

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: 23 June 2017 **Initial date of issue:** 6 July 2007 **SDS No.** 228B-18

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

1.1. Product identifier

ARC 10 (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 or erosion and chemical attack.

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
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

Supplier:

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; 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, protective clothing and eye/face protection.
	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.
	P301/330/331	IF SWALLOWED: rinse mouth. Do NOT induce vomiting.
	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	20-30	68411-71-2 270-141-2	NA	Acute Tox. 4, H302
Diethylenetriamine*	7-13	111-40-0 203-865-4	01-211947 3793-27	Acute Tox. 2, H330 Acute Tox. 4, H302/312 Skin Corr. 1B, H314 Eye Dam. 1, H318 STOT SE 3, H335 Skin Sens. 1, H317 Self-Heat. 2, H252
Iron oxide	1-5	1317-61-9 215-277-5	NA	Self-Heat. 2, H252
Other ingredients: Silicon	5-10	7440-21-3 231-130-8	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 immediately.

Skin contact: Flood area with water while removing contaminated clothing. Contact physician.

Eye contact: Flush eyes for at least 30 minutes with large amounts of water. Contact physician.

Ingestion: Do not induce vomiting. Contact physician immediately.

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

Corrosive to eyes, skin and mucous membranes, which can result in strong irritation, burning and tissue damage. Vapors can be severely irritating to the eyes and respiratory tract. 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. Application of corticosteroid cream has been effective in treating skin irritation.

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

Suitable extinguishing media: Carbon dioxide, dry chemical or alcohol-resistant foam

Unsuitable extinguishing media: No data available

5.2. Special hazards arising from the substance or mixture

May generate: ammonia gas, toxic nitrogen oxide gases. Incomplete combustion may form carbon monoxide.

5.3. Advice for firefighters

Recommend Firefighters wear self-contained breathing apparatus. Do not allow runoff from firefighting to enter drains or water courses.

Flammability Classification: –

HAZCHEM Emergency Action Code: 3 Z

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

Evacuate area. Provide adequate ventilation. 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

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**

Avoid all direct contact. Wash thoroughly after handling. Utilize exposure controls and personal protection as specified in Section 8. Remove contaminated clothing immediately. Wash clothing before reuse. Contaminated work clothing should not be allowed out of the workplace. Contaminated leather including shoes cannot be decontaminated and should be discarded. Do not contaminate with sodium nitrite or other nitrosating agents, which could cause the formation of cancer-causing nitrosamine. Do not eat, drink or smoke when using this product.

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 (skin)	4.3	1 (skin)	4.2
Iron oxide	(total) (resp)	15 5	(total) (resp)	10 3	–	–	–	–
Silicon	(total) (resp)	15 5	(total) (resp)	10 3	(total) (resp)	10 4	–	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**

Not available

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

Not available

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

Provide sufficient ventilation to keep the vapor concentrations below the exposure limit. Provide readily accessible eye wash stations and safety showers.

8.2.2. Individual protection measures

Respiratory protection: Not normally needed. In case of insufficient ventilation, wear suitable respiratory equipment (e.g., EN filter type A-P2).

Protective gloves: Chemical resistant gloves (e.g., nitrile rubber, butyl rubber, neoprene, 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: Full face shield with goggles underneath.

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	amine odor
Colour	black	Odour threshold	not determined
Initial boiling point	not applicable	Vapour pressure @ 20°C	< 0.1 mm Hg
Melting point	not determined	% Aromatics by weight	0%
% Volatile (by volume)	< 5%	pH	not applicable
Flash point	> 107°C (> 225°F)	Relative density	2.0 kg/l
Method	Setaflash Closed Cup	Weight per volume	16.7 lbs/gal.
Viscosity	750K – 1250K cps @ 25°C	Coefficient (water/oil)	< 1
Autoignition temperature	not determined	Vapour density (air=1)	> 1
Decomposition temperature	no data available	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	no data available
Explosive properties	no data available		

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 red hot surfaces.

10.5. Incompatible materials

Acids and strong oxidizers like liquid Chlorine and concentrated Oxygen.

10.6. Hazardous decomposition products

Carbon Monoxide, 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 asthma, chronic respiratory disease and skin and eye conditions are generally aggravated by exposure.

Acute toxicity -**Oral:**

Harmful if swallowed. If ingested, severe burns of the mouth and throat, as well as a danger of perforation of the oesophagus and the stomach. ATE-mix = 901 mg/kg.

Substance	Test	Result
Diethylenetriamine	LD50, rat	1080 mg/kg
1,2-Ethanediamine, N-(2-aminoethyl)-, reaction products with bisphenol A diglycidyl ether homopolymer	LD50, rat	200-500 mg/kg

Dermal:

Based on available data on components, the classification criteria are not met. ATE-mix = 9091 mg/kg

Substance	Test	Result
Diethylenetriamine	LD50, rabbit	1090 mg/kg

Inhalation:

Vapors can be severely irritating to the eyes and respiratory tract.

Substance	Test	Result
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:

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, Silicon: not expected to cause toxicity.

STOT-single exposure:

Diethylenetriamine: May cause respiratory irritation.

STOT-repeated exposure:

Diethylenetriamine: 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

Many aquatic species are intolerant to corrosive material such as the unreacted curing agent.

12.2. Persistence and degradability

Unreacted components (Parts A and B), improperly released to the environment, can cause ground and water pollution. Diethylenetriamine: expected to be resistant to biodegradation.

12.3. Bioaccumulative potential

Diethylenetriamine: bioconcentration in aquatic organisms is not expected to be significant (log Kow: -2.13).

12.4. Mobility in soil

Liquid. Slightly soluble in water. In determining environmental mobility, consider the product's physical and chemical properties (see Section 9). Diethylenetriamine: 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**

Unreacted components are a special waste (classified as hazardous according to 2008/98/EC). Combine resin and curative. The final cured material is considered nonhazardous. Landfill sealed containers with stabilized and solidified liquids in a properly licensed facility. May be incinerated at an appropriate facility. 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:	UN2735
TDG:	UN2735
US DOT:	UN2735

14.2. UN proper shipping name

ADR/RID/ADN/IMDG/ICAO:	AMINES, LIQUID, CORROSIVE, N.O.S. (CONTAINS DIETHYLENETRIAMINE)
TDG:	AMINES, LIQUID, CORROSIVE, N.O.S. (CONTAINS DIETHYLENETRIAMINE)
US DOT:	AMINES, LIQUID, CORROSIVE, 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. 153

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

ADR: Classification code C7, 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
Delayed

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	Bridging principle "Dilution"

Relevant H-statements: H252: Self-heating in large quantities; may catch fire.
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.
H335: May cause respiratory irritation.

Hazard pictogram names: Corrosion, exclamation mark

Changes to the SDS in this revision: Sections 4.1, 4.2, 4.3, 8.1, 16.

Date of last revision: 23 June 2017

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.