

SAFETY DATA SHEET

in accordance with 1907/2006/EC (REACH, as amended by 2015/830/EU) 29 CFR 1910.1200 and WHMIS 2015

Revision date: 26 April 2018 **Initial date of issue:** 18 May 2007 **SDS No.** 340B-8a

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1. Product identifier

ARC MX2 (Part B)

1.2. Relevant identified uses of the substance or mixture and uses advised against

ARC Polymer Composite. Repair damage caused by impact, abrasion, erosion or corrosion; rebuild worn areas; fill holes and cracks; provide abrasion resistant surfaces.

1.3. Details of the supplier of the safety data sheet

Company:

A.W. CHESTERTON COMPANY
860 Salem Street
Groveland, MA 01834-1507, USA
Tel. +1 978-469-6446 Fax: +1 978-469-6785
(Mon. - Fri. 8:30 - 5:00 PM EST)
SDS requests: www.chesterton.com
E-mail (SDS questions): ProductMSDSs@chesterton.com
E-mail: customer.service@chesterton.com

Supplier:

Canada: A.W. Chesterton Company Ltd., 889 Fraser Drive,
Unit 105, Burlington, Ontario L7L 4X8 - Tel. 905-335-5055
EU: Chesterton International GmbH, Am Lenzenfleck 23,
D85737 Ismaning, Germany – Tel. +49-89-996-5460

1.4. Emergency telephone number

24 hours per day, 7 days per week
Call Infotrac: 1-800-535-5053
Outside N. America: +1 352-323-3500 (collect)
NSW Poisons Information Centre (Australia): 13 11 26

SECTION 2: HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture

2.1.1. Classification according to Regulation (EC) No 1272/2008 [CLP] / 29 CFR 1910.1200 / WHMIS 2015 / GHS

Skin Corr. 1B, H314
Eye Dam. 1, H318
Acute Tox. 4, H302
Skin Sens. 1, H317

2.1.2. Classification according to WHMIS 1988

E: Corrosive materials; D2A: Very toxic materials causing other effects; D2B: Toxic materials causing other effects

2.1.3. Australian statement of hazardous nature

Hazardous according to criteria of Safe Work Australia.

2.1.4. Additional information

For full text of H-statements: see SECTIONS 2.2 and 16.

2.2. Label elements

Labelling according to Regulation (EC) No 1272/2008 [CLP] / 29 CFR 1910.1200 / WHMIS 2015 / GHS

Hazard pictograms:



Signal word:

Danger

Hazard statements:	H314	Causes severe skin burns and eye damage.
	H302	Harmful if swallowed.
	H317	May cause an allergic skin reaction.
Precautionary statements:	P270	Do not eat, drink or smoke when using this product.
	P280	Wear protective gloves/clothing and eye/face protection.
	P301/330/331	IF SWALLOWED: rinse mouth. Do NOT induce vomiting.
	P303/361/353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
	P305/351/338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
	P310	Immediately call a POISON CENTER or doctor/physician.
	P333/313	If skin irritation or rash occurs: Get medical advice/attention.
	P363	Wash contaminated clothing before reuse.
	P405	Store locked up.
	P501	Dispose of contents/container to an approved waste disposal plant.

Supplemental information: None

2.3. Other hazards

The safety and health hazards are detailed separately for Part A and Part B. The final cured material is considered nonhazardous. Upon machining, refer to the precautions in the safety data sheets for Part A and Part B.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.2. Mixtures

Hazardous Ingredients ¹	% Wt.	CAS No./ EC No.	REACH Reg. No.	CLP/GHS Classification
1,2-Ethanediamine, N-(2-aminoethyl)-, reaction products with bisphenol A diglycidyl ether homopolymer	10-15	68411-71-2 270-141-2	NA	Acute Tox. 4, H302
Diethylenetriamine*	5-10	111-40-0 203-865-4	01-211947 3793-27	Acute Tox. 2, H330 Acute Tox. 4, H312, H302 Skin Corr. 1B, H314 Eye Dam. 1, H318 Skin Sens. 1, H317 STOT SE 3, H335
Benzyl alcohol	1-5	100-51-6 202-859-9	NA	Acute Tox. 4, H332, H302 Eye Irrit. 2, H302
N-(3-(trimethoxysilyl)propyl)ethylenediamine	0.1-0.9	1760-24-3 217-164-6	01-211997 0215-39	Acute Tox. 4, H332 Eye Dam. 1, H318 Skin Sens. 1, H317
Other ingredients: Aluminum oxide	60-70	1344-28-1 215-691-6	NA	Not classified**

For full text of H-statements: see SECTION 16.

*This component is toxic by inhalation if sprayed or if aerosol/mist is created. The mixture is neither present in aerosol form nor may aerosols occur.

**Substance with a workplace exposure limit.

¹ Classified according to: * 29 CFR 1910.1200, 1915, 1916, 1917, Mass. Right-to-Know Law (ch. 40, M.G.L..O. 111F), California Proposition 65
* 1272/2008/EC, GHS, REACH
* WHMIS 2015
* Safe Work Australia

SECTION 4: FIRST AID MEASURES**4.1. Description of first aid measures**

- Inhalation:** Remove to fresh air. If not breathing, administer artificial respiration. Contact physician.
- Skin contact:** Flood area with water while removing contaminated clothing. Wash clothing before reuse. Consult physician.
- Eye contact:** Flush eyes for at least 30 minutes with large amounts of water. Contact physician if irritation persists.
- Ingestion:** Do not induce vomiting without medical advice. If person is conscious, rinse mouth with water and give small quantities of water to drink. Contact physician immediately.

4.2. Most important symptoms and effects, both acute and delayed

Direct contact causes eye and skin irritation; possibly burns. High vapor concentrations can cause severe eye and respiratory tract irritation, coughing and labored breathing. Prolonged or repeated contact may cause asthma, skin sensitization and other allergic responses.

4.3. Indication of any immediate medical attention and special treatment needed

Treat symptoms.

SECTION 5: FIREFIGHTING MEASURES**5.1. Extinguishing media**

Suitable extinguishing media: Carbon dioxide, dry chemical, foam, water fog

Unsuitable extinguishing media: No data available

5.2. Special hazards arising from the substance or mixture

None

5.3. Advice for firefighters

Cool exposed containers with water. Recommend Firefighters wear self-contained breathing apparatus.

Flammability Classification: –

HAZCHEM Emergency Action Code: 2 Z

SECTION 6: ACCIDENTAL RELEASE MEASURES**6.1. Personal precautions, protective equipment and emergency procedures**

Provide adequate ventilation. Avoid skin contact. Utilize exposure controls and personal protection as specified in Section 8.

6.2. Environmental Precautions

Keep out of sewers, streams and waterways.

6.3. Methods and material for containment and cleaning up

Evacuate area. Scoop up and transfer to a suitable container for disposal.

6.4. Reference to other sections

Refer to section 13 for disposal advice.

SECTION 7: HANDLING AND STORAGE**7.1. Precautions for safe handling**

Do not eat, drink or smoke when using this product. Remove contaminated clothing immediately. Wash clothing before reuse. Contaminated work clothing must not be allowed out of the workplace. Contaminated leather including shoes cannot be decontaminated and should be discarded. Utilize exposure controls and personal protection as specified in Section 8. Avoid creating and breathing dust during removal, drilling, grinding, sawing or sanding.

7.2. Conditions for safe storage, including any incompatibilities

Store in a cool, dry area.

7.3. Specific end use(s)

No special precautions.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION**8.1. Control parameters****Occupational exposure limit values**

Ingredients	OSHA PEL ¹		ACGIH TLV ²		UK WEL ³		AUSTRALIA ES ⁴	
	ppm	mg/m ³	ppm	mg/m ³	ppm	mg/m ³	ppm	mg/m ³
1,2-Ethanediamine, N-(2-aminoethyl)-, reaction products with bisphenol A diglycidyl ether homopolymer	–	–	–	–	–	–	–	–
Diethylenetriamine	1	4	1 (skin)	4.2	1	4.3	1 (skin)	4.2
Benzyl alcohol	–	–	–	–	–	–	–	–
N-(3-(trimethoxysilyl)propyl)ethylene diamine	–	–	–	–	–	–	–	–
Aluminum oxide	(resp) (total)	5 15	(resp)	1	(inhal) (resp)	10 4	(insp)	10

¹ United States Occupational Health & Safety Administration permissible exposure limits

² American Conference of Governmental Industrial Hygienists threshold limit values

³ EH40 Workplace exposure limits, Health & Safety Executive

⁴ Adopted National Exposure Standards for Atmospheric Contaminants in the Occupational Environment [NOHSC:1003]

Derived No Effect Level (DNEL) according to Regulation (EC) No 1907/2006:**Workers**

Substance	Route of exposure	Potential health effects	DNEL
Benzyl alcohol	Inhalation	Acute effects, local / Chronic effects, local	No data available
		Acute effects, systemic	110 mg/m ³
	Chronic effects, systemic	22 mg/m ³	
	Dermal	Acute effects, local / Chronic effects, local	No data available
Acute effects, systemic		40 mg/kg bw/day	
Chronic effects, systemic		8 mg/kg bw/day	
N-(3-(trimethoxysilyl)propyl)ethylenediamine		Inhalation	Chronic effects, systemic
	Dermal	Acute effects, systemic / Chronic effects, systemic	5 mg/kg bw/day

Predicted No Effect Concentration (PNEC) according to Regulation (EC) No 1907/2006:

Substance	Environmental protection target	PNEC
Benzyl alcohol	Fresh water	1 mg/l
	Marine water	0.1 mg/l
	Water, intermittent release	2.3 mg/l
	Freshwater sediments	5.27 mg/kg
	Marine sediments	0.527 mg/kg
	Microorganisms in sewage treatment	39 mg/l
	Soil (agricultural)	0.456 mg/kg bw/day
	Food chain	No hazard identified
	N-(3-(trimethoxysilyl)propyl)ethylenediamine	Fresh water
Marine water		0.0062 mg/l
Freshwater sediments		0.048 mg/kg
Marine sediments		0.0048 mg/kg
Microorganisms in sewage treatment		25 mg/l
Soil (agricultural)		0.0075 mg/kg

8.2. Exposure controls**8.2.1. Engineering measures**

Provide sufficient ventilation to keep the vapor concentrations below the exposure limit. If it is necessary to alter the final cured product such that dust may be generated, use adequate dust extraction or damp down.

8.2.2. Individual protection measures

Respiratory protection: Not normally needed. If exposure limits are exceeded, use an approved organic vapor respirator (e.g., EN filter type A-P2).

Protective gloves: Chemical resistant gloves (e.g., natural rubber, neoprene or PVC).

Diethylenetriamine:

Contact type	Glove material	Layer thickness	Breakthrough time*
Full	neoprene	0.65 mm	> 480 min.
Splash	natural rubber	0.6 mm	> 60 min.

*Determined according to EN374 standard.

Eye and face protection: Safety goggles.

Other: Impervious clothing as necessary to prevent skin contact.

8.2.3. Environmental exposure controls

Refer to sections 6 and 12.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES**9.1. Information on basic physical and chemical properties**

Physical state	paste	Odour	strong ammonia odor
Colour	white	Odour threshold	not determined
Initial boiling point	not determined	Vapour pressure @ 20°C	not determined
Melting point	not determined	% Aromatics by weight	None
% Volatile (by volume)	None	pH	not applicable
Flash point	> 200°C (> 400°F)	Relative density	2.37 kg/l
Method	PM Closed Cup	Weight per volume	19.69 lbs/gal.
Viscosity	approx. 50.000 cps	Coefficient (water/oil)	< 1
Autoignition temperature	not determined	Vapour density (air=1)	> 1
Decomposition temperature	not determined	Rate of evaporation (ether=1)	< 1
Upper/lower flammability or explosive limits	not determined	Solubility in water	very slight
Flammability (solid, gas)	not applicable	Oxidising properties	not determined
Explosive properties	not determined		

9.2. Other information

None

SECTION 10: STABILITY AND REACTIVITY**10.1. Reactivity**

Refer to sections 10.3 and 10.5.

10.2. Chemical stability

Stable

10.3. Possibility of hazardous reactions

No dangerous reactions known under conditions of normal use.

10.4. Conditions to avoid

Open flames and high temperatures.

10.5. Incompatible materials

Strong oxidizers like liquid Chlorine and concentrated Oxygen.

10.6. Hazardous decomposition products

Carbon Monoxide, Carbon Dioxide, NOx, amines and other toxic fumes.

SECTION 11: TOXICOLOGICAL INFORMATION**11.1. Information on toxicological effects**

Primary route of exposure under normal use: Inhalation, skin and eye contact. Personnel with pre-existing lung disease may be aggravated by exposure.

Acute toxicity -

Oral: Harmful if swallowed. ATE-mix: 1937.6 mg/kg.

Substance	Test	Result
Diethylenetriamine	LD50, rat	1080 mg/kg
Benzyl alcohol	LD50, rat	1230 mg/kg
Aluminum oxide	LD50, rat	> 5000 mg/kg
N-(3-(trimethoxysilyl)propyl)ethylenediamine	LD50, rat	2295 mg/kg
1,2-Ethanediamine, N-(2-aminoethyl)-, reaction products with bisphenol A diglycidyl ether homopolymer	LD50, rat	200-500 mg/kg

Dermal: ATE-mix: 16650 mg/kg.

Substance	Test	Result
Diethylenetriamine	LD50, rabbit	1090 mg/kg
Benzyl alcohol	LD50, rabbit	2000 mg/kg
N-(3-(trimethoxysilyl)propyl)ethylenediamine	LD50, rabbit	2009 mg/kg

Inhalation: ATE-mix: 679 mg/l (vapor). High vapor concentrations can cause severe eye and respiratory tract irritation, coughing and labored breathing.

Substance	Test	Result
Benzyl alcohol	LC50, rat, 4 h	11 mg/l (cATpE, vapor)
Diethylenetriamine	LC50, rat, 4 h	No mortality at vapor saturation level

Skin corrosion/irritation: Causes burns.

Substance	Test	Result
Diethylenetriamine	Skin irritation, rabbit	Corrosive

Serious eye damage/irritation: Causes serious eye damage.

Substance	Test	Result
Diethylenetriamine	Eye irritation	Corrosive

Respiratory or skin sensitisation: Prolonged or repeated contact may cause asthma, skin sensitization and other allergic responses.

Substance	Test	Result
Diethylenetriamine	Skin sensitization, guinea pig	Sensitizing

Germ cell mutagenicity: Benzyl alcohol, Diethylenetriamine: based on available data, the classification criteria are not met.

Carcinogenicity: As per 29 CFR 1910.1200 (Hazard Communication), this product contains no carcinogens as listed by the National Toxicology Program (NTP), the International Agency for Research on Cancer (IARC), the Occupational Safety and Health Administration (OSHA) or Regulation (EC) No 1272/2008.

Reproductive toxicity: Diethylenetriamine: not expected to cause toxicity.

STOT-single exposure: Diethylenetriamine: may cause respiratory irritation.

STOT-repeated exposure: Diethylenetriamine, Benzyl alcohol: based on available data, the classification criteria are not met.

Aspiration hazard: Based on available data, the classification criteria are not met.

Other information: None known

SECTION 12: ECOLOGICAL INFORMATION

Ecotoxicological data have not been determined specifically for this product. The information given below is based on a knowledge of the components and the ecotoxicology of similar substances.

12.1. Toxicity

N-(3-(trimethoxysilyl)propyl)ethylenediamine: 48 h EC50 (for daphnia) = 81 mg/l; 72 h ErC50 (for algae) = 8.8 mg/l (OECD 201).

12.2. Persistence and degradability

Diethylenetriamine: expected to be resistant to biodegradation. Benzyl alcohol: expected to biodegrade relatively quickly. N-(3-(trimethoxysilyl)propyl)ethylenediamine: biodegradation = 39% (OECD 301A), not readily biodegradable. Unreacted components (Parts A and B), improperly released to the environment, can cause ground and water pollution.

12.3. Bioaccumulative potential

Diethylenetriamine, Benzyl alcohol: bioconcentration in aquatic organisms is not expected to be significant (log Kow: -2.13). N-(3-(trimethoxysilyl)propyl)ethylenediamine: Octanol/water partition coefficient (log Pow) = -0.3.

12.4. Mobility in soil

Paste. Solubility in water: very slight. In determining environmental mobility, consider the product's physical and chemical properties (see Section 9). Diethylenetriamine, Benzyl alcohol: expected to be highly mobile in soil.

12.5. Results of PBT and vPvB assessment

Not available

12.6. Other adverse effects

None known

SECTION 13: DISPOSAL CONSIDERATIONS**13.1. Waste treatment methods**

Combine resin and curative. The final cured material is considered nonhazardous. Landfill sealed containers with a properly licensed facility. Unreacted components are a special waste (classified as hazardous according to 2008/98/EC). Check local, state and national/federal regulations and comply with the most stringent requirement.

SECTION 14: TRANSPORT INFORMATION**14.1. UN number**

ADR/RID/ADN/IMDG/ICAO:	UN1760
TDG:	UN1760
US DOT:	UN1760

14.2. UN proper shipping name

ADR/RID/ADN/IMDG/ICAO:	CORROSIVE LIQUIDS, N.O.S. (CONTAINS DIETHYLENETRIAMINE)
TDG:	CORROSIVE LIQUIDS, N.O.S. (CONTAINS DIETHYLENETRIAMINE)
US DOT:	CORROSIVE LIQUIDS, N.O.S. (CONTAINS DIETHYLENETRIAMINE)

14.3. Transport hazard class(es)

ADR/RID/ADN/IMDG/ICAO:	8
TDG:	8
US DOT:	8

14.4. Packing group

ADR/RID/ADN/IMDG/ICAO:	III
TDG:	III
US DOT:	III

14.5. Environmental hazards

NO ENVIRONMENTAL HAZARDS

14.6. Special precautions for user

NO SPECIAL PRECAUTIONS FOR USER

14.7. Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code

NOT APPLICABLE

14.8. Other information

US DOT: Shipped as Consumer Commodity ORM-D in packaging having a rated capacity gross weight of 66 lb. or less (49 CFR 173.154(c)). ERG NO. 154

IMDG: EmS F-A, S-B, IMDG segregation group 18-Alkalis

ADR: Classification code C9, Tunnel restriction code (E)

SECTION 15: REGULATORY INFORMATION**15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture****15.1.1. EU regulations**

Authorisations under Title VII: Not applicable

Restrictions under Title VIII: None

Other EU regulations: Directive 94/33/EC on the protection of young people at work.

15.1.2. National regulations**US EPA SARA TITLE III****312 Hazards:**

Immediate

313 Chemicals:

None

Other national regulations: National implementation of the EC Directive referred to in section 15.1.1.

15.2. Chemical safety assessment

No Chemical Safety Assessment has been carried out for this substance/mixture by the supplier.

SECTION 16: OTHER INFORMATION

Abbreviations and acronyms: ADN: European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways
 ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road
 ATE: Acute Toxicity Estimate
 BCF: Bioconcentration Factor
 cATpE: Converted Acute Toxicity point Estimate
 CLP: Classification Labelling Packaging Regulation (1272/2008/EC)
 ES: Exposure Standard
 GHS: Globally Harmonized System
 ICAO: International Civil Aviation Organization
 IMDG: International Maritime Dangerous Goods
 LC50: Lethal Concentration to 50 % of a test population
 LD50: Lethal Dose to 50% of a test population
 LOEL: Lowest Observed Effect Level
 N/A: Not Applicable
 NA: Not Available
 NOEC: No Observed Effect Concentration
 NOEL: No Observed Effect Level
 OECD: Organization for Economic Co-operation and Development
 PBT: Persistent, Bioaccumulative and Toxic substance
 (Q)SAR: Quantitative Structure-Activity Relationship
 REACH: Registration, Evaluation, Authorisation and Restriction of Chemicals Regulation (1907/2006/EC)
 REL: Recommended Exposure Limit
 RID: Regulations concerning the International Carriage of Dangerous Goods by Rail
 SDS: Safety Data Sheet
 STEL: Short Term Exposure Limit
 STOT RE: Specific Target Organ Toxicity, Repeated Exposure
 STOT SE: Specific Target Organ Toxicity, Single Exposure
 TDG: Transportation of Dangerous Goods (Canada)
 TWA: Time Weighted Average
 US DOT: United States Department of Transportation
 vPvB: very Persistent and very Bioaccumulative substance
 WEL: Workplace Exposure Limit
 WHMIS: Workplace Hazardous Materials Information System
 Other abbreviations and acronyms can be looked up at www.wikipedia.org.

Key literature references and sources for data: Commission des normes, de l'équité, de la santé et de la sécurité du travail (CNESST)
 Chemical Classification and Information Database (CCID)
 European Chemicals Agency (ECHA) - Information on Chemicals
 Hazardous Chemical Information System (HCIS)
 National Institute of Technology and Evaluation (NITE)
 Swedish Chemicals Agency (KEMI)
 U.S. National Library of Medicine Toxicology Data Network (TOXNET)

Procedure used to derive the classification for mixtures according to Regulation (EC) No 1272/2008 [CLP] / GHS:

Classification	Classification procedure
Skin Corr. 1B, H314	Calculation method
Eye Dam. 1, H318	Calculation method
Acute Tox. 4, H302	Calculation method
Skin Sens. 1, H317	Calculation method

Relevant H-statements: H302: Harmful if swallowed.
H312: Harmful in contact with skin.
H314: Causes severe skin burns and eye damage.
H317: May cause an allergic skin reaction.
H318: Causes serious eye damage.
H330: Fatal if inhaled.
H332: Harmful if inhaled.

Hazard pictogram names: Corrosion, exclamation mark

Changes to the SDS in this revision: Section 1.3.

Date of last revision: 26 April 2018

Further information: None

This information is based solely on data provided by suppliers of the materials used, not on the mixture itself. No warranty is expressed or implied regarding the suitability of the product for the user's particular purpose. The user must make their own determination as to suitability.