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 : Two-component epoxy preparation material for the installation of ARDEX underlayments and toppings.
Restrictions on Use : Use only as recommended in the product's Technical Data Sheet.

Details of the Supplier
Manufacturer's name and address:

ARDEX L.P.
400 Ardex Park Dr.
Aliquippa, PA 15001 USA

Information Telephone No. : 1-(888) 512-7339 or 1-(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 4
Skin Corrosion/Irritation, Category 1
Eye Corrosion/Irritation, Category 1
Skin Sensitization, Category 1

GHS Pictograms :

Signal Word : Danger

Hazard Statements : Harmful if swallowed or inhaled.
Harmful in contact with skin.
Causes severe skin burns and eye damage.
May cause an allergic skin reaction.

Precautionary Statements Do not breathe vapors or mist. Use only in a well-ventilated area. Do not eat, drink or smoke when using this product. Wash hands and exposed skin thoroughly after handling. Wear protective gloves/protective clothing/eye protection. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reuse. 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 Classified : None.

% Unknown acute toxicity : 46% 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 - 60
m-Phenylene bis(methylamine) [Synonyms: m-Xylene-α,α'-diamine; 1,3-Bis(aminomethyl)benzene]	1477-55-0	10 - 30
Poly(propylene glycol) bis(2-aminopropyl ether)	9046-10-0	5 - 10
1,3-Cyclohexylene-bis(methylamine)	2579-20-6	5 - 10
Trimethylhexamethylenediamine	25620-58-0	1 - 5
Lauryl alcohol	112-53-8	1 - 5
gamma-aminopropyltriethoxysilane	919-30-2	1 - 5
2,4,6-Tris(dimethylaminomethyl)phenol	90-72-2	1 - 5

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. Show product label or Safety Data Sheet to medical personnel. Symptoms may be delayed. Treat exposures immediately to prevent harm.

Inhalation : IF INHALED: Remove person to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/physician immediately.

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 attention immediately.

Ingestion : IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. Call a POISON CENTER or doctor/physician if you feel unwell.

Notes for Physician : Symptoms of chemical burns may be delayed. Treat proactively.

Signs and symptoms of short-term (acute) exposure

Inhalation : Inhalation of vapors may cause irritation of the respiratory system. Symptoms may include coughing and shortness of breath.

Skin : Causes chemical burns. Initial symptoms may include redness, itching, swelling, and pain.

Eyes : Causes chemical burns, permanent eye damage, possibly including blindness. Initial symptoms may include redness, itching, tearing, blurred vision, and pain.

Ingestion : May cause stomach pain with nausea and vomiting.

Effects of long-term (chronic) exposure

Inhalation : Prolonged inhalation may cause adverse lung effects with symptoms including coughing and shortness of breath.

Skin : Some individuals may experience a sensitization reaction of the skin after an initial, prolonged exposure. Subsequent exposures may cause a hypersensitive skin reaction (rash, swelling).

Eyes : Same symptoms as acute exposure to the eyes.

Ingestion : Same symptoms as acute exposure via ingestion.

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.
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. In a fire, vapors and gases may be poisonous and corrosive.

Flammability classification (OSHA 29 CFR 1910.1200, WHMIS 2015)

: Not flammable.
Flash Point > 100°C (> 212°F). See Section 9 for other Flammability information.

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.

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

NFPA Rating

Hazard Rating Scale: 0 - Minimal 1 – Slight 2 – Moderate 3 – Serious 4 – Severe

Health: 3 *Flammability* 1 *Reactivity* 0 *Special Hazards* 0

SECTION 6 – ACCIDENTAL RELEASE MEASURES

Personal precautions : 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 for additional information on 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. 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 : This product does not contain any chemicals requiring EPA notification for spills. In the event of a chemical spill, call the emergency telephone number listed in Section 1.

US CERCLA Reportable quantity (RQ): None reported.

SECTION 7 – HANDLING AND STORAGE

Safe handling procedures : Do NOT get into eyes, on skin or on clothing. Do NOT breathe vapors or mist. Do NOT swallow. Observe good hygiene standards. Do not eat, drink or smoke in the work area. Wash thoroughly after handling. Wear safety glasses, gloves, and protective clothing to prevent 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-Phenylene bis(methylamine)	1477-55-0	0.018 ppm	N/Av	N/Av	0.1 mg/m^3 NIOSH REL CEIL

Poly(propylene glycol) bis(2-aminopropyl ether)	9046-10-0	N/Av	N/Av	N/Av	N/Av
1,3-Cyclohexylene-bis(methylamine)	2579-20-6	N/Av	N/Av	N/Av	N/Av
Trimethylhexamethylenediamine	25620-58-0	N/Av	N/Av	N/Av	N/Av
Lauryl alcohol	112-53-8	N/Av	N/Av	N/Av	N/Av
gamma-aminopropyltriethoxysilane	919-30-2	N/Av	N/Av	N/Av	N/Av
2,4,6-Tris(dimethylaminomethyl)phenol	90-72-2	N/Av	N/Av	N/Av	N/Av

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 mist, or exposures exceeding any PEL, wear an appropriate, NIOSH-approved 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 (skin) 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 : Do NOT get into eyes, on skin or on clothing. Do not breathe vapors or mist. 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

Physical state	: Liquid	**Appearance**	: Yellow to brown fluid
Odor	: Amine	**Odor threshold**	: N/Av
pH	: Alkaline	**Specific gravity**	: 1.01
Boiling point	: >200°C (>392°F)	**Coefficient of water/oil distribution**	: N/Av
Melting/Freezing point	: N/Av	**Solubility in water**	: Insoluble
Vapor pressure (mm Hg @ 20°C / 68°F)	: 0.2 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	: > 100°C (> 212°F)	**Lower flammable limit (% by vol)**	: Not available
Flash point method	: Setaflash 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 discharge.

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 : > 1.4 mg/L (Mist)

Oral : > 1000 mg/kg

Dermal : > 1500 mg/kg

Toxicological data : 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) Inhalation, rat	LD50 Oral, rat	LD50 Dermal, rabbit
Isophoronediamine	2855-13-2	> 5.01	1030	> 2000
m-Phenylene bis(methylamine)	1477-55-0	1.95	930	2000
Poly(propylene glycol) bis(2-aminopropyl ether)	9046-10-0	N/Av	2885	2980
1,3-Cyclohexylene-bis(methylamine)	2579-20-6	N/Av	880	N/Av
Trimethylhexamethylenediamine	25620-58-0	N/Av	910	N/Av
Lauryl alcohol	112-53-8	N/Av	> 2000	> 8000
gamma-aminopropyltriethoxysilane	919-30-2	N/Av	1780	3800
2,4,6-Tris(dimethylaminomethyl)phenol	90-72-2	N/Av	2169	1280

Corrosivity/ Irritation to the skin : May cause chemical burns to the skin.

Corrosivity/ Irritation to the eyes : Causes serious chemical burns to the eyes. May cause permanent damage to eyes, including blindness.

Skin/Respiratory Sensitization : Contains multiple components which are known to cause skin sensitization reactions.

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

Teratogenicity : None known.

Reproductive effects : None known.

Germ Cell Mutagenicity : None known.

Epidemiology : Not available.

Target Organ Effects, Single exposure

: None known.

Target Organ Effects, Repeated exposure

: Contains components which may be absorbed through the skin in harmful amounts, especially after prolonged exposure.

Risk of aspiration : None known.

Synergistic materials : N/Av

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 available.

Biodegradability : No data available.
Bioaccumulative potential : No data available.
Mobility in soil : No data available.
PBT and vPvB assessment : No data available.
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.
Packaging : Handle contaminated packaging in the same manner as the product.
RCRA : 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**	Amines, liquid, corrosive, n.o.s. [Contains: Isophoronediamine, m-Phenylenebis (methylamine)]	**8**	**III**	
TDG Additional Information	**None**				
49 CFR/DOT	**UN 2735**	Amines, 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 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:

Acute Toxicity, Oral, Category 4
Acute Toxicity, Dermal, Category 4
Acute Toxicity, Inhalation, Category 4
Skin Corrosion/Irritation, Category 1
Eye Corrosion/Irritation, Category 1
Skin Sensitization, Category 1

Under SARA Sections 311 and 312, the EPA has established threshold quantities for the reporting of hazardous chemicals. The threshold for this product is 10,000 pounds.

SARA TITLE III: Sec. 313, Toxic Chemicals Notification, 40 CFR 372: This material is not subject to SARA notification requirements, since it does not contain any Toxic Chemical constituents above *de minimus* concentrations.

U.S. State Right to Know Laws

California Proposition 65: See the product's label for information about Proposition 65.

Other State Right to Know Laws:

Component	CAS	CA	MA	MN	NJ	NY	PA	RI
Isophoronediamine	2855-13-2	No	No	No	Yes	No	No	No
m-Phenylene bis(methylamine)	1477-55-0	Yes	Yes	Yes	Yes	No	Yes	Yes
Trimethylhexamethylenediamine	25620-58-0	No	No	No	Yes	No	No	No

SECTION 16 – OTHER INFORMATION

HMIS Rating : * - Chronic Hazard 0 - Minimal 1 – Slight 2 – Moderate 3 – Serious 4 – Severe

Health: *3 *Flammability* 1 *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 determines the adequacy of the safety procedures employed during the use of this product.
No warranty of any kind is given or implied. ARDEX L.P. 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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