguishing media	Water fog. Foam. Dry chemical powder. Carbon dioxide (CO2).
Unsuitable extinguishing media	Do not use water jet as an extinguisher, as this will spread the fire.
Specific hazards arising from the chemical	During fire, gases hazardous to health may be formed.
Special protective equipment and precautions for firefighters	Self-contained breathing apparatus and full protective clothing must be worn in case of fire.
Fire fighting equipment/instructions	Move containers from fire area if you can do so without risk.
Specific methods	Use standard firefighting procedures and consider the hazards of other involved materials.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures	Keep unnecessary personnel away. Wear appropriate protective equipment and clothing during clean-up. Avoid inhalation of vapors and spray mists. Use a NIOSH/MSHA approved respirator if there is a risk of exposure to dust/fume at levels exceeding the exposure limits. Ensure adequate ventilation. Do not touch or walk through spilled material. For personal protection, see section 8 of the SDS.
---	---

Methods and materials for containment and cleaning up

Stop leak if you can do so without risk. Stop the flow of material, if this is without risk. This material is classified as a water pollutant under the Clean Water Act and should be prevented from contaminating soil or from entering sewage and drainage systems which lead to waterways.

Large Spills: Wet down with water and dike for later disposal. Cover with plastic sheet to prevent spreading. Absorb in vermiculite, dry sand or earth and place into containers. Shovel the material into waste container. Following product recovery, flush area with water.

Small Spills: Sweep up or vacuum up spillage and collect in suitable container for disposal. Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination.

Never return spills to original containers for re-use. Put material in suitable, covered, labeled containers. For waste disposal, see section 13 of the SDS.

Environmental precautions

Avoid discharge into drains, water courses or onto the ground.

7. Handling and storage

Precautions for safe handling

Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not get in eyes, on skin, or on clothing. Provide adequate ventilation. Avoid breathing dust/fume/gas/mist/vapors/spray. Avoid prolonged exposure. Should be handled in closed systems, if possible. Use personal protective equipment as required. Observe good industrial hygiene practices.

Conditions for safe storage, including any incompatibilities

Store locked up. Store away from incompatible materials (see Section 10 of the SDS).

8. Exposure controls/personal protection

Occupational exposure limits

The following constituents are the only constituents of the product which have a PEL, TLV or other recommended exposure limit. At this time, the other constituents have no known exposure limits.

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

Components	Type	Value	Form
QUARTZ (CAS 14808-60-7)	PEL	0.05 mg/m3	Respirable dust.

US. OSHA Table Z-3 Permissible Exposure Limits (PEL) for Mineral Dusts (29 CFR 1910.1000)

Components	Type	Value	Form
QUARTZ (CAS 14808-60-7)	TWA	0.1 mg/m3	Respirable.
		2.4 mppcf	Respirable.

US. ACGIH Threshold Limit Values (TLV)

Components	Type	Value	Form
1,3-BENZENEDIMETHANAMINE (CAS 1477-55-0)	Ceiling	0.018 ppm	
QUARTZ (CAS 14808-60-7)	TWA	0.025 mg/m3	Respirable fraction.

NIOSH. Immediately Dangerous to Life or Health (IDLH) Values, as amended

Components	Type	Value
QUARTZ (CAS 14808-60-7)	IDLH	50 mg/m3

US. NIOSH: Pocket Guide to Chemical Hazards Recommended Exposure Limits (REL)

Components	Type	Value	Form
1,3-BENZENEDIMETHANAMINE (CAS 1477-55-0)	Ceiling	0.1 mg/m3	
QUARTZ (CAS 14808-60-7)	TWA	0.05 mg/m3	Respirable dust.

US. OARS. Workplace Environmental Exposure Level (WEEL) Guide

Components	Type	Value
TRIETHYLENETETRAMINE (CAS 112-24-3)	TWA	6 mg/m3
		1 ppm

Biological limit values

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

Exposure guidelines

Occupational Exposure Limits are not relevant to the current physical form of the product.

US - California OELs: Skin designation

1,3-BENZENEDIMETHANAMINE (CAS 1477-55-0) Can be absorbed through the skin.

US - Tennessee OELs: Skin designation

1,3-BENZENEDIMETHANAMINE (CAS 1477-55-0) Can be absorbed through the skin.

US ACGIH Threshold Limit Values: Skin designation

1,3-BENZENEDIMETHANAMINE (CAS 1477-55-0) Danger of cutaneous absorption

US NIOSH Pocket Guide to Chemical Hazards: Skin designation

1,3-BENZENEDIMETHANAMINE (CAS 1477-55-0) Can be absorbed through the skin.

US WEEL Guides: Skin designation

TRIETHYLENETETRAMINE (CAS 112-24-3) Can be absorbed through the skin.

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 Wear safety glasses with side shields (or goggles) and a face shield.

Skin protection

Hand protection Wear appropriate chemical resistant gloves.

Other Wear appropriate chemical resistant clothing. Use of an impervious apron is recommended.

Respiratory protection In case of insufficient ventilation, wear suitable respiratory equipment.

Thermal hazards Wear appropriate thermal protective clothing, when necessary.

General hygiene considerations Observe any medical surveillance requirements. Do not get in eyes, on skin, on clothing. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Contaminated work clothing should not be allowed out of the workplace.

9. Physical and chemical properties

Appearance Highly filled paste.

Physical state Paste.

Form Solid.

Color Black

Odor Amine-like.

Odor threshold Not available.

pH Not available.

Melting point/freezing point Not available.

Initial boiling point and boiling range Not available.

Flash point >200.0 °F (>93.3 °C)

Evaporation rate Not available.

Flammability (solid, gas) Not available.

Upper/lower flammability or explosive limits

Explosive limit - lower (%) Not available.

Explosive limit - upper (%) Not available.

Vapor pressure Not available.

Vapor density Not available.

Relative density 2.4 g/ml @20°C

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 2.4 @20°C

10. Stability and reactivity

Reactivity The product is stable and non-reactive under normal conditions of use, storage and transport.
Chemical stability Material is stable under normal conditions.
Possibility of hazardous reactions Hazardous polymerization does not occur.
Conditions to avoid Avoid temperatures exceeding the flash point. Contact with incompatible materials.
Incompatible materials Acids. Strong oxidizing agents. Powerful oxidizers. Chlorine.
Hazardous decomposition products No hazardous decomposition products are known.

11. Toxicological information

Information on likely routes of exposure

Inhalation Prolonged inhalation may be harmful.
Skin contact Irritating to skin. May cause an allergic skin reaction.
Eye contact Causes serious eye irritation.
Ingestion Expected to be a low ingestion hazard. However, ingestion is not likely to be a primary route of occupational exposure.

Symptoms related to the physical, chemical and toxicological characteristics Causes serious eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. May cause an allergic skin reaction. Skin irritation.

Information on toxicological effects

Acute toxicity

Product	Species	Test Results
NOVOCOAT™ EP3700FG CERAMIC CARBIDE HARDENER		
Acute		
Dermal		
LD50	Rabbit	32589 mg/kg
Inhalation		
LC50	Rat	26316 mg/l, 8 Hours
Oral		
LD50	Rat	16727 mg/kg

Components	Species	Test Results
PHENOL, 4-NONYL-, BRANCHED (CAS 84852-15-3)		
Acute		
Dermal		
LD50	Rabbit	2140 mg/kg
Oral		
LD50	Rat	1600 mg/kg

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

Skin corrosion/irritation Irritating to skin.
Serious eye damage/eye irritation Irritating to eyes.

Respiratory or skin sensitization

Respiratory sensitization Not a respiratory sensitizer.
Skin sensitization May cause an allergic skin reaction.

Germ cell mutagenicity Not available.

Carcinogenicity 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

QUARTZ (CAS 14808-60-7) 1 Carcinogenic to humans.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053)

QUARTZ (CAS 14808-60-7)

Cancer

US. National Toxicology Program (NTP) Report on Carcinogens

QUARTZ (CAS 14808-60-7)

Known To Be Human Carcinogen.

Reproductive toxicity May damage fertility or the unborn child.**Specific target organ toxicity
- single exposure** Not classified.**Specific target organ toxicity
- repeated exposure** Not classified.**Aspiration hazard** Not an aspiration hazard.**Chronic effects** Prolonged inhalation may be harmful. Prolonged exposure may cause chronic effects.**12. Ecological information****Ecotoxicity** The product contains a substance which is toxic to aquatic organisms.

Product		Species	Test Results
NOVOCOAT™ EP3700FG CERAMIC CARBIDE HARDENER			
Aquatic			
Crustacea	EC50	Daphnia	1.5705 mg/l, 48 hours
Fish	LC50	Fish	4.993 mg/l, 96 hours
<i>Acute</i>			
Crustacea	EC50	Daphnia	1.9716 mg/l, 48 hours estimated
Fish	LC50	Fish	0.8842 mg/l, 96 hours estimated
Components			
BISPHENOL A (CAS 80-05-7)			
Aquatic			
<i>Acute</i>			
Crustacea	EC50	Water flea (Daphnia magna)	>= 9.2 - <= 11.4 mg/l, 48 hours
Fish	LC50	Fathead minnow (Pimephales promelas)	>= 3.6 - <= 5.4 mg/l, 96 hours
PHENOL, 4-NONYL-, BRANCHED (CAS 84852-15-3)			
Aquatic			
<i>Acute</i>			
Crustacea	EC50	Clam (Mulinia lateralis)	0.0379 mg/l, 48 hours
Fish	LC50	Winter flounder (Pleuronectes americanus)	0.017 mg/l, 96 hours

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

Persistence and degradability No data is available on the degradability of this product.**Bioaccumulative potential** No data available.**Partition coefficient n-octanol / water (log Kow)**

BISPHENOL A	3.32
PHENOL, 4-NONYL-, BRANCHED	5.71

Mobility in soil No data available.**Other adverse effects** No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.**13. Disposal considerations****Disposal instructions** Dispose of this material and its container to hazardous or special waste collection point. Incinerate the material under controlled conditions in an approved incinerator. Dispose of contents/container in accordance with local/regional/national/international regulations. When this product as supplied is to be discarded as waste, it does not meet the definition of a RCRA waste under 40 CFR 261.**Local disposal regulations** Dispose in accordance with all applicable regulations.**Hazardous waste code** The waste code should be assigned in discussion between the user, the producer and the waste disposal company.

Waste from residues / unused products

Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).

Contaminated packaging

Empty containers should be taken to an approved waste handling site for recycling or disposal. Since emptied containers may retain product residue, follow label warnings even after container is emptied.

14. Transport information**DOT**

Not regulated as dangerous goods.

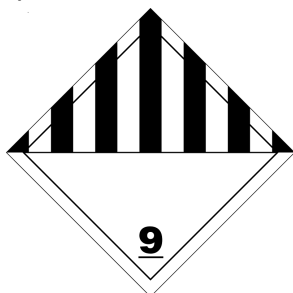
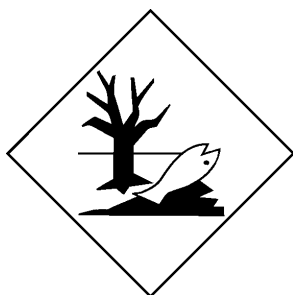
IATA

UN number	UN3077
UN proper shipping name	Environmentally hazardous substance, solid, n.o.s. (METAXYLENEDIAMINE)
Transport hazard class(es)	
Class	9
Subsidiary hazard	-
Packing group	III
Environmental hazards	YES
ERG Code	9L
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.
Other information	
Passenger and cargo aircraft	Allowed with restrictions.
Cargo aircraft only	Allowed with restrictions.

IMDG

UN number	UN3077
UN proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (METAXYLENEDIAMINE), MARINE POLLUTANT
Transport hazard class(es)	
Class	9
Subsidiary hazard	-
Packing group	III
Environmental hazards	
Marine pollutant	Yes
EmS	F-A, S-F
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.

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

IATA; IMDG**Marine pollutant**

15. Regulatory information

US federal regulationsAll components are on the U.S. EPA TSCA Inventory List.

Toxic Substances Control Act (TSCA)One or more components of the mixture are not on the TSCA 8(b) inventory or are designated "inactive".

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

PHENOL, 4-NONYL-, BRANCHED (CAS 84852-15-3)1.0 % One-Time Export Notification only.

TSCA Chemical Action Plans, Chemicals of Concern

BISPHENOL A (CAS 80-05-7)Bisphenol A Action Plan

PHENOL, 4-NONYL-, BRANCHED (CAS 84852-15-3)Nonylphenol (NP) and Nonylphenol Ethoxylates (NPEs) Action Plan

Toxic Substances Control Act (TSCA) Section 5(a)(2) Proposed Significant New Use Rules (SNURs) (40 CFR 721, Subpt E)

PHENOL, 4-NONYL-, BRANCHED (CAS 84852-15-3)721.10765

CERCLA Hazardous Substance List (40 CFR 302.4)

BISPHENOL A (CAS 80-05-7)Listed.

SARA 304 Emergency release notification

Not regulated.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053)

QUARTZ (CAS 14808-60-7)
Cancer
lung effects
immune system effects
kidney effects

Superfund Amendments and Reauthorization Act of 1986 (SARA)

SARA 302 Extremely hazardous substance

Not listed.

SARA 311/312 Hazardous chemicalYes

Classified hazard categories
Skin corrosion or irritation
Serious eye damage or eye irritation
Respiratory or skin sensitization
Reproductive toxicity

SARA 313 (TRI reporting)

Chemical name	CAS number	% by wt.
BISPHENOL A	80-05-7	1 - 10
PHENOL, 4-NONYL-, BRANCHED	84852-15-3	1 - 10

Other federal regulations

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

BISPHENOL A (CAS 80-05-7)

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

US. California. Candidate Chemicals List. Safer Consumer Products Regulations (Cal. Code Regs, tit. 22, 69502.3, subd. (a))

BISPHENOL A (CAS 80-05-7)
PHENOL, 4-NONYL-, BRANCHED (CAS 84852-15-3)
QUARTZ (CAS 14808-60-7)

California Proposition 65



WARNING: This product can expose you to chemicals including QUARTZ, which is known to the State of California to cause cancer, and BISPHENOL A, which is known to the State of California to cause birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

California Proposition 65 - CRT: Listed date/Carcinogenic substance

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

California Proposition 65 - CRT: Listed date/Developmental toxin

BISPHENOL A (CAS 80-05-7)Listed: December 18, 2020

International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Industrial Chemicals (AICIS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	Yes
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
Taiwan	Taiwan Chemical Substance Inventory (TCSI)	Yes
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 04-19-2023

Revision date 04-18-2024

Version # 04

NFPA ratings
Health: 2
Flammability: 1
Instability: 0

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. Armor cannot anticipate all conditions under which this information and its product, or the products of other manufacturers in combination with its product, may be used. It is the user's responsibility to ensure safe conditions for handling, storage and disposal of the product, and to assume liability for loss, injury, damage or expense due to improper use. The information in the sheet was written based on the best knowledge and experience currently available.

Revision information This document has undergone significant changes and should be reviewed in its entirety.