# Material Safety Data Sheet

**Material Name: ARDEX WA PART B HARDENER** **MSDS ID: WWHC-012**

## * * * Section 1 - Chemical Product and Company Identification * * *

**Material Name:** Epoxy Hardener
**Product Use:** Grout
**Synonyms:** Ardex WA, Part B; Ardex WA Hardener

### Manufacturer Information

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

Non-Emergency Phone #: 724-203-5000

Emergency #: +1-800-255-3924 (CHEM-TEL)

## * * * Section 2 - Hazards Identification * * *

### Emergency Overview

Corrosive Causes skin burns, eye burns, and respiratory tract burns. May cause allergic reactions. Contains a material which may cause cancer.

### Hazard Statements

Do not breathe dust or vapors. Do not get in eyes, on skin, or on clothing. Do not eat, drink, or smoke when using this product. Avoid prolonged or repeated skin contact with this material. Wash thoroughly after handling. Clean contaminated clothing, before reuse, or dispose of properly. Keep container tightly closed. Use only with adequate ventilation.

### Potential Health Effects: Eyes

Causes burns if in contact with the eyes.

### Potential Health Effects: Skin

Causes burns if in contact with the skin. Harmful if absorbed through the skin in significant amounts. Contains components which are easily absorbed through the skin. Contact may cause an allergic skin reaction.

### Potential Health Effects: Ingestion

Harmful if swallowed. May cause burns to the mouth, throat and digestive tract. May cause cancer

### Potential Health Effects: Inhalation

Vapors are harmful if inhaled. Inhalation may cause severe irritation and possible burns with coughing and choking.

### Potential Environmental Effects

May cause long-term adverse effects in the aquatic environment.

**HMIS Ratings: Health:** 3* **Fire:** 2 **Reactivity:** 0 **Pers. Prot.:** safety glasses with side shields, protective clothing and gloves

Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe * = Chronic hazard

## * * * Section 3 - Composition / Information on Ingredients * * *

| CAS | Component | Percent |
|---|---|---|
| Not Available | Amines from fatty acids | 5-10 |
| 112-24-3 | Triethylenetetramine | 5-10 |
| 111-40-0 | Diethylenetriamine | 1-5 |
| 111-42-2 | Diethanolamine | 0.1-1 |

### Component Information/Information on Non-Hazardous Components

This product is considered hazardous under 29 CFR 1910.1200 (Hazard Communication). This product is a controlled product under the criteria specified in the Canadian Workplace Hazardous Materials Information System (WHMIS).

## * * * Section 4 - First Aid Measures * * *

### First Aid: Eyes

Immediately flush eyes with large amounts of water, including under the eyelids, for 15-30 minutes. Remove contact lenses if present and easy to do. Obtain immediate medical attention.

### First Aid: Skin

In case of contact, immediately flush skin with plenty of water for at least 15 minutes. Remove contaminated clothing. Wash skin with mild soap if needed to completely remove material. Obtain immediate medical attention.

### First Aid: Ingestion

Obtain immediate medical attention. Do not induce vomiting. Never give anything by mouth to an unconscious person.

### First Aid: Inhalation

If inhaled, immediately remove the affected person to fresh air. If not breathing, have qualified personnel give artificial respiration and seek medical attention immediately.

## * * * Section 5 - Fire Fighting Measures * * *

### General Fire Hazards

See Section 9 for Flammability Properties.
Slight fire hazard.

### Hazardous Combustion Products

Under conditions of fire, material may decompose and emit oxides of nitrogen, carbon monoxide, carbon dioxide, and/or low molecular weight hydrocarbons.

### Extinguishing Media

regular dry chemical water spray carbon dioxide

### Specific Hazards Arising From the Chemical

Move container from fire area if it can be done without risk. Cool containers with water spray until well after the fire is out. Stay upwind and keep out of low areas.

### Fire Fighting Equipment/Instructions

Firefighters should wear full-face, self contained breathing apparatus and impervious protective clothing. Firefighters should avoid inhaling any combustion products.

**NFPA Ratings: Health:** 3 **Fire:** 1 **Reactivity:** 0

Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe

### Sensitivity to Mechanical Impact

Not sensitive

### Sensitivity to Static Discharge

Not sensitive

## * * * Section 6 - Accidental Release Measures * * *

### Personal Precautions

Avoid breathing dust or vapor. Avoid contact with skin and eyes. Wear appropriate protective equipment and clothing during clean-up.

### Containment Procedures

Stop the flow of material. Block any potential routes to water systems. Contain the discharged material.

### Environmental Precautions

May be harmful to aquatic life. Prevent discharge into sewers or waterways.

### Clean-Up Procedures

Wear appropriate protective equipment and clothing during clean-up. Stop source of leak if possible. Absorb with earth, sand or other non-combustible material and transfer to container. Flush contaminated areas with water. Do not flush into sanitary sewer systems, drains or surface water.

### Evacuation Procedures

Isolate area. Keep unnecessary personnel away.

### Special Procedures

Material is corrosive; avoid contact during clean up. Spilled material may be slippery.

## * * * Section 7 - Handling and Storage * * *

### Handling Procedures

Observe good hygiene standards when handling this material. Do NOT get into eyes, on skin or on clothing. Do NOT breathe vapor. Do NOT swallow. Do not eat, drink, or smoke when using this product. Wash thoroughly after handling. Wash contaminated clothing before reuse. Keep container tightly closed. Use only with adequate ventilation.

### Storage Procedures

Store in original container. Do not store in open, unlabeled or mislabeled containers. Store in a cool, dry, well-ventilated area. Keep container tightly closed when not in use. Keep container upright, when not in use, to prevent leakage. Open containers carefully. Do not reuse containers.

## * * * Section 8 - Exposure Controls / Personal Protection * * *

### Component Exposure Limits

Consult local authorities for acceptable exposure limits.

**Triethylenetetramine (112-24-3)**

**Ontario:** 0.5 ppm TWA; 3 mg/m3 TWA
Absorption through skin, eyes, or mucous membranes

**Diethylenetriamine (111-40-0)**

**ACGIH:** 1 ppm TWA
Skin - potential significant contribution to overall exposure by the cutaneous route

**OSHA (Vacated):** 1 ppm TWA; 4 mg/m3 TWA

**NIOSH:** 1 ppm TWA; 4 mg/m3 TWA
Potential for dermal absorption

**Alberta:** 1 ppm TWA; 4.2 mg/m3 TWA
Substance may be readily absorbed through intact skin

**British Columbia:** 1 ppm TWA
Sensitizer
Skin notation

**Manitoba:** 1 ppm TWA
Skin - potential significant contribution to overall exposure by the cutaneous route

**New Brunswick:** 1 ppm TWA; 4.2 mg/m3 TWA
Skin - potential for cutaneous absorption

**NW Territories:** 1 ppm TWA; 4 mg/m3 TWA
3 ppm STEL; 13 mg/m3 STEL
Skin notation

**Nova Scotia:** 1 ppm TWA
Skin - potential significant contribution to overall exposure by the cutaneous route

**Nunavut:** 1 ppm TWA; 4 mg/m3 TWA
3 ppm STEL; 13 mg/m3 STEL
Skin notation

**Ontario:** 1 ppm TWA
Absorption through skin, eyes, or mucous membranes

**Quebec:** 1 ppm TWAEV; 4.2 mg/m3 TWAEV
Skin designation

**Saskatchewan:** 1 ppm TWA
2 ppm STEL
Potentially harmful after absorption through skin or mucous membranes

**Yukon:** 1 ppm TWA; 4 mg/m3 TWA
1 ppm STEL; 4 mg/m3 STEL
Skin notation

**Diethanolamine (111-42-2)**

**ACGIH:** 1 mg/m3 TWA (inhalable fraction and vapor)
Skin - potential significant contribution to overall exposure by the cutaneous route

**OSHA (Vacated):** 3 ppm TWA; 15 mg/m3 TWA

**NIOSH:** 3 ppm TWA; 15 mg/m3 TWA

**Alberta:** 2 mg/m3 TWA
Substance may be readily absorbed through intact skin

**British Columbia:** 2 mg/m3 TWA
Skin notation

**Manitoba:** 1 mg/m3 TWA (inhalable fraction and vapor)
Skin - potential significant contribution to overall exposure by the cutaneous route

**New Brunswick:** 0.46 ppm TWA; 2 mg/m3 TWA
Skin - potential for cutaneous absorption

**NW Territories:** 3 ppm TWA; 13 mg/m3 TWA
6 ppm STEL; 26 mg/m3 STEL

| | |
|---|---|
| **Nova Scotia:** | 1 mg/m3 TWA (inhalable fraction and vapor)<br>Skin - potential significant contribution to overall exposure by the cutaneous route |
| **Nunavut:** | 3 ppm TWA; 13 mg/m3 TWA<br>6 ppm STEL; 26 mg/m3 STEL |
| **Ontario:** | 1 mg/m3 TWA (inhalable fraction and vapor)<br>Absorption through skin, eyes, or mucous membranes |
| **Quebec:** | 3 ppm TWAEV; 13 mg/m3 TWAEV<br>Skin designation |
| **Saskatchewan:** | 2 mg/m3 TWA<br>4 mg/m3 STEL<br>Potentially harmful after absorption through skin or mucous membranes |

### Engineering Controls

Ventilation should effectively remove and prevent buildup of any vapor or mist generated from the handling of this product.

### PERSONAL PROTECTIVE EQUIPMENT

### Personal Protective Equipment: Eyes/Face

Chemical splash goggles or safety glasses with side shields are recommended. Consider use of full face shield.

### Personal Protective Equipment: Skin

Wear appropriate chemical resistant clothing. Wear appropriate chemical resistant gloves. Recommended material type: nitrile

### Personal Protective Equipment: Respiratory

Under normal conditions of use, respiratory protection should not be necessary. If work process generates excessive quantities of vapor or dust, or exposures in excess of any PEL, wear an appropriate respirator which is equipped to handle corrosive organic vapor.

### Personal Protective Equipment: General

Eye wash fountains and emergency showers are required in the workplace when handling corrosive substances. Use good industrial hygiene practices when handling this material. Do not eat, drink, or smoke when using this product.

## * * * Section 9 - Physical & Chemical Properties * * *

| | | | |
|---|---|---|---|
| **Appearance:** | Gray paste | **Color:** | Gray |
| **Odor:** | Amine | **Physical State:** | Paste |
| **pH:** | 11-13 | **Vapor Pressure:** | Not available |
| **Vapor Density:** | Not available | **Boiling Point:** | Not availalble |
| **Melting Point:** | Not available | **Solubility in Water:** | Insoluble |
| **Specific Gravity:** | 1.7 (water=1) | **Flash Point:** | 135° C |
| **Flash Point Method:** | Closed Cup | **Lower Flammability Limit:** | Not available |
| **Auto Ignition:** | 335° C | **Upper Flammability Limit:** | Not available |
| **Freezing Point:** | Not available | **Decomposition Temperature:** | Not available |
| **Evaporation Rate:** | Not available | **Viscosity:** | Not available |
| **Bulk Density:** | 1.7 g/cc | **Percent Volatile:** | Not available |
| **VOC:** | Not available | **Octanol/H2O Coeff.:** | Not available |
| **Molecular Weight:** | Mixture | | |

## * * * Section 10 - Chemical Stability & Reactivity Information * * *

### Chemical Stability

Stable under normal conditions.

### Conditions to Avoid

Avoid prolonged exposure to heat.

### Incompatibility

Avoid contact with acids and strong oxidizing agents.

### Hazardous Decomposition

Under conditions of fire, material may decompose and emit oxides of nitrogen, carbon monoxide, carbon dioxide, and/or low molecular weight hydrocarbons.

### Possibility of Hazardous Reactions

Hazardous polymerization will not occur.

## * * * Section 11 - Toxicological Information * * *

### Acute Dose Effects

May cause eye burns, skin burns, respiratory tract burns, and allergic reactions.

### Component Analysis - LD50/LC50

**Triethylenetetramine (112-24-3)**

Oral LD50 Rat 2500 mg/kg; Dermal LD50 Rabbit 550 mg/kg

**Diethylenetriamine (111-40-0)**

Oral LD50 Rat 819 mg/kg; Dermal LD50 Rabbit 672 mg/kg

### Repeated Dose Effects

Contains a material which may cause cancer.

### Corrosivity

skin burns eye burns respiratory tract burns

### Carcinogenicity

### Component Carcinogenicity

**Diethanolamine (111-42-2)**

**ACGIH:** A3 - Confirmed Animal Carcinogen with Unknown Relevance to Humans

**IARC:** Monograph 101 [2012]; Monograph 77 [2000] (Group 2B (possibly carcinogenic to humans))

### Sensitization

May cause an allergic skin reaction.

### Target Organ Effects

immune system (sensitizer)

## * * * Section 12 - Ecological Information * * *

### Ecotoxicity

May be harmful to aquatic life. May cause long-term adverse effects in the aquatic environment.

### Component Analysis - Ecotoxicity - Aquatic Toxicity

**Triethylenetetramine (112-24-3)**

| Test & Species | Results & Conditions |
|---|---|
| 96 Hr LC50 Poecilia reticulata | 570 mg/L [semi-static] |
| 96 Hr LC50 Pimephales promelas | 495 mg/L |

| | |
|---|---|
| 72 Hr EC50 Desmodesmus subspicatus | 2.5 mg/L |
| 72 Hr EC50 Pseudokirchneriella subcapitata | 20 mg/L |
| 96 Hr EC50 Pseudokirchneriella subcapitata | 3.7 mg/L |
| 48 Hr EC50 Daphnia magna | 31.1 mg/L |

**Diethylenetriamine (111-40-0)**

| Test & Species | Results & Conditions |
|---|---|
| 96 Hr LC50 Leuciscus idus | 430 mg/L [semi-static] |
| 96 Hr LC50 Poecilia reticulata | 248 mg/L [static] |
| 96 Hr LC50 Poecilia reticulata | 1014 mg/L [semi-static] |
| 72 Hr EC50 Pseudokirchneriella subcapitata | 1164 mg/L |
| 96 Hr EC50 Pseudokirchneriella subcapitata | 345.6 mg/L |
| 96 Hr EC50 Desmodesmus subspicatus | 592 mg/L |
| 24 Hr EC50 Daphnia magna | 37 mg/L |
| 48 Hr EC50 Daphnia magna | 16 mg/L |

**Diethanolamine (111-42-2)**

| Test & Species | Results & Conditions |
|---|---|
| 96 Hr LC50 Pimephales promelas | 4460 - 4980 mg/L [flow-through] |
| 96 Hr LC50 Pimephales promelas | 1200 - 1580 mg/L [static] |
| 96 Hr LC50 Lepomis macrochirus | 600 - 1000 mg/L [static] |
| 72 Hr EC50 Desmodesmus subspicatus | 7.8 mg/L |
| 96 Hr EC50 Pseudokirchneriella subcapitata | 2.1 - 2.3 mg/L |
| 48 Hr EC50 Daphnia magna | 55 mg/L |

## Other Adverse Effects

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

# * * * Section 13 - Disposal Considerations * * *

## US EPA Waste Number & Descriptions

Material, if discarded, is expected to be a D002 Corrosive Waste. You must test your waste using methods described in 40 CFR Part 261 to determine if it meets applicable definitions of hazardous wastes.

## Component Waste Numbers

No EPA Waste Numbers are applicable for this product's components.

## Disposal Instructions

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.
See Section 7 for Handling Procedures. See Section 8 for Personal Protective Equipment recommendations.

# * * * Section 14 - Transportation Information * * *

## US DOT Information

**Shipping Name:** Amines, liquid, corrosive, n.o.s. (Contains: Triethylenetetramine, Diethylenetriamine)
**UN/NA #:** UN2735 **Hazard Class:** 8 **Packing Group:** II
**Required Label(s):** 8

## TDG Information

**Shipping Name:** Amines, liquid, corrosive, n.o.s. (Contains: Diethylenetriamine, Triethylenetetramine)
**UN/NA #:** UN2735 **Hazard Class:** 8 **Packing Group:** II
**Required Label(s):** 8

# * * * Section 15 - Regulatory Information * * *

## US Federal Regulations

### Component Analysis

This material contains one or more of the following chemicals required to be identified under SARA Sections 302/304 (40 CFR 355 Appendix A), SARA Section 313 (40 CFR 372.65), CERCLA (40 CFR 302.4) and/or TSCA 12(b).

**Diethanolamine (111-42-2)**

**SARA 313:** 1.0 % de minimis concentration
**CERCLA:** 100 lb final RQ; 45.4 kg final RQ

**SARA 311/312 Hazardous Categories (40 CFR 370 Subparts B and C)**

**Acute Health:** Yes **Chronic Health:** Yes **Fire:** No **Pressure:** No **Reactive:** No

## State Regulations

Other state regulations may apply.

### Component Analysis - State

The following components appear on one or more of the following state hazardous substances lists:

| Component | CAS | CA | MA | MN | NJ | PA | RI |
|---|---|---|---|---|---|---|---|
| Triethylenetetramine | 112-24-3 | No | Yes | No | Yes | Yes | |
| Diethylenetriamine | 111-40-0 | Yes | Yes | Yes | Yes | Yes | |
| Diethanolamine | 111-42-2 | Yes | Yes | Yes | Yes | Yes | |

The following statement(s) are provided under the California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65):
WARNING! This product contains a chemical known to the state of California to cause cancer.

## Canadian WHMIS Information

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all the information required by the Controlled Products Regulations.

**WHMIS Classification:** D2A, D2B, E

### Component Analysis - WHMIS IDL

The following components are identified under the Canadian Hazardous Products Act Ingredient Disclosure List:

**Triethylenetetramine (112-24-3)**
0.1 %

**Diethylenetriamine (111-40-0)**
0.1 %

## Additional Regulatory Information

No additional information is available.

**Component Analysis - Inventory**

| Component | CAS # | TSCA | CAN |
|---|---|---|---|
| Triethylenetetramine | 112-24-3 | Yes | DSL |
| Diethylenetriamine | 111-40-0 | Yes | DSL |
| Diethanolamine | 111-42-2 | Yes | DSL |

## * * * Section 16 - Other Information * * *

### Other Information

No additional information is available.

### MSDS History

New MSDS: July 06, 2012

### Key/Legend

ACGIH = American Conference of Governmental Industrial Hygienists; CAS = Chemical Abstracts Service; CERCLA = Comprehensive Environmental Response, Compensation, and Liability Act; CFR = Code of Federal Regulations; CPR = Controlled Products Regulations; DOT = Department of Transportation; DSL = Domestic Substances List; EINECS = European Inventory of Existing Commercial Chemical Substances; EPA = Environmental Protection Agency; IARC = International Agency for Research on Cancer; IATA = International Air Transport Association; mg/Kg = milligrams per Kilogram; mg/L = milligrams per Liter; mg/m3 = milligrams per Cubic Meter; MSHA = Mine Safety and Health Administration; NA = Not Applicable or Not Available; NIOSH = National Institute for Occupational Safety and Health; NJTSR = New Jersey Trade Secret Registry; NTP = National Toxicology Program; OSHA = Occupational Safety and Health Administration; SARA = Superfund Amendments and Reauthorization Act; TDG = Transport Dangerous Goods; TSCA = Toxic Substances Control Act; WHMIS = Workplace Hazardous Materials Information System.

End of Sheet WWHC-012