

Armorgard 541FST Resin


Date of compilation: 7/17/2025

Version: 1

SECTION 1: IDENTIFICATION

- 1.1 Product identifier:** Armorgard 541FST Resin
Other means of identification:
Non-applicable
- 1.2 Recommended use of the chemical and restrictions on use:**
Relevant uses (Professional users): Resin for making adhesives
Relevant uses (Industrial user): Resin for making adhesives
Uses advised against: All uses not specified in this section or in section 7.3
- 1.3 Name, U.S. address, and U.S. telephone number of the chemical manufacturer, importer, or other responsible party:**
Coppes Industries Inc
10500 N Commerce St
53092 Mequon - United States
Phone: 2622381700
orders@coppesindustries.com
www.coppesindustries.com
- 1.4 Emergency phone number:** 1-800-255-3924 Contract Number MIS5199399

SECTION 2: HAZARD(S) IDENTIFICATION

- 2.1 Classification of the substance or mixture:**
29 CFR 1910.1200:
Classification of the chemical in accordance with paragraph (d)(1)(i) of §1910.1200
Eye Irrit. 2A: Eye irritation, Category 2A, H319
Skin Irrit. 2: Skin irritation, Category 2, H315
Skin Sens. 1: Sensitisation, skin, Category 1, H317
- 2.2 Label elements:**
29 CFR 1910.1200:
Warning

Hazard statements:
Eye Irrit. 2A: H319 - Causes serious eye irritation.
Skin Irrit. 2: H315 - Causes skin irritation.
Skin Sens. 1: H317 - May cause an allergic skin reaction.
Precautionary statements:
P261: Avoid breathing vapours
P264: Wash thoroughly after use.
P280: Wear protective gloves/protective clothing/respiratory protection/eye protection/protective footwear.
P302+P352: IF ON SKIN: Wash with plenty of soap and water.
P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P333+P313: If skin irritation or rash occurs: Get medical advice/attention.
P337+P313: If eye irritation persists: Get medical advice/attention.
P501: Dispose of contents and / or containers in accordance with regulations on hazardous waste or packaging and packaging waste respectively.
Substances that contribute to the classification
reaction product: bisphenol-A-(epichlorhydrin), epoxy resin (number average molecular weight ≤ 700); Bisphenol F diglycidyl ether resin; Trade Secret
- 2.3 Hazards not otherwise classified (HNOC):**
Non-applicable

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

- CONTINUED ON NEXT PAGE -

Armorgard 541FST Resin

Date of compilation: 7/17/2025

Version: 1

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS (continued)

3.1 Substances:

Non-applicable

3.2 Mixtures:

Chemical description: Mixture composed of additives and epoxy polymers

Components:

Remaining components are non-hazardous and/or present at amounts below reportable limits. The specific chemical identity and/or exact percentage (concentration) of composition has been withheld as a trade secret in accordance with paragraph (i) of §1910.1200. Therefore, in accordance with Appendix D to § 1910.1200, the product contains:

Identification	Chemical name	Concentration
CAS: 25068-38-6	reaction product: bisphenol-A-(epichlorhydrin), epoxy resin (number average molecular weight ≤ 700)	25 - <50 %
CAS: 28064-14-4	Bisphenol F diglycidyl ether resin	25 - <50 %
CAS: Non-applicable	Trade Secret	10 - <25 %
CAS: 112945-52-5	Synthetic Silicon Dioxide	1 - <2.5 %

To obtain more information on the hazards of the substances consult sections 11, 12 and 16.

SECTION 4: FIRST-AID MEASURES

4.1 Description of necessary measures:

The symptoms resulting from intoxication can appear after exposure, therefore, in case of doubt, seek medical attention for direct exposure to the chemical product or persistent discomfort, showing the SDS of this product.

By inhalation:

This product is not classified as hazardous through inhalation, however, it is recommended in case of intoxication symptoms to remove the person affected from the area of exposure, provide clean air and keep at rest. Request medical attention if symptoms persist.

By skin contact:

Remove contaminated clothing and footwear, rinse skin or shower the person affected if appropriate with plenty of cold water and neutral soap. In serious cases see a doctor. If the product causes burns or freezing, clothing should not be removed as this could worsen the injury caused if it is stuck to the skin. If blisters form on the skin, these should never be burst as this will increase the risk of infection.

By eye contact:

Rinse eyes thoroughly with lukewarm water for at least 15 minutes. Do not allow the person affected to rub or close their eyes. If the injured person uses contact lenses, these should be removed unless they are stuck to the eyes, as this could cause further damage. In all cases, after cleaning, a doctor should be consulted as quickly as possible with the SDS of the product.

By ingestion/aspiration:

Do not induce vomiting, but if it does happen keep the head down to avoid aspiration. Keep the person affected at rest. Rinse out the mouth and throat, as they may have been affected during ingestion.

4.2 Most important symptoms/effects, acute and delayed:

Acute and delayed effects are indicated in sections 2 and 11.

4.3 Indication of immediate medical attention and special treatment needed, if necessary:

Non-applicable

SECTION 5: FIRE-FIGHTING MEASURES

5.1 Suitable (and unsuitable) extinguishing media:

Suitable extinguishing media:

Product is non-flammable under normal conditions of storage, handling and use. In the case of combustion as a result of improper handling, storage or use preferably use polyvalent powder extinguishers (ABC powder), in accordance with the Regulation on fire protection systems.

- CONTINUED ON NEXT PAGE -

Armorgard 541FST Resin

Date of compilation: 7/17/2025

Version: 1

SECTION 5: FIRE-FIGHTING MEASURES (continued)

Unsuitable extinguishing media:

Non-applicable

5.2 Specific hazards arising from the chemical:

As a result of combustion or thermal decomposition reactive sub-products are created that can become highly toxic and, consequently, can present a serious health risk.

5.3 Special protective equipment and precautions for fire-fighters:

Depending on the magnitude of the fire it may be necessary to use full protective clothing and Self Contained Breathing Apparatus. Minimum emergency facilities and equipment should be available (fire blankets, portable first aid kit,...)

Additional provisions:

As in any fire, prevent human exposure to fire, smoke, fumes or products of combustion. Only properly trained personnel should be involved in firefighting. Evacuate nonessential personnel from the fire area. Destroy any source of ignition. In case of fire, refrigerate the storage containers and tanks for products susceptible to inflammation. Avoid spillage of the products used to extinguish the fire into an aqueous medium.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures:

For non-emergency personnel:

Isolate leaks provided that there is no additional risk for the people performing this task. Personal protection equipment must be used against potential contact with the spilt product (See section 8). Evacuate the area and keep out those who do not have protection.

For emergency responders:

Wear protective equipment. Keep unprotected persons away. See section 8.

6.2 Environmental precautions:

This product is not classified as hazardous to the environment. Keep product away from drains, surface and underground water.

6.3 Methods and materials for containment and cleaning up:

For accidental releases in excess of reportable quantities (RQ) (Table 302.4), refer to 40 CFR 302 for detailed instructions concerning reporting requirements and notify the National Response Center (800) 424-8802.

Prevent the entrance of product in drains, sewers or watercourses. Absorb the spill using sand or inert absorbent and move it to a safe place. Do not absorb in sawdust or other combustible absorbents. Collect the product in appropriate containers and manage it according to current legislation.

Spillages in water or sea:

Small spillages:

Contain spillage using barriers or similar equipment. Use suitable absorbents for collection and treat the waste in accordance with current regulations.

Large spillages:

If possible, contain spillage in open water using barriers or similar equipment. If this is not possible, try to control its spread and collect the product with suitable mechanical means. Always consult experts before using dispersants and make sure you have the necessary approvals if they are to be used. Treat the waste according to current regulations.

6.4 Reference to other sections:

See sections 8 and 13.

SECTION 7: HANDLING AND STORAGE

7.1 Precautions for safe handling:

A.- General precautions for safe use

Comply with the current legislation concerning the prevention of industrial risks with regards manually handling weights. Maintain order, cleanliness and dispose of using safe methods (section 6).

B.- Technical recommendations for the prevention of fires and explosions

Product is non-flammable under normal conditions of storage, manipulation and use. It is recommended to transfer at slow speeds to avoid the generation of electrostatic charges that can affect flammable products. Consult section 10 for information on conditions and materials that should be avoided.

C.- Technical recommendations on general occupational hygiene

- CONTINUED ON NEXT PAGE -

Armorgard 541FST Resin

Date of compilation: 7/17/2025

Version: 1

SECTION 7: HANDLING AND STORAGE (continued)

Do not eat or drink during the process, washing hands afterwards with suitable cleaning products.

D.- Technical recommendations to prevent environmental risks

It is recommended to have absorbent material available at close proximity to the product (See subsection 6.3)

7.2 Conditions for safe storage, including any incompatibilities:

A.- Specific storage requirements

Minimum Temp.: 60 °F

Maximum Temp.: 80 °F

Maximum time: 12 Months

B.- General conditions for storage

Avoid sources of heat, radiation, static electricity and contact with food. For additional information see subsection 10.5

7.3 Specific end use(s):

Except for the instructions already specified it is not necessary to provide any special recommendation regarding the uses of this product.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters:

Substances whose occupational exposure limits have to be assessed in the workplace:


There are no applicable occupational exposure limits for the substances contained in the product

8.2 Appropriate engineering controls:


A.- Individual protection measures, such as personal protective equipment

As a preventative measure it is recommended to use basic Personal Protection Equipment. For more information on Personal Protection Equipment (storage, use, cleaning, maintenance, class of protection,...) consult the information leaflet provided by the manufacturer. For more information see subsection 7.1. All information contained herein is a recommendation, the information on clothing performance must be combined with professional judgment, and a clear understanding of the clothing application, to provide the best protection to the worker. All chemical protective clothing use must be based on a hazard assessment to determine the risks for exposure to chemicals and other hazards. Conduct hazard assessments in accordance with 29 CFR 1910.132.

B.- Respiratory protection


Pictogram	PPE	Remarks
 Mandatory respiratory tract protection	Filter mask for gases and vapours (Filter type: A)	Replace when there is a taste or smell of the contaminant inside the face mask. If the contaminant comes with warnings it is recommended to use isolation equipment. Use respirator in accordance with manufacturer's use limitations and OSHA standard 1910.134 (29CFR)

C.- Specific protection for the hands

Pictogram	PPE	Remarks
 Mandatory hand protection	Protective gloves against minor risks	Replace gloves in case of any sign of damage. For prolonged periods of exposure to the product for professional /industrial users, we recommend using chemical protection gloves. Use gloves in accordance with manufacturer's use limitations and OSHA standard 1910.138 (29CFR)

As the product is a mixture of several substances, the resistance of the glove material can not be calculated in advance with total reliability and has therefore to be checked prior to the application.

D.- Eye and face protection

Pictogram	PPE	Remarks
 Mandatory face protection	Panoramic glasses against splash/projections.	Clean daily and disinfect periodically according to the manufacturer's instructions. Use if there is a risk of splashing. Use this PPE in accordance with manufacturer's use limitations and OSHA standard 1910.133 (29CFR)

E.- Bodily protection

- CONTINUED ON NEXT PAGE -

Armorgard 541FST Resin

Date of compilation: 7/17/2025



Version: 1

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION (continued)

Pictogram	PPE	Remarks
	Work clothing	Replace before any evidence of deterioration.
	Anti-slip work shoes	Replace before any evidence of deterioration.

F.- Additional emergency measures

It is advised to implement additional emergency equipments in workplaces that are particularly exposed to the product or in situations where risk assessments highlight the necessity of such equipments.

Emergency measure	Standards	Emergency measure	Standards
 Emergency shower	ANSI Z358-1 ISO 3864-1:2011, ISO 3864-4:2011	 Eyewash stations	DIN 12 899 ISO 3864-1:2011, ISO 3864-4:2011

Environmental exposure controls:

To comply with environmental protection regulations, it is recommended to prevent any spillage of the product and its container.
For more detailed information, please refer to subsection 7.1.D.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties:

For complete information see the product datasheet.

Appearance:

Physical state at 68 °F:	Liquid
Appearance:	Non-applicable *
Color:	<input type="checkbox"/> White
Odor:	Sweet
Odour threshold:	Non-applicable *

Volatility:

Boiling point at atmospheric pressure:	>392 °F
Vapour pressure at 68 °F:	7.579E-1 Pa
Vapour pressure at 122 °F:	9.42 Pa (0.01 kPa)
Evaporation rate at 68 °F:	Non-applicable *

Product description:

Density at 68 °F:	Non-applicable *
Relative density at 68 °F:	1.01
Dynamic viscosity at 68 °F:	15000 - 35000 cP
Kinematic viscosity at 68 °F:	Non-applicable *
Kinematic viscosity at 104 °F:	Non-applicable *
Concentration:	Non-applicable *
pH:	Non-applicable *
Vapour density at 68 °F:	Non-applicable *
Partition coefficient n-octanol/water 68 °F:	Non-applicable *
Solubility in water at 68 °F:	Non-applicable *

*Non-applicable due to the nature of the product, not providing information property of its hazards.

- CONTINUED ON NEXT PAGE -

Armorgard 541FST Resin

Date of compilation: 7/17/2025

Version: 1

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES (continued)

Solubility properties: Non-applicable *

Decomposition temperature: Non-applicable *

Melting point/freezing point: Non-applicable *

Flammability:

Flash Point: >212 °F

Flammability (solid, gas): Non-applicable *

Autoignition temperature: 752 °F

Lower flammability limit: Non-applicable *

Upper flammability limit: Non-applicable *

Particle characteristics:

Median equivalent diameter: Non-applicable *

9.2 Other information:

Information with regard to physical hazard classes:

Explosive properties: Non-applicable *

Oxidising properties: Non-applicable *

Corrosive to metals: Non-applicable *

Heat of combustion: Non-applicable *

Aerosols-total percentage (by mass) of flammable components: Non-applicable *

Other safety characteristics:

Surface tension at 68 °F: Non-applicable *

Refraction index: Non-applicable *

*Non-applicable due to the nature of the product, not providing information property of its hazards.

SECTION 10: STABILITY AND REACTIVITY

10.1 Reactivity:

No hazardous reactions are expected because the product is stable under recommended storage conditions. See section 7 from Safety Data Sheet.

10.2 Chemical stability:

Chemically stable under the indicated conditions of storage, handling and use.

10.3 Possibility of hazardous reactions:

Under the specified conditions, hazardous reactions that lead to excessive temperatures or pressure are not expected.

10.4 Conditions to avoid:

Applicable for handling and storage at room temperature:

Shock and friction	Contact with air	Increase in temperature	Sunlight	Humidity
Not applicable	Not applicable	Not applicable	Not applicable	Not applicable

10.5 Incompatible materials:

Acids	Water	Oxidising materials	Combustible materials	Others
Avoid strong acids	Not applicable	Not applicable	Not applicable	Avoid alkalis or strong bases

10.6 Hazardous decomposition products:

See subsection 10.3, 10.4 and 10.5 to find out the specific decomposition products. Depending on the decomposition conditions, complex mixtures of chemical substances can be released: carbon dioxide (CO₂), carbon monoxide and other organic compounds.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects:

- CONTINUED ON NEXT PAGE -

Armorgard 541FST Resin

Date of compilation: 7/17/2025

Version: 1

SECTION 11: TOXICOLOGICAL INFORMATION (continued)

The experimental information related to the toxicological properties of the product itself is not available

Dangerous health implications:

In case of exposure that is repetitive, prolonged or at concentrations higher than recommended by the occupational exposure limits, it may result in adverse effects on health depending on the means of exposure:

A- Ingestion (acute effect):

- Acute toxicity: Based on available data, the classification criteria are not met, as it does not contain substances classified as hazardous for consumption. For more information see section 3
- Corrosivity/Irritability: The consumption of a considerable dose can cause irritation in the throat, abdominal pain, nausea and vomiting.

B- Inhalation (acute effect):

- Acute toxicity : Based on available data, the classification criteria are not met, as it does not contain substances classified as hazardous for inhalation. For more information see section 3.
- Corrosivity/Irritability: Based on available data, the classification criteria are not met. However, it contains substances classified as hazardous for inhalation. For more information see section 3.

C- Contact with the skin and the eyes (acute effect):

- Contact with the skin: Produces skin inflammation.
- Contact with the eyes: Produces eye damage after contact.

D- CMR effects (carcinogenicity, mutagenicity and toxicity to reproduction):

- Carcinogenicity: Based on available data, the classification criteria are not met, as it does not contain substances classified as hazardous for the effects mentioned. For more information see section 3.
IARC: Glass, oxide, chemicals (1); Talc (3)
- Mutagenicity: Based on available data, the classification criteria are not met, as it does not contain substances classified as hazardous for this effect. For more information see section 3.
- Reproductive toxicity: Based on available data, the classification criteria are not met, as it does not contain substances classified as hazardous for this effect. For more information see section 3.

E- Sensitizing effects:

- Respiratory: Based on available data, the classification criteria are not met, as it does not contain substances classified as hazardous with sensitising effects. For more information see section 3.
- Skin: Prolonged contact with the skin can result in episodes of allergic contact dermatitis.

F- Specific target organ toxicity (STOT) - single exposure:

Based on available data, the classification criteria are not met. However, it contains substances classified as hazardous for inhalation. For more information see section 3.

G- Specific target organ toxicity (STOT)-repeated exposure:

- Specific target organ toxicity (STOT)-repeated exposure: Based on available data, the classification criteria are not met, as it does not contain substances classified as hazardous for this effect. For more information see section 3.
- Skin: Based on available data, the classification criteria are not met, as it does not contain substances classified as hazardous for this effect. For more information see section 3.

H- Aspiration hazard:

Based on available data, the classification criteria are not met, as it does not contain substances classified as hazardous for this effect. For more information see section 3.

Other information:

Non-applicable

Specific toxicology information on the substances:

Identification	Acute toxicity		Genus
Trade Secret CAS: Non-applicable	LD50 oral	4500 mg/kg	Rat
	LD50 dermal		
	LC50 inhalation		
Synthetic Silicon Dioxide CAS: 112945-52-5	LD50 oral	10000 mg/kg	Rat
	LD50 dermal	5100 mg/kg	Rabbit
	LC50 inhalation		

- CONTINUED ON NEXT PAGE -

Armorgard 541FST Resin

Date of compilation: 7/17/2025

Version: 1

SECTION 12: ECOLOGICAL INFORMATION

The experimental information related to the eco-toxicological properties of the product itself is not available

Based on available data, the classification criteria are not met, as it does not contain substances classified as hazardous for this effect. For more information see section 3.

12.1 Ecotoxicity (aquatic and terrestrial, where available):

Acute toxicity:

Identification	Concentration	Species	Genus
reaction product: bisphenol-A-(epichlorhydrin), epoxy resin (number average molecular weight \leq 700) CAS: 25068-38-6	LC50 >1 - 10 mg/L (96 h)		Fish
	EC50 >1 - 10 mg/L (48 h)		Crustacean
	EC50 >1 - 10 mg/L (72 h)		Algae
Bisphenol F diglycidyl ether resin CAS: 28064-14-4	LC50 >1 - 10 mg/L (96 h)		Fish
	EC50 >1 - 10 mg/L (48 h)		Crustacean
	EC50 >1 - 10 mg/L (72 h)		Algae
Synthetic Silicon Dioxide CAS: 112945-52-5	LC50 10000 mg/L (96 h)	Brachydanio rerio	Fish
	EC50 10000 mg/L (24 h)	Daphnia magna	Crustacean
	EC50 Non-applicable		

Chronic toxicity:

Identification	Concentration	Species	Genus
reaction product: bisphenol-A-(epichlorhydrin), epoxy resin (number average molecular weight \leq 700) CAS: 25068-38-6	NOEC Non-applicable		
	NOEC 0.3 mg/L	Daphnia magna	Crustacean

12.2 Persistence and degradability:

Substance-specific information:

Identification	Degradability	Biodegradability
reaction product: bisphenol-A-(epichlorhydrin), epoxy resin (number average molecular weight \leq 700) CAS: 25068-38-6	BOD5 Non-applicable	Concentration 100 mg/L
	COD Non-applicable	Period 28 days
	BOD5/COD Non-applicable	% Biodegradable 0 %

12.3 Bioaccumulative potential:

Substance-specific information:

Identification	Bioaccumulation potential
reaction product: bisphenol-A-(epichlorhydrin), epoxy resin (number average molecular weight \leq 700) CAS: 25068-38-6	BCF 4
	Pow Log 2.8
	Potential Low

12.4 Mobility in soil:

Non-applicable

12.5 Results of PBT and vPvB assessment:

Non-applicable

12.6 Other adverse effects:

Not described

SECTION 13: DISPOSAL CONSIDERATIONS

13.1 Disposal methods:

IT IS THE RESPONSIBILITY OF THE WASTE GENERATOR TO EVALUATE WHETHER HIS WASTES ARE HAZARDOUS BY CHARACTERISTICS OR LISTING.

Waste management (disposal and evaluation):

Follow RCRA framework and EPA regulation for to ensure that hazardous waste is managed safely and properly. Waste should not be disposed of to drains. Remind, It is the responsibility of the waste generator to evaluate whether his wastes are hazardous by characteristics or listing. See section 6 for further information about Accidental release measures.

Regulations related to waste management:

- CONTINUED ON NEXT PAGE -

Armorgard 541FST Resin

Date of compilation: 7/17/2025

Version: 1

SECTION 13: DISPOSAL CONSIDERATIONS (continued)

Legislation related to waste management:

40 CFR Solid Wastes - Part 239 through 282.

State regulatory requirements for generators may be more stringent than those in the federal program. Be sure to check the state's policies.

SECTION 14: TRANSPORT INFORMATION

Transport of dangerous goods by land:

With regard to 49 CFR on the Transport of Dangerous Goods:



- 14.1 UN number:** UN3082
- 14.2 UN proper shipping name:** ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (reaction product: bisphenol-A-(epichlorhydrin), epoxy resin (number average molecular weight ≤ 700))
- 14.3 Transport hazard class(es):** 9
- Labels:** 9
- 14.4 Packing group, if applicable:** III
- 14.5 Marine pollutant:** Yes
- 14.6 Special precautions which a user needs to be aware of, or needs to comply with, in connection with transport or conveyance either within or outside their premises**
- Physico-Chemical properties: see section 9
- Limited quantities: 5 L
- Under 49 CFR 171.4, Except when transporting aboard a vessel, the requirements of this subchapter specific to marine pollutants do not apply to non-bulk packagings transported by motor vehicles, rail cars, and aircraft
- 14.7 Transport in bulk (according to Annex II of MARPOL 73/78 and the IBC Code):** Non-applicable

Transport of dangerous goods by sea:

With regard to IMDG 41-22:



- 14.1 UN number:** UN3082
- 14.2 UN proper shipping name:** ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (reaction product: bisphenol-A-(epichlorhydrin), epoxy resin (number average molecular weight ≤ 700))
- 14.3 Transport hazard class(es):** 9
- Labels:** 9
- 14.4 Packing group, if applicable:** III
- 14.5 Marine pollutant:** Yes
- 14.6 Special precautions which a user needs to be aware of, or needs to comply with, in connection with transport or conveyance either within or outside their premises**
- Special regulations: 335, 969, 274
- EmS Codes: F-A, S-F
- Physico-Chemical properties: see section 9
- Limited quantities: 5 L
- Segregation group: Non-applicable
- 14.7 Transport in bulk (according to Annex II of MARPOL 73/78 and the IBC Code):** Non-applicable

Transport of dangerous goods by air:

With regard to IATA/ICAO 2025:

- CONTINUED ON NEXT PAGE -

Armorgard 541FST Resin

Date of compilation: 7/17/2025

Version: 1

SECTION 14: TRANSPORT INFORMATION (continued)



- 14.1 UN number:** UN3082
- 14.2 UN proper shipping name:** ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (reaction product: bisphenol-A-(epichlorhydrin), epoxy resin (number average molecular weight ≤ 700))
- 14.3 Transport hazard class(es):** 9
Labels: 9
- 14.4 Packing group, if applicable:** III
- 14.5 Marine pollutant:** Yes
- 14.6 Special precautions which a user needs to be aware of, or needs to comply with, in connection with transport or conveyance either within or outside their premises**
Physico-Chemical properties: see section 9
- 14.7 Transport in bulk (according to Annex II of MARPOL 73/78 and the IBC Code):** Non-applicable

SECTION 15: REGULATORY INFORMATION

15.1 Safety, health and environmental regulations specific for the product in question:

- CALIFORNIA LABOR CODE - The Hazardous Substances List: Non-applicable
- California Proposition 65 (the Safe Drinking Water and Toxic Enforcement Act of 1986) - Birth defects or other reproductive harm: Non-applicable
- California Proposition 65 (the Safe Drinking Water and Toxic Enforcement Act of 1986) - Cancer: Non-applicable
- CANADA-Domestic Substances List (DSL): *reaction product: bisphenol-A-(epichlorhydrin), epoxy resin (number average molecular weight ≤ 700) (25068-38-6); Bisphenol F diglycidyl ether resin (28064-14-4); Trade Secret (Non-applicable); Synthetic Silicon Dioxide (112945-52-5)*
- CANADA-Non-Domestic Substances List (NDSL): Non-applicable
- Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) - Reportable Quantities: Non-applicable
- Hazardous Air Pollutants (Clean Air Act): Non-applicable
- Massachusetts RTK - Substance List: Non-applicable
- Minnesota - Hazardous substances ERTK: Non-applicable
- New Jersey Worker and Community Right-to-Know Act: Non-applicable
- New York RTK - Substance list: Non-applicable
- NTP (National Toxicology Program): Non-applicable
- OSHA Specifically Regulated Substances (29 CFR 1910.1001-1096): Non-applicable
- Pennsylvania Worker and Community Right-to-Know Law: Non-applicable
- Protective Action Criteria (PAC) with AEGLs, ERPGs, & TEELs: *reaction product: bisphenol-A-(epichlorhydrin), epoxy resin (number average molecular weight ≤ 700) (25068-38-6); Bisphenol F diglycidyl ether resin (28064-14-4); Synthetic Silicon Dioxide (112945-52-5)*
- Rhode Island - Hazardous substances RTK: Non-applicable
- SB-258 Cleaning Product Right to Know Act: Non-applicable
- The Toxic Substances Control Act (TSCA): *reaction product: bisphenol-A-(epichlorhydrin), epoxy resin (number average molecular weight ≤ 700) (25068-38-6); Bisphenol F diglycidyl ether resin (28064-14-4); Trade Secret (Non-applicable)*
- Toxic chemical release reporting under EPCRA section 313 (40 CFR Part 372): Non-applicable

Specific provisions in terms of protecting people or the environment:

It is recommended to use the information provided in this safety data sheet as a foundation for conducting workplace-specific risk assessments. These assessments will help establish the appropriate risk prevention measures for handling, using, storing, and disposing of this product.

Other legislation:

Take into consideration other applicable federal, state, and local laws and local regulations.

SECTION 16: OTHER INFORMATION

Legislation related to safety data sheets:

This safety data sheet has been designed in accordance with Appendix d to §1910.1200 - Safety data sheets

Texts of the legislative phrases mentioned in section 2:

- CONTINUED ON NEXT PAGE -

Armorgard 541FST Resin

Date of compilation: 7/17/2025

Version: 1

SECTION 16: OTHER INFORMATION (continued)

H315: Causes skin irritation.
H317: May cause an allergic skin reaction.
H319: Causes serious eye irritation.

Advice related to training:

According to 29 CFR 1910. 1200, training on chemical hazards is necessary for employees using this product. This training will facilitate their understanding and interpretation of the safety data sheet, as well as the product label.

Principal bibliographical sources:

Occupational Safety & Health Administration (OSHA).

Abbreviations and acronyms:

IMDG: International maritime dangerous goods code
IATA: International Air Transport Association
ICAO: International Civil Aviation Organisation
COD: Chemical Oxygen Demand
BOD5: 5-day biochemical oxygen demand
BCF: Bioconcentration factor
LD50: Lethal Dose 50
CL50: Lethal Concentration 50
EC50: Effective concentration 50
Log-POW: Octanol-water partition coefficient
Koc: Partition coefficient of organic carbon
IARC: International Agency for Research on Cancer

NFPA:

Health Hazards: 2
Flammability Hazards: 1
Instability Hazards: 0
Special Hazards: Non-applicable



Date of compilation: 7/17/2025

Manufacturer Disclaimer: The information contained in this safety data sheet ("SDS") is based on sources, technical knowledge and current legislation. Furthermore, is based on data believed to be accurate; thus, the company does not assume any liability for its accuracy. The information provided herein cannot be considered a guarantee of the properties of this product and the same is simply a description of the security requirements. The use, occupational methodology and/or conditions for users of this product are not within our awareness or control. It is ultimately the responsibility of the user(s) to take the necessary measures to obtain the legal requirements concerning the manipulation, storage, use and disposal of chemical products. The information of this SDS only refers to this product, which should not be used for purposes other than those specified. Finally, the manner in which this product is used and whether there is any infringement of patents is the sole responsibility of the user(s).

END OF SAFETY DATA SHEET

Armorgard 541FST Hardener




Date of compilation: 7/17/2025

Version: 1

SECTION 1: IDENTIFICATION

- 1.1 Product identifier:** Armorgard 541FST Hardener
- Other means of identification:**
Non-applicable
- 1.2 Recommended use of the chemical and restrictions on use:**
 Relevant uses (Professional users): Hardener for adhesives
 Relevant uses (Industrial user): Hardener for adhesives
 Uses advised against: All uses not specified in this section or in section 7.3
- 1.3 Name, U.S. address, and U.S. telephone number of the chemical manufacturer, importer, or other responsible party:**
 Copps Industries Inc
 10500 N Commerce St
 53092 Mequon - United States
 Phone: 2622381700
 orders@coppsindustries.com
 www.coppsindustries.com
- 1.4 Emergency phone number:** 1-800-255-3924 Contract Number MIS5199399

SECTION 2: HAZARD(S) IDENTIFICATION

- 2.1 Classification of the substance or mixture:**
29 CFR 1910.1200:
 Classification of the chemical in accordance with paragraph (d)(1)(i) of §1910.1200
 Acute Tox. 4: Acute toxicity if swallowed, Category 4, H302
 Acute Tox. 4: Acute toxicity on contact with skin, Category 4, H312
 Acute Tox. 4: Acute inhalation toxicity, Category 4, H332
 Eye Dam. 1: Serious eye damage, Category 1, H318
 Repr. 1B: Reproductive toxicity, Category 1B, H360
 Skin Corr. 1A: Skin corrosion, Category 1A, H314
 Skin Sens. 1B: Sensitisation, skin, Category 1B, H317
 STOT SE 3: Respiratory tract toxicity, single exposure, Category 3, H335
- 2.2 Label elements:**
29 CFR 1910.1200:
Danger
- 


- Hazard statements:**
 Acute Tox. 4: H302 - Harmful if swallowed.
 Acute Tox. 4: H312 - Harmful in contact with skin.
 Acute Tox. 4: H332 - Harmful if inhaled.
 Eye Dam. 1: H318 - Causes serious eye damage.
 Repr. 1B: H360 - May damage fertility or the unborn child.
 Skin Corr. 1A: H314 - Causes severe skin burns and eye damage.
 Skin Sens. 1B: H317 - May cause an allergic skin reaction.
 STOT SE 3: H335 - May cause respiratory irritation.
- Precautionary statements:**

- CONTINUED ON NEXT PAGE -

Armorgard 541FST Hardener

Date of compilation: 7/17/2025

Version: 1

SECTION 2: HAZARD(S) IDENTIFICATION (continued)

P280: Wear protective gloves/face protection/protective clothing/respiratory protection/protective footwear.
P301+P330+P331: IF SWALLOWED: rinse mouth. Do NOT induce vomiting.
P302+P352: IF ON SKIN: Wash with plenty of soap and water.
P303+P361+P353: IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
P304+P340: IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308+P313: IF exposed or concerned: Get medical advice/attention.
P501: Dispose of contents and / or containers in accordance with regulations on hazardous waste or packaging and packaging waste respectively.

Substances that contribute to the classification

2,2'-iminodiethylamine; 4-tert-butylphenol; Bisphenol A; Trade Secret

Additional labeling:



WARNING

This product can expose you to chemicals including Bisphenol A, which is [are] known to the State of California to cause birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

2.3 Hazards not otherwise classified (HNOC):

Non-applicable

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances:

Non-applicable

3.2 Mixtures:

Chemical description: Formulated polyamines

Components:

Remaining components are non-hazardous and/or present at amounts below reportable limits. The specific chemical identity and/or exact percentage (concentration) of composition has been withheld as a trade secret in accordance with paragraph (i) of §1910.1200. Therefore, in accordance with Appendix D to § 1910.1200, the product contains:

Identification	Chemical name	Concentration
CAS: 111-40-0	2,2'-iminodiethylamine	25 - <50 %
CAS: 98-54-4	4-tert-butylphenol	10 - <25 %
CAS: 80-05-7	Bisphenol A	10 - <25 %
CAS: Non-applicable	Trade Secret	10 - <25 %
CAS: Non-applicable	Trade Secret	10 - <25 %

To obtain more information on the hazards of the substances consult sections 11, 12 and 16.

Other information:

Identification	M-factor	
4-tert-butylphenol CAS: 98-54-4	Acute	1
	Chronic	1
Bisphenol A CAS: 80-05-7	Acute	1
	Chronic	10

SECTION 4: FIRST-AID MEASURES

- CONTINUED ON NEXT PAGE -

Armorgard 541FST Hardener

Date of compilation: 7/17/2025

Version: 1

SECTION 4: FIRST-AID MEASURES (continued)

4.1 Description of necessary measures:

Request medical assistance immediately, showing the SDS of this product.

By inhalation:

Remove the person affected from the area of exposure, provide with fresh air and keep at rest. In serious cases such as cardiorespiratory failure, artificial resuscitation techniques will be necessary (mouth to mouth resuscitation, cardiac massage, oxygen supply, etc.) requiring immediate medical assistance.

By skin contact:

Remove contaminated clothing and footwear, rinse skin or shower the person affected if appropriate with plenty of cold water and neutral soap. In serious cases see a doctor. If the product causes burns or freezing, clothing should not be removed as this could worsen the injury caused if it is stuck to the skin. If blisters form on the skin, these should never be burst as this will increase the risk of infection.

By eye contact:

Rinse eyes thoroughly with lukewarm water for at least 15 minutes. Do not allow the person affected to rub or close their eyes. If the injured person uses contact lenses, these should be removed unless they are stuck to the eyes, as this could cause further damage. In all cases, after cleaning, a doctor should be consulted as quickly as possible with the SDS of the product.

By ingestion/aspiration:

Request immediate medical assistance, showing the SDS of this product. Do not induce vomiting, because its expulsion from the stomach can be hazardous to the mucus of the main digestive tract, and its inhalation, to the respiratory system. Rinse out the mouth and throat, as they may have been affected during ingestion. In the case of loss of consciousness do not administer anything orally unless supervised by a doctor. Keep the person affected at rest.

4.2 Most important symptoms/effects, acute and delayed:

Acute and delayed effects are indicated in sections 2 and 11.

4.3 Indication of immediate medical attention and special treatment needed, if necessary:

Non-applicable

SECTION 5: FIRE-FIGHTING MEASURES

5.1 Suitable (and unsuitable) extinguishing media:

Suitable extinguishing media:

Product is non-flammable under normal conditions of storage, handling and use. In the case of combustion as a result of improper handling, storage or use preferably use polyvalent powder extinguishers (ABC powder), in accordance with the Regulation on fire protection systems.

Unsuitable extinguishing media:

Non-applicable

5.2 Specific hazards arising from the chemical:

As a result of combustion or thermal decomposition reactive sub-products are created that can become highly toxic and, consequently, can present a serious health risk.

5.3 Special protective equipment and precautions for fire-fighters:

Depending on the magnitude of the fire it may be necessary to use full protective clothing and Self Contained Breathing Apparatus. Minimum emergency facilities and equipment should be available (fire blankets, portable first aid kit,...)

Additional provisions:

As in any fire, prevent human exposure to fire, smoke, fumes or products of combustion. Only properly trained personnel should be involved in firefighting. Evacuate nonessential personnel from the fire area. Destroy any source of ignition. In case of fire, refrigerate the storage containers and tanks for products susceptible to inflammation. Avoid spillage of the products used to extinguish the fire into an aqueous medium.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures:

For non-emergency personnel:

Isolate leaks provided that there is no additional risk for the people performing this task. Personal protection equipment must be used against potential contact with the spilt product (See section 8). Evacuate the area and keep out those who do not have protection.

- CONTINUED ON NEXT PAGE -

Armorgard 541FST Hardener

Date of compilation: 7/17/2025

Version: 1

SECTION 6: ACCIDENTAL RELEASE MEASURES (continued)

For emergency responders:

Wear protective equipment. Keep unprotected persons away. See section 8.

6.2 Environmental precautions:

This product is not classified as hazardous to the environment. Keep product away from drains, surface and underground water.

6.3 Methods and materials for containment and cleaning up:

For accidental releases in excess of reportable quantities (RQ) (Table 302.4), refer to 40 CFR 302 for detailed instructions concerning reporting requirements and notify the National Response Center (800) 424-8802.

Prevent the entrance of product in drains, sewers or watercourses. Absorb the spill using sand or inert absorbent and move it to a safe place. Do not absorb in sawdust or other combustible absorbents. Collect the product in appropriate containers and manage it according to current legislation.

Spillages in water or sea:

Small spillages:

Contain spillage using barriers or similar equipment. Use suitable absorbents for collection and treat the waste in accordance with current regulations.

Large spillages:

If possible, contain spillage in open water using barriers or similar equipment. If this is not possible, try to control its spread and collect the product with suitable mechanical means. Always consult experts before using dispersants and make sure you have the necessary approvals if they are to be used. Treat the waste according to current regulations.

6.4 Reference to other sections:

See sections 8 and 13.

SECTION 7: HANDLING AND STORAGE

7.1 Precautions for safe handling:

A.- General precautions for safe use

Comply with the current standards 29 CFR 1910 Occupational Safety and Health Standards. Keep containers hermetically sealed. Control spills and residues, destroying them with safe methods (section 6). Avoid leakages from the container. Maintain order and cleanliness where dangerous products are used.

B.- Technical recommendations for the prevention of fires and explosions

Product is non-flammable under normal conditions of storage, manipulation and use. It is recommended to transfer at slow speeds to avoid the generation of electrostatic charges that can affect flammable products. Consult section 10 for information on conditions and materials that should be avoided.

C.- Technical recommendations on general occupational hygiene

PREGNANT WOMEN SHOULD NOT BE EXPOSED TO THIS PRODUCT. Transfer in fixed places that comply with the necessary security conditions (emergency showers and eyewash stations in close proximity), using personal protection equipment, especially on the hands and face (See section 8). Limit manual transfers to containers of small amounts. Do not eat or drink during the process, washing hands afterwards with suitable cleaning products.

D.- Technical recommendations to prevent environmental risks

It is recommended to have absorbent material available at close proximity to the product (See subsection 6.3)

7.2 Conditions for safe storage, including any incompatibilities:

A.- Specific storage requirements

Minimum Temp.: 60 °F

Maximum Temp.: 80 °F

Maximum time: 12 Months

B.- General conditions for storage

Avoid sources of heat, radiation, static electricity and contact with food. For additional information see subsection 10.5

7.3 Specific end use(s):

Except for the instructions already specified it is not necessary to provide any special recommendation regarding the uses of this product.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

- CONTINUED ON NEXT PAGE -

Armorgard 541FST Hardener

Date of compilation: 7/17/2025

Version: 1

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION (continued)

8.1 Control parameters:

Substances whose occupational exposure limits have to be assessed in the workplace:

US. ACGIH Threshold Limit Values (2022):

Identification	Occupational exposure limits		
2,2'-iminodiethylamine CAS: 111-40-0	TLV-TWA	1 ppm	
	TLV-STEL		

CALIFORNIA- TABLE AC-1 PERMISSIBLE EXPOSURE LIMITS FOR CHEMICAL CONTAMINANTS:


Identification	Occupational exposure limits		
2,2'-iminodiethylamine CAS: 111-40-0	PEL	1 ppm	4 mg/m ³
	STEL		
Trade Secret CAS: Non-applicable	PEL		0.1 mg/m ³
	STEL		

8.2 Appropriate engineering controls:


A.- Individual protection measures, such as personal protective equipment

As a preventative measure it is recommended to use basic Personal Protection Equipment. For more information on Personal Protection Equipment (storage, use, cleaning, maintenance, class of protection,...) consult the information leaflet provided by the manufacturer. For more information see subsection 7.1. All information contained herein is a recommendation, the information on clothing performance must be combined with professional judgment, and a clear understanding of the clothing application, to provide the best protection to the worker. All chemical protective clothing use must be based on a hazard assessment to determine the risks for exposure to chemicals and other hazards. Conduct hazard assessments in accordance with 29 CFR 1910.132.

B.- Respiratory protection


Pictogram	PPE	Remarks
 Mandatory respiratory tract protection	Filter mask for gases and vapours (Filter type: K)	Replace when there is a taste or smell of the contaminant inside the face mask. If the contaminant comes with warnings it is recommended to use isolation equipment. Use respirator in accordance with manufacturer's use limitations and OSHA standard 1910.134 (29CFR)

C.- Specific protection for the hands


Pictogram	PPE	Remarks
 Mandatory hand protection	Chemical protective gloves (Material: Chloroprene, Breakthrough time: > 480 min, Thickness: 0.65 mm)	The Breakthrough Time indicated by the manufacturer must exceed the period during which the product is being used. Do not use protective creams after the product has come into contact with skin. Use gloves in accordance with manufacturer's use limitations and OSHA standard 1910.138 (29CFR)

As the product is a mixture of several substances, the resistance of the glove material can not be calculated in advance with total reliability and has therefore to be checked prior to the application.

D.- Eye and face protection

Pictogram	PPE	Remarks
 Mandatory face protection	Face shield	Clean daily and disinfect periodically according to the manufacturer's instructions. Use if there is a risk of splashing. Use this PPE in accordance with manufacturer's use limitations and OSHA standard 1910.133 (29CFR)

E.- Bodily protection

Pictogram	PPE	Remarks
 Mandatory complete body protection	Disposable clothing for protection against chemical risks	For professional use only. Clean periodically according to the manufacturer's instructions.


- CONTINUED ON NEXT PAGE -

Armorgard 541FST Hardener

Date of compilation: 7/17/2025



Version: 1

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION (continued)

Pictogram	PPE	Remarks
 Mandatory foot protection	Safety footwear for protection against chemical risk	Replace boots at any sign of deterioration. Use foot protection in accordance with manufacturer's use limitations and OSHA standard 1910.136 (29CFR)

F.- Additional emergency measures

It is advised to implement additional emergency equipments in workplaces that are particularly exposed to the product or in situations where risk assessments highlight the necessity of such equipments.

Emergency measure	Standards	Emergency measure	Standards
 Emergency shower	ANSI Z358-1 ISO 3864-1:2011, ISO 3864-4:2011	 Eyewash stations	DIN 12 899 ISO 3864-1:2011, ISO 3864-4:2011

Environmental exposure controls:

To comply with environmental protection regulations, it is recommended to prevent any spillage of the product and its container. For more detailed information, please refer to subsection 7.1.D.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties:

For complete information see the product datasheet.

Appearance:

Physical state at 68 °F:	Liquid
Appearance:	Non-applicable *
Color:	 Blue
Odor:	Aminic
Odour threshold:	Non-applicable *

Volatility:

Boiling point at atmospheric pressure:	>349 °F
Vapour pressure at 68 °F:	>17 Pa
Vapour pressure at 122 °F:	131.36 Pa (0.13 kPa)
Evaporation rate at 68 °F:	Non-applicable *

Product description:

Density at 68 °F:	Non-applicable *
Relative density at 68 °F:	0.989
Dynamic viscosity at 68 °F:	100 - 200 cP
Kinematic viscosity at 68 °F:	Non-applicable *
Kinematic viscosity at 104 °F:	Non-applicable *
Concentration:	Non-applicable *
pH:	Non-applicable *
Vapour density at 68 °F:	Non-applicable *
Partition coefficient n-octanol/water 68 °F:	Non-applicable *
Solubility in water at 68 °F:	Non-applicable *
Solubility properties:	Non-applicable *
Decomposition temperature:	Non-applicable *
Melting point/freezing point:	Non-applicable *

*Non-applicable due to the nature of the product, not providing information property of its hazards.

- CONTINUED ON NEXT PAGE -

Armorgard 541FST Hardener

Date of compilation: 7/17/2025

Version: 1

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES (continued)

Flammability:

Flash Point:	Non Flammable (>199.4 °F)
Flammability (solid, gas):	Non-applicable *
Autoignition temperature:	676 °F
Lower flammability limit:	Non-applicable *
Upper flammability limit:	Non-applicable *

Particle characteristics:

Median equivalent diameter:	Non-applicable *
-----------------------------	------------------

9.2 Other information:

Information with regard to physical hazard classes:

Explosive properties:	Non-applicable *
Oxidising properties:	Non-applicable *
Corrosive to metals:	Non-applicable *
Heat of combustion:	Non-applicable *
Aerosols-total percentage (by mass) of flammable components:	Non-applicable *

Other safety characteristics:

Surface tension at 68 °F:	Non-applicable *
Refraction index:	Non-applicable *

*Non-applicable due to the nature of the product, not providing information property of its hazards.

SECTION 10: STABILITY AND REACTIVITY

10.1 Reactivity:

No hazardous reactions are expected because the product is stable under recommended storage conditions. See section 7 from Safety Data Sheet.

10.2 Chemical stability:

Chemically stable under the indicated conditions of storage, handling and use.

10.3 Possibility of hazardous reactions:

Under the specified conditions, hazardous reactions that lead to excessive temperatures or pressure are not expected.

10.4 Conditions to avoid:

Applicable for handling and storage at room temperature:

Shock and friction	Contact with air	Increase in temperature	Sunlight	Humidity
Not applicable	Not applicable	Not applicable	Not applicable	Not applicable

10.5 Incompatible materials:

Acids	Water	Oxidising materials	Combustible materials	Others
Avoid strong acids	Not applicable	Precaution	Not applicable	Avoid alkalis or strong bases

10.6 Hazardous decomposition products:

See subsection 10.3, 10.4 and 10.5 to find out the specific decomposition products. Depending on the decomposition conditions, complex mixtures of chemical substances can be released: carbon dioxide (CO₂), carbon monoxide and other organic compounds.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects:

The experimental information related to the toxicological properties of the product itself is not available

Dangerous health implications:

- CONTINUED ON NEXT PAGE -

Armorgard 541FST Hardener

Date of compilation: 7/17/2025

Version: 1

SECTION 11: TOXICOLOGICAL INFORMATION (continued)

In case of exposure that is repetitive, prolonged or at concentrations higher than recommended by the occupational exposure limits, it may result in adverse effects on health depending on the means of exposure:

A- Ingestion (acute effect):

- Acute toxicity: The consumption of a considerable dose can cause irritation in the throat, abdominal pain, nausea and vomiting.
- Corrosivity/Irritability: Corrosive product, if it is swallowed causes burns destroying the tissues. For more information about secondary effects from skin contact see section 2.

B- Inhalation (acute effect):

- Acute toxicity : Exposure in high concentration can cause a breakdown in the central nervous system causing headache, dizziness, vertigo, nausea, vomiting, confusion, and in serious cases, loss of consciousness.
- Corrosivity/Irritability: Corrosive to the respiratory tract

C- Contact with the skin and the eyes (acute effect):

- Contact with the skin: Above all, skin contact may occur as fabrics of all thicknesses can be destroyed, resulting in burns. For more information on the secondary effects see section 2.
- Contact with the eyes: Produces serious eye damage after contact.

D- CMR effects (carcinogenicity, mutagenicity and toxicity to reproduction):

- Carcinogenicity: Based on available data, the classification criteria are not met, as it does not contain substances classified as hazardous for the effects mentioned. For more information see section 3.
IARC: Non-applicable
- Mutagenicity: Based on available data, the classification criteria are not met, as it does not contain substances classified as hazardous for this effect. For more information see section 3.
- Reproductive toxicity: May damage fertility or the unborn child

E- Sensitizing effects:

- Respiratory: Based on available data, the classification criteria are not met, as it does not contain substances classified as hazardous with sensitising effects. For more information see section 3.
- Skin: Prolonged contact with the skin can result in episodes of allergic contact dermatitis.

F- Specific target organ toxicity (STOT) - single exposure:

Causes irritation in respiratory passages, which is normally reversible and limited to the upper respiratory passages.

G- Specific target organ toxicity (STOT)-repeated exposure:

- Specific target organ toxicity (STOT)-repeated exposure: Based on available data, the classification criteria are not met, as it does not contain substances classified as hazardous for this effect. For more information see section 3.
- Skin: Based on available data, the classification criteria are not met, as it does not contain substances classified as hazardous for this effect. For more information see section 3.

H- Aspiration hazard:

Based on available data, the classification criteria are not met, as it does not contain substances classified as hazardous for this effect. For more information see section 3.

Other information:

Non-applicable

Specific toxicology information on the substances:

Identification	Acute toxicity		Genus
2,2'-iminodiethylamine CAS: 111-40-0	LD50 oral	500 mg/kg	
	LD50 dermal	1100 mg/kg	
	LC50 inhalation		
Bisphenol A CAS: 80-05-7	LD50 oral	5100 mg/kg	Rat
	LD50 dermal	3000 mg/kg	Rabbit
	LC50 inhalation		
4-tert-butylphenol CAS: 98-54-4	LD50 oral	4000 mg/kg	Rat
	LD50 dermal	2288 mg/kg	Rabbit
	LC50 inhalation		

- CONTINUED ON NEXT PAGE -

Armorgard 541FST Hardener

Date of compilation: 7/17/2025

Version: 1

SECTION 11: TOXICOLOGICAL INFORMATION (continued)

Identification	Acute toxicity		Genus
Trade Secret CAS: Non-applicable	LD50 oral	1090 mg/kg	Rat
	LD50 dermal		
	LC50 inhalation mist	1.34 mg/L	Rat
Trade Secret CAS: Non-applicable	LD50 oral	700 mg/kg	Rat
	LD50 dermal	1700 mg/kg	Rabbit
	LC50 inhalation		

SECTION 12: ECOLOGICAL INFORMATION

The experimental information related to the eco-toxicological properties of the product itself is not available

Based on available data, the classification criteria are not met, as it does not contain substances classified as hazardous for this effect.
For more information see section 3.

12.1 Ecotoxicity (aquatic and terrestrial, where available):

Acute toxicity:

Identification	Concentration		Species	Genus
4-tert-butylphenol CAS: 98-54-4	LC50	5.14 mg/L (96 h)	Pimephales promelas	Fish
	EC50	4.8 mg/L (24 h)	Daphnia magna	Crustacean
	EC50	11.2 mg/L (72 h)	Scenedesmus subspicatus	Algae
Bisphenol A CAS: 80-05-7	LC50	4.6 mg/L (96 h)	Pimephales promelas	Fish
	EC50	3.8 mg/L (48 h)	Daphnia magna	Crustacean
	EC50	Non-applicable		
Trade Secret CAS: Non-applicable	LC50	88 mg/L (96 h)	Oryzias latipes	Fish
	EC50	15 mg/L (48 h)	Daphnia magna	Crustacean
	EC50	20 mg/L (72 h)	Selenastrum capricornutum	Algae
Trade Secret CAS: Non-applicable	LC50	130 mg/L (96 h)	Leuciscus idus	Fish
	EC50	33 mg/L (48 h)	Daphnia magna	Crustacean
	EC50	30 mg/L (72 h)	Pseudokirchneriella subcapitata	Algae

Chronic toxicity:

Identification	Concentration		Species	Genus
Bisphenol A CAS: 80-05-7	NOEC	>0.01 - 0.1 mg/L		Fish
	NOEC	>0.01 - 0.1 mg/L		Crustacean
Trade Secret CAS: Non-applicable	NOEC	Non-applicable		
	NOEC	4.7 mg/L	Daphnia magna	Crustacean

12.2 Persistence and degradability:

Substance-specific information:

Identification	Degradability		Biodegradability	
Bisphenol A CAS: 80-05-7	BOD5	Non-applicable	Concentration	100 mg/L
	COD	Non-applicable	Period	14 days
	BOD5/COD	Non-applicable	% Biodegradable	0 %
Trade Secret CAS: Non-applicable	BOD5	Non-applicable	Concentration	14 mg/L
	COD	Non-applicable	Period	28 days
	BOD5/COD	Non-applicable	% Biodegradable	49 %
Trade Secret CAS: Non-applicable	BOD5	Non-applicable	Concentration	100 mg/L
	COD	Non-applicable	Period	28 days
	BOD5/COD	Non-applicable	% Biodegradable	29 %

12.3 Bioaccumulative potential:

Substance-specific information:

- CONTINUED ON NEXT PAGE -

Armorgard 541FST Hardener

Date of compilation: 7/17/2025

Version: 1

SECTION 12: ECOLOGICAL INFORMATION (continued)

Identification	Bioaccumulation potential	
Bisphenol A CAS: 80-05-7	BCF	67
	Pow Log	3.32
	Potential	Moderate
Trade Secret CAS: Non-applicable	BCF	3
	Pow Log	0.18
	Potential	Low

12.4 Mobility in soil:

Identification	Absorption/desorption		Volatility	
2,2'-iminodiethylamine CAS: 111-40-0	Koc	Non-applicable	Henry	Non-applicable
	Conclusion	Non-applicable	Dry soil	Non-applicable
	Surface tension	4.164E-2 N/m (77 °F)	Moist soil	Non-applicable
4-tert-butylphenol CAS: 98-54-4	Koc	Non-applicable	Henry	Non-applicable
	Conclusion	Non-applicable	Dry soil	Non-applicable
	Surface tension	2.306E-2 N/m (336.33 °F)	Moist soil	Non-applicable
Bisphenol A CAS: 80-05-7	Koc	796	Henry	1.013E-6 Pa·m ³ /mol
	Conclusion	Low	Dry soil	Non-applicable
	Surface tension	3.76E-3 N/m (687.97 °F)	Moist soil	Non-applicable
Trade Secret CAS: Non-applicable	Koc	1300	Henry	Non-applicable
	Conclusion	Low	Dry soil	Non-applicable
	Surface tension	Non-applicable	Moist soil	Non-applicable
Trade Secret CAS: Non-applicable	Koc	30	Henry	Non-applicable
	Conclusion	Very High	Dry soil	Non-applicable
	Surface tension	Non-applicable	Moist soil	Non-applicable

12.5 Results of PBT and vPvB assessment:

Non-applicable

12.6 Other adverse effects:

Not described

SECTION 13: DISPOSAL CONSIDERATIONS

13.1 Disposal methods:

The next characteristic per RCRA could apply to the unused product if it becomes a waste material: Corrosivity. The next EPA hazardous waste number could apply: D002.

IT IS THE RESPONSIBILITY OF THE WASTE GENERATOR TO EVALUATE WHETHER HIS WASTES ARE HAZARDOUS BY CHARACTERISTICS OR LISTING.

Waste management (disposal and evaluation):

Follow RCRA framework and EPA regulation for to ensure that hazardous waste is managed safely and properly. Waste should not be disposed of to drains. Remind, It is the responsibility of the waste generator to evaluate whether his wastes are hazardous by characteristics or listing. See section 6 for further information about Accidental release measures.

Regulations related to waste management:

Legislation related to waste management:

40 CFR Solid Wastes - Part 239 through 282.

State regulatory requirements for generators may be more stringent than those in the federal program. Be sure to check the state's policies.

SECTION 14: TRANSPORT INFORMATION

Transport of dangerous goods by land:

With regard to 49 CFR on the Transport of Dangerous Goods:

- CONTINUED ON NEXT PAGE -

Armorgard 541FST Hardener

Date of compilation: 7/17/2025

Version: 1

SECTION 14: TRANSPORT INFORMATION (continued)



- 14.1 UN number:** UN2735
- 14.2 UN proper shipping name:** POLYAMINES, LIQUID, CORROSIVE, N.O.S. (2,2'-iminodiethylamine; 4-tert-butylphenol)
- 14.3 Transport hazard class(es):** 8
Labels: 8
- 14.4 Packing group, if applicable:** II
- 14.5 Marine pollutant:** Yes
- 14.6 Special precautions which a user needs to be aware of, or needs to comply with, in connection with transport or conveyance either within or outside their premises**
Physico-Chemical properties: see section 9
Limited quantities: 1 L
Under 49 CFR 171.4, Except when transporting aboard a vessel, the requirements of this subchapter specific to marine pollutants do not apply to non-bulk packagings transported by motor vehicles, rail cars, and aircraft
- 14.7 Transport in bulk (according to Annex II of MARPOL 73/78 and the IBC Code):** Non-applicable

Transport of dangerous goods by sea:

With regard to IMDG 41-22:



- 14.1 UN number:** UN2735
- 14.2 UN proper shipping name:** POLYAMINES, LIQUID, CORROSIVE, N.O.S. (2,2'-iminodiethylamine; 4-tert-butylphenol)
- 14.3 Transport hazard class(es):** 8
Labels: 8
- 14.4 Packing group, if applicable:** II
- 14.5 Marine pollutant:** Yes
- 14.6 Special precautions which a user needs to be aware of, or needs to comply with, in connection with transport or conveyance either within or outside their premises**
Special regulations: 274
EmS Codes: F-A, S-B
Physico-Chemical properties: see section 9
Limited quantities: 1 L
Segregation group: SGG18
- 14.7 Transport in bulk (according to Annex II of MARPOL 73/78 and the IBC Code):** Non-applicable

Transport of dangerous goods by air:

With regard to IATA/ICAO 2025:



- 14.1 UN number:** UN2735
- 14.2 UN proper shipping name:** POLYAMINES, LIQUID, CORROSIVE, N.O.S. (2,2'-iminodiethylamine; 4-tert-butylphenol)
- 14.3 Transport hazard class(es):** 8
Labels: 8
- 14.4 Packing group, if applicable:** II
- 14.5 Marine pollutant:** Yes
- 14.6 Special precautions which a user needs to be aware of, or needs to comply with, in connection with transport or conveyance either within or outside their premises**
Physico-Chemical properties: see section 9
- 14.7 Transport in bulk (according to Annex II of MARPOL 73/78 and the IBC Code):** Non-applicable

SECTION 15: REGULATORY INFORMATION

- CONTINUED ON NEXT PAGE -

Armorgard 541FST Hardener

Date of compilation: 7/17/2025

Version: 1

SECTION 15: REGULATORY INFORMATION (continued)

15.1 Safety, health and environmental regulations specific for the product in question:

- CALIFORNIA LABOR CODE - The Hazardous Substances List: *2,2'-iminodiethylamine (111-40-0)*; *4-tert-butylphenol (98-54-4)*; *Trade Secret (Non-applicable)*
- California Proposition 65 (the Safe Drinking Water and Toxic Enforcement Act of 1986) - Birth defects or other reproductive harm: *Bisphenol A (80-05-7)*
- California Proposition 65 (the Safe Drinking Water and Toxic Enforcement Act of 1986) - Cancer: Non-applicable
- CANADA-Domestic Substances List (DSL): *2,2'-iminodiethylamine (111-40-0)*; *4-tert-butylphenol (98-54-4)*; *Bisphenol A (80-05-7)*; *Trade Secret (Non-applicable)*; *Trade Secret (Non-applicable)*
- CANADA-Non-Domestic Substances List (NDSL): Non-applicable
- Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) - Reportable Quantities: Non-applicable
- Hazardous Air Pollutants (Clean Air Act): Non-applicable
- Massachusetts RTK - Substance List: *2,2'-iminodiethylamine (111-40-0)*; *Bisphenol A (80-05-7)*; *Trade Secret (Non-applicable)*
- Minnesota - Hazardous substances ERTK: *2,2'-iminodiethylamine (111-40-0)*; *Trade Secret (Non-applicable)*
- New Jersey Worker and Community Right-to-Know Act: *2,2'-iminodiethylamine (111-40-0)*; *Bisphenol A (80-05-7)*; *Trade Secret (Non-applicable)*
- New York RTK - Substance list: *2,2'-iminodiethylamine (111-40-0)*; *Bisphenol A (80-05-7)*; *Trade Secret (Non-applicable)*
- NTP (National Toxicology Program): Non-applicable
- OSHA Specifically Regulated Substances (29 CFR 1910.1001-1096): Non-applicable
- Pennsylvania Worker and Community Right-to-Know Law: *2,2'-iminodiethylamine (111-40-0)*; *Trade Secret (Non-applicable)*
- Protective Action Criteria (PAC) with AEGLs, ERPGs, & TEELs: *2,2'-iminodiethylamine (111-40-0)*; *4-tert-butylphenol (98-54-4)*; *Bisphenol A (80-05-7)*
- Rhode Island - Hazardous substances RTK: Non-applicable
- SB-258 Cleaning Product Right to Know Act : *4-tert-butylphenol (98-54-4)*; *Bisphenol A (80-05-7)*
- The Toxic Substances Control Act (TSCA) : *2,2'-iminodiethylamine (111-40-0)*; *4-tert-butylphenol (98-54-4)*; *Bisphenol A (80-05-7)*; *Trade Secret (Non-applicable)*; *Trade Secret (Non-applicable)*
- Toxic chemical release reporting under EPCRA section 313 (40 CFR Part 372): *Bisphenol A (80-05-7)*

Specific provisions in terms of protecting people or the environment:

It is recommended to use the information provided in this safety data sheet as a foundation for conducting workplace-specific risk assessments. These assessments will help establish the appropriate risk prevention measures for handling, using, storing, and disposing of this product.

Other legislation:

Take into consideration other applicable federal, state, and local laws and local regulations.

SECTION 16: OTHER INFORMATION

Legislation related to safety data sheets:

This safety data sheet has been designed in accordance with Appendix d to §1910.1200 - Safety data sheets

Texts of the legislative phrases mentioned in section 2:

- H314: Causes severe skin burns and eye damage.
- H318: Causes serious eye damage.
- H317: May cause an allergic skin reaction.
- H335: May cause respiratory irritation.
- H360: May damage fertility or the unborn child.
- H302: Harmful if swallowed.
- H312: Harmful in contact with skin.
- H332: Harmful if inhaled.

Advice related to training:

According to 29 CFR 1910. 1200, training on chemical hazards is necessary for employees using this product. This training will facilitate their understanding and interpretation of the safety data sheet, as well as the product label.

Principal bibliographical sources:

Occupational Safety & Health Administration (OSHA).

Abbreviations and acronyms:

- CONTINUED ON NEXT PAGE -

Armorgard 541FST Hardener

Date of compilation: 7/17/2025

Version: 1

SECTION 16: OTHER INFORMATION (continued)

IMDG: International maritime dangerous goods code
 IATA: International Air Transport Association
 ICAO: International Civil Aviation Organisation
 COD: Chemical Oxygen Demand
 BOD5: 5-day biochemical oxygen demand
 BCF: Bioconcentration factor
 LD50: Lethal Dose 50
 CL50: Lethal Concentration 50
 EC50: Effective concentration 50
 Log-POW: Octanol-water partition coefficient
 Koc: Partition coefficient of organic carbon
 IARC: International Agency for Research on Cancer

NFPA:

Health Hazards: 3
 Flammability Hazards: 0
 Instability Hazards: 0
 Special Hazards: Non-applicable



Date of compilation: 7/17/2025

Manufacturer Disclaimer: The information contained in this safety data sheet ("SDS") is based on sources, technical knowledge and current legislation. Furthermore, is based on data believed to be accurate; thus, the company does not assume any liability for its accuracy. The information provided herein cannot be considered a guarantee of the properties of this product and the same is simply a description of the security requirements. The use, occupational methodology and/or conditions for users of this product are not within our awareness or control. It is ultimately the responsibility of the user(s) to take the necessary measures to obtain the legal requirements concerning the manipulation, storage, use and disposal of chemical products. The information of this SDS only refers to this product, which should not be used for purposes other than those specified. Finally, the manner in which this product is used and whether there is any infringement of patents is the sole responsibility of the user(s).

END OF SAFETY DATA SHEET