

MATERIAL SAFETY DATA SHEET

SECTION 1 – IDENTIFICATION

Manufacturer's name and address:



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

Supplier's name and address:

Refer to Manufacturer

Information Telephone No. : (724) 203-5000
Website Address : <http://www.ardexamericas.com>
24 Hr Emergency Telephone # : CHEM-TEL: 1-800255-3924 OR 1-813-248-0585 (call collect)
Product Identifier : **ARDEX MC™ RAPID Hardener (Part B)**
Chemical Name : N/Ap Chemical Family : Mixture
Chemical Formula : N/Ap Trade Name/Synonyms : ARDEX MC RAPID Hardener
Molecular Weight : N/Ap Material Use : Epoxy hardener for moisture barrier

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

Recommended PPE: Gloves, safety glasses with side shields, protective clothing

SECTION 2 – HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW : **DANGER! Combustible liquid and vapor. Corrosive. Causes skin and eye burns. Harmful if inhaled, swallowed, or absorbed through the skin. Contains components that may be easily absorbed through the skin. May cause severe irritation to the respiratory tract if vapors are inhaled. May cause allergic respiratory or skin reactions.**

Keep away from heat and flame. Do NOT get into eyes, on skin or on clothing. Do NOT breathe vapor. Do NOT swallow. Wash thoroughly after handling. Clean contaminated clothing before reuse. Keep container tightly closed. Use only with adequate ventilation. Avoid prolonged contact with skin.

Material Description : Yellow liquid with amine odor.

OSHA Classification : This material is classified as hazardous under OSHA regulations (29 CFR Part 1910.1200).

WHMIS Classification : This material is a controlled product under the criteria specified in the Canadian Workplace Hazardous Materials Information System (WHMIS)
Class D2A (Materials Causing Other Toxic Effects, Very Toxic Material)
Class D2B (Materials Causing Other Toxic Effects, Toxic Material)
Class E (Corrosive).

POTENTIAL HEALTH EFFECTS

Target organs : Kidneys, Liver.

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

Signs and symptoms of short-term (acute) exposure

Inhalation : Vapors are harmful if inhaled. May cause severe irritation to the respiratory system producing coughing and difficulty breathing. Inhalation may cause an allergic respiratory reaction

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.

Eyes : Causes burns if in contact with the eyes.

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

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 or of the respiratory system after an initial exposure. Subsequent exposures may cause a hypersensitive skin reaction (rash, swelling) or asthma.

Conditions aggravated by overexposure

: Pre-existing skin, eye, and respiratory disorders.

Carcinogenic status

: See TOXICOLOGICAL INFORMATION, Section 11.

Additional health hazards

: Respiratory or skin sensitization. See TOXICOLOGICAL INFORMATION, Section 11.

Potential environmental effects

: Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment. See ECOLOGICAL INFORMATION, Section 12.

SECTION 3 – COMPOSITION/INFORMATION ON INGREDIENTS

Ingredients	CAS #	% (by weight)	ACGIH TLV		OSHA PEL	
			TLV	STEL	PEL	STEL
4-tert-Butylphenol	98-54-4	30.00 – 60.00	N/Av	N/Av	N/Av	N/Av
m-Xylene- α,α' -diamine	1477-55-0	30.00 – 60.00	0.1 mg/m ³ CEIL	N/Av	0.1 mg/m ³ CEIL	N/Av
Trimethylhexamethylenediamine	25620-58-0	10.00 – 30.00	N/Av	N/Av	N/Av	N/Av
2,4,6-Tri(dimethylaminomethyl)phenol	90-72-2	1.00 – 5.00	N/Av	N/Av	N/Av	N/Av
Benzyl alcohol	100-51-6	1.00 – 5.00	N/Av	N/Av	10 ppm TLV 44.2 mg/m ³	N/Av
3-(Dimethylamino)-propylamine	109-55-7	0.10 – 1.00	N/Av	N/Av	N/Av	N/Av

SECTION 4 – FIRST AID MEASURES

Inhalation : If inhaled, move to fresh air. If breathing is difficult, give oxygen by qualified medical personnel only. If not breathing, clear airway and start artificial respiration. Seek immediate medical attention/advice.

Skin contact : Remove/Take off immediately all contaminated clothing. Flush affected skin with gently flowing lukewarm water for at least 20 minutes. Seek immediate medical attention/advice.

Eye contact : Immediately flush eyes thoroughly with running water for at least 20 to 30 minutes. Seek immediate medical attention/advice.

Ingestion : Never give anything by mouth to an unconscious person. Rinse mouth with water. Do NOT induce vomiting. Have victim drink one to two glasses of water. Seek immediate medical attention/advice.

Notes for Physician : Treat symptomatically.

SECTION 5 – FIRE FIGHTING MEASURES

Fire hazards/conditions of flammability

: Material is a combustible liquid.

Flammability classification (OSHA 29 CFR 1910.1200)

: Combustible

Flash point : >169°F (>76°C) **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 discharge at room temperature. Static discharge at > 76°C could ignite vapors.

Suitable extinguishing media : Use extinguishing media appropriate for surrounding materials.

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

SECTION 6 – ACCIDENTAL RELEASE MEASURES

- Personal precautions** : Corrosive! See Section 7 for safe handling procedures. Wear chemically resistant personal protective equipment during clean-up. 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

- 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.
- Skin protection** : Wear chemical resistant protective clothing and impervious gloves. Materials such as nitrile rubber or Viton (fluorocarbon rubber) are recommended.
- Eye / face protection** : Chemical goggles must be worn when using this product. A face shield is recommended if splashing is possible.
- Other protective equipment** : Where extensive exposure to product is possible, use resistant coveralls, apron and boots to prevent contact. 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.
- Permissible exposure levels** : For individual ingredient exposure levels, see Section 3.

SECTION 9 – PHYSICAL AND CHEMICAL PROPERTIES

Physical state	: Liquid	Appearance	: Yellowish
Odor	: Amine	Odor threshold	: N/Av
pH	: N/Av	Specific gravity	: 1.0
Boiling point	: >392°F (>200°C)	Coefficient of water/oil distribution	: N/Av
Melting/Freezing point	: N/Av	Solubility in water	: Immiscible
Vapor pressure (mm Hg @ 20°C / 68°F)	: N/Av	Evaporation rate (n-Butyl acetate = 1)	: N/Av
Vapor density (Air = 1)	: N/Av	Volatiles (% by weight)	: N/Av
Volatile organic compounds (VOCs)	: N/Av	General information	: N/Av
Particle size	: N/Av	Flammability properties	: See Section 5.

SECTION 10 – REACTIVITY AND STABILITY INFORMATION

- Stability and reactivity** : 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

- Toxicological data** : There is no available data for the product itself, only for the ingredients. Based on individual components, this product is harmful if inhaled, swallowed, or absorbed through the skin. Contains components that may be absorbed through the skin in harmful amounts. See below for individual ingredient acute toxicity data.

Ingredients	LC50 (4 hr) Inhalation, rat	LD50	
		Oral, rat	Dermal, rabbit
4-tert-Butylphenol	> 5/6 mg/L	2990 mg/kg	2318 mg/kg
m-Xylene- α,α' -diamine	1.36 mg/L	930 mg/kg	2000 mg/kg
Trimethylhexamethylenediamine	N/Av	910 mg/kg	N/Av
2,4,6-Tri(dimethylaminomethyl)phenol	N/Av	1000 mg/kg	1280 mg/kg
Benzyl alcohol	8.8 mg/L	1230 mg/kg	2000 mg/kg
3-(Dimethylamino)-propylamine	>4.31 mg/L	922 mg/kg	487 mg/kg

- Repeated Dose Effects** : Contains a component which causes liver and kidney damage after repeated or prolonged exposure. 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** : None known.
- Teratogenicity** : None known.
- Mutagenicity** : None known.
- Epidemiology** : Not available.
- Target Organ Effects** : Contains a component which causes kidney and liver damage.
- Sensitization to material** : Contains multiple components which are known to cause skin sensitization reactions. Contains a component that may cause sensitization through inhalation.

- 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.

4-tert-Butylphenol (98-54-4)

Test & Species

96 Hr LC50 Pimephales promelas

96 Hr LC50 Cyprinus carpio

72 Hr EC50 Desmodemus subspicatus

48 Hr EC50 Daphnia magna

48 Hr EC50 Daphnia magna

Results & Conditions

4.71-5.62 mg/L [flow-through]

6.9 mg/L [static]

11.2 mg/L

3.9 mg/L

3.4 - 4.5 mg/L [Static]

Trimethylhexamethylenediamine (25620-58-0)

Test & Species

48 Hr LC50 Leuciscus idus

72 Hr EC50 Desmodemus subspicatus

24 Hr EC50 Daphnia magna

Results & Conditions

172 mg/L [static]

29.5 mg/L

31.5 mg/L

M-Xylene- α,α' -diamine -(1477-55-0)

96 Hr LC50 Oncorhynchus mykiss

48 Hr EC50 Daphnia magna

> 100 mg/L

16 mg/L

Benzyl alcohol (100-51-6)

Test & Species

96 Hr LC50 Pimephales promelas

96 Hr LC50 Lepomis macrochirus

3 Hr EC50 Anabaena variabilis

48 Hr EC50 water flea

Results & Conditions

460 mg/L [static]

10 mg/L [static]

35 mg/L

23 mg/L

3-(Dimethylamino)-propylamine (109-55-7)

Test & Species

96 Hr LC50 Leuciscus idus

72 Hr EC50 Desmodemus subspicatus

96 Hr EC50 Desmodemus subspicatus

48 Hr EC50 Daphnia magna

Results & Conditions

122 mg/L [static]

56.2 mg/L

57.5 mg/L

59.5 mg/L

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** : 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. 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 enter 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 1760	Corrosive liquids, n.o.s. (Contains: m-Xylene- α , α' -diamine, Trimethylhexamethylenediamine)	8	III	
TDG Additional Information	None				
49 CFR/DOT	UN 1760	Corrosive liquids, n.o.s. (Contains: m-Xylene- α , α' -diamine, Trimethylhexamethylenediamine)	8	III	
49 CFR/DOT Additional Information	Material is also classified as a combustible liquid with a flashpoint >169°F (>76°C).				

SECTION 15 – REGULATORY INFORMATION

Canadian Information:

Canadian WHMIS Classification: This product is a WHMIS Controlled Product. It meets one or more of the criteria for a controlled product provided in Part IV of the Controlled Products Regulations (CPR). Refer to Section 2 for a WHMIS Classification for this product.

This product has been classified according to the hazard criteria of the CPR and the MSDS contains all of the information required by the CPR.

Canadian Environmental Protection Act (CEPA) information: All ingredients listed appear on the Domestic Substances List (DSL). It contains the following components on the Canadian HPA Ingredient Disclosure List:

Component	CAS #	Minimum Concentration
m-Xylene- α , α' -diamine	1477-55-0	1 %
4-tert-Butylphenol	98-54-4	1 %
Trimethylhexamethylenediamine	25620-58-0	1 %
Benzyl alcohol	100-51-6	1 %

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. 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: This product does not contain any chemicals known to the State of California to cause cancer and/or reproductive effects.

Other State Right to Know Laws:

Component	CAS	CA	MA	MN	NJ	PA	RI
m-Xylene- α , α' -diamine	1477-55-0	Yes	Yes	Yes	Yes	Yes	Yes
Trimethylhexamethylenediamine	25620-58-0	No	No	No	Yes	No	No
Benzyl alcohol	100-51-6	No	Yes	Yes	No	Yes	No
3-(Dimethylamino)-propylamine	109-55-7	No	Yes	No	Yes	Yes	No

SECTION 16 – OTHER INFORMATION

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
- 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

References

- : 1. ACGIH, Threshold Limit Values and Biological Exposure Indices for 2012.
- 2. International Agency for Research on Cancer Monographs, searched 2012.
- 3. Canadian Centre for Occupational Health and Safety, CCIInfoWeb databases, 2012 (Chempendium and RTECs).
- 4. Material Safety Data Sheet from manufacturer.
- 5. US EPA Title III List of Lists - July 2012 version.
- 6. California Proposition 65 List - July 05, 2013 version

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. This Material Safety Data Sheet is valid for three (3) years.

Prepared By:
ARDEX Engineered Cements
400 Ardex Park Drive
Aliquippa, PA, U.S.A.
15001

(724) 203-5000
Visit our Website: <http://www.ardexamericas.com>

Revision date: : 25-Nov-2013

End of Document