

SAFETY DATA SHEET

SECTION 1 – IDENTIFICATION

Product Identifier : **ARDEX EP 2000™ Hardener (Part B)**
Product Code Number : 70011320
Chemical Description : Mixture
Trade Name/Synonyms : ARDEX EP 2000 Hardener
Material Use : Substrate Preparation Epoxy Primer
Uses Advised Against : No information available.
Manufacturer's name and address: **Supplier's name and address:**



ARDEX Engineered Cements
400 Ardex Park Dr.
Aliquippa, PA 15001 USA

Refer to Manufacturer

Information Telephone No. : (724) 203-5000
Website Address : <http://www.ardexamericas.com>
24 Hr Emergency Telephone # : CHEM-TEL: 1-800-255-3924 OR 1-813-248-0585 (call collect)

SECTION 2 – HAZARDS IDENTIFICATION

GHS Classification per 29 CFR 1910.1200 (OSHA HCS 2012) and HPR (WHMIS 2015)

: Acute Toxicity, Oral, Category 4
Acute Toxicity, Dermal, Category 4
Acute Toxicity, Inhalation, Category 2
Skin Corrosion/Irritation, Category 1B
Eye Corrosion/Irritation, Category 1
Skin Sensitization, Category 1
Reproductive Toxicity, Category 2

GHS Pictograms :



Signal Word : Danger

Hazard Statements : Harmful if swallowed.
Harmful in contact with skin.
Causes severe skin burns and eye damage.
Fatal if inhaled.
May cause an allergic skin reaction.
Suspected of damaging fertility or the unborn child.

Precautionary Statements Do not handle until all safety precautions have been read and understood. Do not breathe dust/fume/gas/vapours. Use only outdoors or in a well-ventilated area. In case of inadequate ventilation wear respiratory protection. Do not eat, drink or smoke when using this product. Wear protective gloves/protective clothing/eye protection. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reuse. Wash hands and exposed skin thoroughly after handling. Store in a well-ventilated place. Keep container tightly closed. Store locked up. Dispose of contents / container in accordance with federal, state, and local laws. Do not allow product to enter drains.

Hazards Not Otherwise Specified : None.

% Unknown acute toxicity : 73% of this product consists of ingredients with unknown acute inhalation toxicity.

SECTION 3 – COMPOSITION/INFORMATION ON INGREDIENTS

Ingredients	CAS #	% (by weight)
Isophoronediamine	2855-13-2	30.00 – 60.00
m-Phenylenebis (methylamine)	1477-55-0	10.00 – 30.00
Triethylenetetramine	112-24-3	10.00 – 30.00
Benzyl alcohol	100-51-6	10.00 – 30.00
1,2-Cyclohexanediamine	694-83-7	1.00 – 5.00
2,2-Bis(4-hydroxyphenyl)propane	80-05-7	1.00 – 5.00

Exact percentages of the ingredients have been withheld by the manufacturer as trade secrets.

SECTION 4 – FIRST AID MEASURES

- General** : IF exposed or concerned: Get medical advice/attention.
- Inhalation** : IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Immediately call a POISON CENTER or doctor/physician.
- Skin contact** : IF ON SKIN (or hair): Remove/Take off Immediately all contaminated clothing. Rinse SKIN with soap and water/shower. IF SKIN irritation or rash occurs: get medical advice/attention.
- Eye contact** : IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical advice/attention.
- Ingestion** : IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. Call a POISON CENTER or doctor/physician if you feel unwell.
- Notes for Physician** : Treat symptomatically.

Signs and symptoms of short-term (acute) exposure

- Inhalation* : Symptoms may include coughing, shortness of breath, wheezing and reduced lung function. Symptoms may be delayed. May be fatal if too much is inhaled. Extremely high concentrations could result in unconsciousness and death.
- Skin* : Direct skin contact may cause corrosive skin burns, deep ulcerations and possibly permanent scarring. The product may be absorbed through the skin.
- Eyes* : Chemical burns, corneal damage, and possibly blindness can result from direct contact. Exposure to low vapour concentrations may cause swelling (edema) of the eyes, resulting in blurring of vision with a bluish haze and/or appearance of halos around lights.
- Ingestion* : May cause severe irritation and corrosive damage in the mouth, throat and stomach. Symptoms may include abdominal pain, vomiting, burns, perforations, bleeding and eventually death.

Effects of long-term (chronic) exposure

- : Prolonged inhalation may cause adverse lung effects with symptoms including coughing and shortness of breath. Some individuals may experience a sensitization reaction of the skin after an initial exposure. Subsequent exposures may cause a hypersensitive skin reaction (rash, swelling).

Indication of need for immediate medical attention or special treatment

- : Difficulty breathing persists after removing the person to fresh air.
Any exposure to the eye which causes irritation.
Chemical burns to the skin. Blue color of the skin (cyanotic) after exposure.
Ingestion.

SECTION 5 – FIRE FIGHTING MEASURES

- Suitable extinguishing media** : Water spray, dry chemical, carbon dioxide, foam.
- Unsuitable extinguishing media** : High pressure water jet may spread the fire.

Hazardous combustion products : Carbon monoxide carbon dioxide, nitrogen oxides and/or low molecular weight hydrocarbons and amines.

Fire hazards/conditions of flammability

: Material is not flammable under normal conditions of use. Flash Point = 101°C (213.8°F)

Special fire-fighting procedures/equipment

: Firefighters should wear proper protective equipment and self-contained breathing apparatus with full face piece operated in positive pressure mode. Move containers from fire area if safe to do so. Water spray may be useful in cooling equipment exposed to heat and flame. After fires have been extinguished, carefully clean all equipment and surfaces exposed to fumes.

Flammability classification (OSHA 29 CFR 1910.1200, WHMIS 2015)

: Not flammable

SECTION 6 – ACCIDENTAL RELEASE MEASURES

Personal precautions

: Corrosive! See Section 7 for safe handling procedures. Wear chemically resistant personal protective equipment during cleanup. Restrict access to area until completion of clean-up. All persons dealing with clean-up must be properly trained and wear the appropriate chemically protective equipment. Refer to Section 8 on this Safety Data Sheet, EXPOSURE CONTROLS / PERSONAL PROTECTION, for additional information on acceptable personal protective equipment.

Environmental precautions

: Do not allow product to enter waterways. Do not allow material to contaminate ground water system.

Spill response / clean-up

: Ventilate area of release. Stop spill or leak at source if safely possible. Contain product with inert absorbent material, preventing it from entering sewer lines or waterways. Gather up spilled material and place in suitable container for later disposal (see Section 13). Notify the appropriate authorities as required.

Prohibited materials

: Avoid strong oxidizing agents. Do not allow spilled material to mix with epoxy resins. Chemical reaction with epoxides causes polymerization and release of heat energy.

Special spill response procedures

: If a spill/release in excess of the EPA reportable quantity is made into the environment, immediately notify the national response center in the United States (phone: 1-800-424-8002).

US CERCLA Reportable quantity (RQ): None reported.

SECTION 7 – HANDLING AND STORAGE

Safe handling procedures

: Corrosive! Do NOT get into eyes, on skin or on clothing. Do NOT breathe vapor. Do NOT swallow. Observe good hygiene standards. Do not eat, drink or smoke in the work area. Wash thoroughly after handling. Wear protective clothing to prevent skin contact. Promptly remove any clothing that becomes contaminated. Clean contaminated clothing before reuse. Keep container tightly closed. Use only with adequate ventilation.

Storage requirements

: Store in a cool, dry, well-ventilated area. Store away from heat and open flame. Avoid storing in direct sunlight. Store in original container. Keep tightly closed when not in use. Do not reuse empty container without commercial cleaning or reconditioning.

Incompatible materials

: See Section 10.

Special packaging materials

: Always keep in containers made of the same materials as the supply container.

SECTION 8 – EXPOSURE CONTROLS AND PERSONAL PROTECTION

Ingredients	CAS #	ACGIH TLV		OSHA PEL	
		TLV	STEL	PEL	STEL
Isophoronediamine	2855-13-2	N/Av	N/Av	N/Av	N/Av
m-Phenylenebis (methylamine)	1477-55-0	0.1 mg/m ³ CEIL	N/Av	0.1 mg/m ³ CEIL	N/Av
Triethylenetetramine	112-24-3	N/Av	N/Av	1 ppm (WEEL)	N/Av
Benzyl alcohol	100-51-6	10 ppm (AIHA WEEL)	N/Av	N/Av	N/Av
1,2-Cyclohexanediamine	694-83-7	N/Av	N/Av	N/Av	N/Av

2,2-Bis(4-hydroxyphenyl)propane	80-05-7	N/Av	N/Av	N/Av	N/Av
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- Ventilation and engineering measures:** Use general or local exhaust ventilation to maintain air concentrations below recommended exposure limits. Ventilation should effectively remove and prevent buildup of any vapor or mist generated from the handling of this product.
- Respiratory protection** : If work process generates excessive quantities of vapor or dust, or exposures in excess of any PEL, wear an appropriate organic vapor respirator.
- Hand protection** : Wear impervious gloves. Materials such as nitrile rubber or Viton (fluorocarbon rubber) are recommended. Refer to glove manufacturer for breakthrough time for the chemicals in this product. (See Section 3.)
- Body protection** : Wear chemical resistant protective clothing. Where extensive exposure to product is possible, use resistant coveralls, apron, and boots to prevent contact.
- Eye / face protection** : Chemical goggles must be worn when using this product. A face shield is recommended if splashing is possible.
- Other protective equipment** : An eyewash station and safety shower should be made available in the immediate working area.
- General hygiene considerations** : Avoid contact with eyes, skin and clothing. Do not breathe vapors/dust. Do not eat, drink or smoke when using this product. Clean all equipment and clothing at end of each work shift.

SECTION 9 – PHYSICAL AND CHEMICAL PROPERTIES

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|--|--|--|-------------------------|
| Physical state | : Liquid | Appearance | : Yellow to brown fluid |
| Odor | : Amine | Odor threshold | : N/Av |
| pH | : N/Av | Specific gravity | : 1.0 |
| Boiling point | : 96.1°C (205°F) | Coefficient of water/oil distribution | : N/Av |
| Melting/Freezing point | : N/Av | Solubility in water | : Emulsifiable |
| Vapor pressure (mm Hg @ 20°C / 68°F) | : 0.1 hPa @ 20°C (68°F) | | |
| Evaporation rate (n-Butyl acetate = 1) | : N/Av | Viscosity | : N/Av |
| Vapor density (Air = 1) | : > 1 | Volatiles (% by weight) | : N/Av |
| Volatile organic compounds (VOCs) | : 12.4 g/L A+B, ASTM D2369 | | |
| Flammability classification (OSHA 29 CFR 1910.1200) | : Non-flammable | | |
| Flash point | : 101°C (213.8°F) | Lower flammable limit (% by vol) | : Not available |
| Flash point method | : Setflash closed cup | Upper flammable limit (% by vol) | : Not available |
| Auto-ignition temperature | : N/Av | Oxidizing properties | : None |
| Flame projection length | : Not available | Flashback observed | : Not available |
| Explosion data: Sensitivity to mechanical impact / static discharge | : Not expected to be sensitive to mechanical impact or static. | | |

SECTION 10 – REACTIVITY AND STABILITY INFORMATION

- Reactivity** : Product is formulated to react with epoxides, forming a polymer. This reaction evolves heat.
- Stability** : Stable under the recommended storage and handling conditions prescribed.
- Hazardous polymerization** : Hazardous polymerization does not occur.
- Conditions to avoid** : Avoid prolonged exposure to heat.
- Materials to avoid and incompatibility** : Oxidizing agents.
- Hazardous decomposition products** : Refer to hazardous combustion products in Section 5.

SECTION 11 – TOXICOLOGICAL INFORMATION

Routes of Exposure : Inhalation: YES Skin Absorption: YES Skin and Eyes: Yes Ingestion: YES

Symptoms of acute overexposure : See Section 4.

Symptoms of chronic overexposure : See Section 4.

Calculated Acute Toxicity Estimates for the Product

Inhalation : 1.15 mg/L

Oral : 1229 mg/kg

Dermal : 1335 mg/kg

Toxicological data : Based on individual components, this product is harmful if swallowed or in contact with the skin, and can be fatal if inhaled. Contains components that may be absorbed through the skin in harmful amounts. See below for individual ingredient acute toxicity data.

Ingredients	CAS No.	LC50 (4 hr)	LD50	
		Inhalation, rat	Oral, rat	Dermal, rabbit
Isophoronediamine	2855-13-2	N/Av	1030 mg/kg	1100 mg/kg
m-Phenylenebis (methylamine)	1477-55-0	800 mg/m ³	930 mg/kg	2000 mg/kg
Triethylenetetramine	112-24-3	N/Av	2500 mg/kg	805 mg/kg
Benzyl alcohol	100-51-6	4178 mg/m ³	1230 mg/kg	2000 mg/kg
1,2-Cyclohexanediamine	694-83-7	N/Av	4556 mg/kg	N/Av
2,2-Bis(4-hydroxyphenyl)propane	80-05-7	N/Av	3250 mg/kg	3000 mg/kg

Repeated Dose Effects : Contains components which may be absorbed through the skin in harmful amounts, especially after repeated or prolonged exposure.

Carcinogenic status : No components are listed as carcinogens by ACGIH, IARC, OSHA, NIOSH or NTP.

Reproductive effects : Contains 2,2-Bis(4-hydroxyphenyl)propane, a suspected human reproductive toxicant. Overexposure may cause reproductive disorder(s) based on tests with laboratory animals.

Teratogenicity : None known.

Mutagenicity : None known.

Epidemiology : Not available.

Target Organ Effects : None known.

Sensitization to material : Contains multiple components which are known to cause skin sensitization reactions.

Synergistic materials : N/Av

Irritancy/Corrosivity : Corrosive.

Other important hazards : See hazards listed in Section 2.

SECTION 12 – ECOLOGICAL INFORMATION

Environmental effects : The product should not be allowed to enter drains or water courses, or be deposited where it can affect ground or surface waters.

Important environmental characteristics

: N/Av

Ecotoxicological : No data is available on the product itself. Information on components is listed below.

m-Phenylenebis (methylamine)–(1477-55-0)

96 Hr LC50 Oncorhynchus mykiss > 100 mg/L

48 Hr EC50 Daphnia magna 16 mg/L

Benzyl alcohol (100-51-6)

Test & Species **Results & Conditions**

96 Hr LC50 Pimephales promelas 460 mg/L [static]

96 Hr LC50 Lepomis macrochirus 10 mg/L [static]

3 Hr EC50 Anabaena variabilis 35 mg/L

48 Hr EC50 water flea 23 mg/L

Isophoronediamine

96 Hr LC50 - Leuciscus idus (Golden orfe) 110 mg/l

48 Hr EC50 - Daphnia magna (Water flea) 17.4 mg/l
72 Hr EC50 - Desmodesmus subspicatus (green algae) 37 mg/l

2,2-Bis(4-hydroxyphenyl)propane (80-05-7)

96 Hr LC50 – Cyprinodon variegatus (sheepshead minnow) 11 mg/l
48 Hr EC50 - Daphnia magna (Water flea) 10.2 mg/l
96 Hr EC50 – Pseudokirchneriella subcapitata (green algae) 2.73 – 3.1 mg/l

Mobility

No data available on the product itself.

Persistence

No data available on the product itself.

Bioaccumulation Potential

No data available on the product itself.



Other Adverse Effects

Material is highly alkaline and should not be discharged into sewers or waterways.

SECTION 13 – DISPOSAL CONSIDERATION

- Handling for disposal** : Handle waste according to recommendations in Section 7.
- Methods of disposal** : Dispose in accordance with all applicable federal, state, provincial and local regulations. Contact your local, state, provincial or federal environmental agency for specific rules.
- Disposal Information** : Waste must be handled in accordance with all local regulations. In case of large spills, follow all facility Emergency Response Procedures. Do not allow this material to into sewers/water supplies. Do not reuse containers. Dispose of container and any unused contents in accordance with local regulations.
- RCRA** : If this product, as supplied, becomes a waste in the United States, it may meet the criteria of a hazardous waste as defined under RCRA, Title 40 CFR 261. It is the responsibility of the waste generator to determine the proper waste identification and disposal method. For disposal of unused or waste material, check with local, state and federal environmental agencies.

SECTION 14 – TRANSPORTATION INFORMATION

Regulatory Information	UN Number	Shipping Name	Class	Packing Group	Label
TDG	UN 2735	Polyamines, liquid, corrosive, n.o.s. [Contains: Isophoronediamine,m-Phenylenebis (methylamine)]	8	III	
TDG Additional Information	None				
49 CFR/DOT	UN 2735	Polyamines, liquid, corrosive, n.o.s. [Contains: Isophoronediamine,m-Phenylenebis (methylamine)]	8	III	
49 CFR/DOT Additional Information	None.				

SECTION 15 – REGULATORY INFORMATION

Canadian Information:

This product has been classified according to the hazard criteria of the Hazardous Products Regulations (HPR). This SDS contains all of the information required by the HPR.

Canadian Environmental Protection Act (CEPA) information: All ingredients listed appear on either the Domestic Substances List (DSL) or the Non- Domestic Substances List (NDSL).

US Federal Information:

TSCA: All listed ingredients appear on the Toxic Substances Control Act (TSCA) inventory.

CERCLA Reportable Quantity (RQ) (40 CFR 117.302): None reported.

SARA TITLE III: Sec. 311 and 312, SDS Requirements, 40 CFR 370 Hazard Classes:
Immediate (Acute) Health Hazard
Chronic Health Hazard.

Under SARA Sections 311 and 312, the EPA has established threshold quantities for the reporting of hazardous chemicals. The current thresholds are 500 pounds or the threshold planning quantity (TPQ), whichever is lower, for extremely hazardous substances and 10,000 pounds for all other hazardous chemicals.

SARA TITLE III: Sec. 313, Toxic Chemicals Notification, 40 CFR 372: This material contains 2,2-Bis(4-hydroxyphenyl)propane [CAS# 80-05-7].

U.S. State Right To Know Laws

California Proposition 65: Warning! This product contains a chemical known to the State of California to cause reproductive toxicity.

Other State Right to Know Laws:

Component	CAS	CA	MA	MN	NJ	NY	PA	RI
Isophoronediamine	2855-13-2	No	No	Yes	Yes	No	No	No
m-Phenylenebis (methylamine)	1477-55-0	Yes	Yes	No	Yes	No	Yes	Yes
Triethylenetetramine	112-24-3	No	Yes	No	Yes	No	Yes	No
Benzyl alcohol	100-51-6	No	Yes	No	No	No	Yes	No
1,2-Cyclohexanediamine	694-83-7	No	No	No	No	No	No	No
2,2-Bis(4-hydroxyphenyl)propane	80-05-7	No	Yes	Yes	Yes	No	Yes	No

SECTION 16 – OTHER INFORMATION

HMIS Rating : * - Chronic Hazard 0 - Minimal 1 – Slight 2 – Moderate 3 – Serious 4 – Severe
Health: *3 Flammability 2 Physical Hazard 0
Recommended PPE: Gloves, safety glasses with side shields, protective clothing

Legend : ACGIH: American Conference of Governmental Industrial Hygienists
CAS: Chemical Abstract Services
CERCLA: Comprehensive Environmental Response, Compensation, and Liability Act of 1980
CFR: Code of Federal Regulations
DOT: Department of Transportation
DSL: Domestic Substances List
EPA: Environmental Protection Agency
GHS: Globally Harmonized System
HPR: Hazardous Products Regulations
IARC: International Agency for Research on Cancer
Inh: Inhalation
N/Av: Not Available
N/Ap: Not Applicable
NIOSH: National Institute of Occupational Safety and Health
NTP: National Toxicology Program
OSHA: Occupational Safety and Health Administration

PEL: Permissible exposure limit
RCRA: Resource Conservation and Recovery Act
SARA: Superfund Amendments and Reauthorization Act
STEL: Short Term Exposure Limit
TDG: Canadian Transportation of Dangerous Goods Act & Regulations
TLV: Threshold Limit Values
TSCA: Toxic Substance Control Act
TWA: Time Weighted Average
WHMIS: Workplace Hazardous Materials Identification System

Disclaimer of Liability

The Information presented herein is supplied as a guide to those who handle or use this product and has been prepared in good faith by technically knowledgeable personnel. It is not intended to be all-inclusive. The manner and conditions of use and handling may involve other and additional considerations. Safe work practices must be employed when working with any materials. It is important that the end user makes a determination regarding the adequacy of the safety procedures employed during the use of this product. No warranty of any kind is given or implied. ARDEX Engineered Cements will not be liable for any damages, losses, injuries or consequential damages which may result from the use or reliance on any information contained herein.

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