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

Supplier’s name and address:
Refer to Manufacturer

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. 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

<table>
<thead>
<tr>
<th>Ingredients</th>
<th>CAS #</th>
<th>% (by weight)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Isophoronediamine</td>
<td>2855-13-2</td>
<td>30 - 60</td>
</tr>
<tr>
<td>m-Phenylene bis(methylamine) [Synonyms: m-Xylene-α,α’-diamine; 1,3-Bis(aminomethyl)benzene]</td>
<td>1477-55-0</td>
<td>10 - 30</td>
</tr>
<tr>
<td>Poly(propylene glycol) bis(2-aminopropyl ether)</td>
<td>9046-10-0</td>
<td>5 - 10</td>
</tr>
<tr>
<td>1,3-Cyclohexylene-bis(methylamine)</td>
<td>2579-20-6</td>
<td>5 - 10</td>
</tr>
<tr>
<td>Trimethylhexamethylenediamine</td>
<td>25620-58-0</td>
<td>1 - 5</td>
</tr>
<tr>
<td>Lauryl alcohol</td>
<td>112-53-8</td>
<td>1 - 5</td>
</tr>
<tr>
<td>gamma-aminopropyltriethoxysilane</td>
<td>919-30-2</td>
<td>1 - 5</td>
</tr>
<tr>
<td>2,4,6-Tris(dimethylaminomethyl)phenol</td>
<td>90-72-2</td>
<td>1 - 5</td>
</tr>
</tbody>
</table>

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.

### 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 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.

- 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 vapor. 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

<table>
<thead>
<tr>
<th>Ingredients</th>
<th>CAS #</th>
<th>ACGIH TLV</th>
<th></th>
<th>OSHA PEL</th>
<th></th>
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</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>TLV</td>
<td>STEL</td>
<td>PEL</td>
<td>STEL</td>
</tr>
<tr>
<td>Isophoronediamine</td>
<td>2855-13-2</td>
<td>N/Av</td>
<td>N/Av</td>
<td>N/Av</td>
<td>N/Av</td>
</tr>
<tr>
<td>m-Phenylene bis(methylamine)</td>
<td>1477-55-0</td>
<td>0.1 mg/m³</td>
<td>CEIL</td>
<td>N/Av</td>
<td>N/Av</td>
</tr>
<tr>
<td>Poly(propylene glycol) bis(2-amino)</td>
<td>9046-10-0</td>
<td>N/Av</td>
<td>N/Av</td>
<td>N/Av</td>
<td>N/Av</td>
</tr>
</tbody>
</table>
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-aminopropytriethoxysilane 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 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. 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
Solubility in water: Insoluble
Volatile organic compounds (VOCs): 12.4 g/L A+B, ASTM D2369
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
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.

<table>
<thead>
<tr>
<th>Ingredients</th>
<th>CAS No.</th>
<th>LC50 (4 hr)</th>
<th>LD50</th>
</tr>
</thead>
<tbody>
<tr>
<td>Isophoronediamine</td>
<td>2855-13-2</td>
<td>&gt; 5.01</td>
<td>1030</td>
</tr>
<tr>
<td>m-Phenylenediamine bis(methylamine)</td>
<td>1477-55-0</td>
<td>1.95</td>
<td>930</td>
</tr>
<tr>
<td>Poly(propylene glycol) bis(2-aminopropyl ether)</td>
<td>9046-10-0</td>
<td>N/Av</td>
<td>242</td>
</tr>
<tr>
<td>1,3-Cyclohexylene-bis(methylamine)</td>
<td>2579-20-6</td>
<td>N/Av</td>
<td>880</td>
</tr>
<tr>
<td>Trimethylhexamethylenediamine</td>
<td>25620-58-0</td>
<td>N/Av</td>
<td>910</td>
</tr>
<tr>
<td>Lauryl alcohol</td>
<td>112-53-8</td>
<td>N/Av</td>
<td>&gt; 2000</td>
</tr>
<tr>
<td>gamma-aminopropyltriethoxysilane</td>
<td>919-30-2</td>
<td>N/Av</td>
<td>1780</td>
</tr>
<tr>
<td>2,4,6-Tris(dimethylaminomethyl)phenol</td>
<td>90-72-2</td>
<td>N/Av</td>
<td>1200</td>
</tr>
</tbody>
</table>

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 – ECOTOXICOLOGICAL 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

<table>
<thead>
<tr>
<th>Regulatory Information</th>
<th>UN Number</th>
<th>Shipping Name</th>
<th>Class</th>
<th>Packing Group</th>
</tr>
</thead>
<tbody>
<tr>
<td>TDG</td>
<td>UN 2735</td>
<td>Amines, liquid, corrosive, n.o.s. [Contains: Isophoronediamine, m-Phenylenebis (methylamine)]</td>
<td>8</td>
<td>III</td>
</tr>
<tr>
<td>TDG Additional Information</td>
<td>None</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>49 CFR/DOT</td>
<td>UN 2735</td>
<td>Amines, liquid, corrosive, n.o.s. [Contains: Isophoronediamine, m-Phenylenebis (methylamine)]</td>
<td>8</td>
<td>III</td>
</tr>
<tr>
<td>49 CFR/DOT Additional Information</td>
<td>None</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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:
- 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 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:

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS</th>
<th>CA</th>
<th>MA</th>
<th>MN</th>
<th>NJ</th>
<th>NY</th>
<th>PA</th>
<th>RI</th>
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</thead>
<tbody>
<tr>
<td>Isophoronediamine</td>
<td>2855-13-2</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>m-Phenylene bis(methylamine)</td>
<td>1477-55-0</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Poly(propylene glycol) bis(2-aminopropyl ether)</td>
<td>9046-10-0</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>1,3-Cyclohexylene-bis(methylamine)</td>
<td>2579-20-6</td>
<td>No</td>
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<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Trimethylhexamethylenediamine</td>
<td>25620-58-0</td>
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<td>No</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Lauryl alcohol</td>
<td>112-53-8</td>
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<td>No</td>
<td>No</td>
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<td>No</td>
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<td>No</td>
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<tr>
<td>gamma-aminopropyltriethoxysilane</td>
<td>919-30-2</td>
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<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>2,4,6-Tris(dimethylaminomethyl)phenol</td>
<td>90-72-2</td>
<td>No</td>
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<td>No</td>
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<td>No</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>

**SECTIoN 16 – OTHER INFORMATION**

**HMIS Rating**

- 0 - Chronic Hazard
- 1 - Minimal
- 2 - Slight
- 3 - Moderate
- 4 - Serious
- 5 - 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/A: Not Available
- N/A: 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.