

## SAFETY DATA SHEET

in accordance with 2020/878/EU (REACH, Annex II) 29 CFR 1910.1200, WHMIS 2015 and Safe Work Australia

**Revision:** 13 December 2023

**Date of previous issue:** 27 April 2021

**SDS No.** 228B-20

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

#### 1.1. Product identifier

ARC 10 (Part B)

**Unique Formula Identifier (UFI):** YJP1-1TWQ-16E8-K98Q

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

**Relevant identified uses:** ARC Polymer Composite. Repair damage caused by impact, abrasion or erosion and chemical attack.

**Uses advised against:** No information available

**Reason why uses advised against:** Not applicable

#### 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](http://www.chesterton.com)

E-mail (SDS questions): [ProductSDSs@chesterton.com](mailto:ProductSDSs@chesterton.com)

E-mail: [customer.service@chesterton.com](mailto: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 / Safe Work Australia / GHS**

Acute toxicity, Category 4, H302

Skin corrosion, Category 1B, H314

Serious eye damage, Category 1, H318

Skin sensitization, Category 1, H317

#### 2.1.2. 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 / Safe Work Australia / GHS**

**Hazard pictograms:**



**Signal word:**

Danger

<b>Hazard statements:</b>	H302	Harmful if swallowed.
	H314	Causes severe skin burns and eye damage.
	H317	May cause an allergic skin reaction.
<b>Precautionary statements:</b>	P261	Avoid breathing vapours.
	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 or 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.
	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.
<b>Supplemental information:</b>	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 <sup>1</sup>	% Wt.	CAS No./ EC No.	REACH Reg. No.	CLP/GHS Classification	SCL, M-factor, ATE
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	ATE (oral): 500 mg/kg
Diethylenetriamine*	7-13	111-40-0 203-865-4	NA	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	ATE (oral): 1,553 mg/kg ATE (dermal): 1,045 mg/kg ATE (inhalation, mist): > 0.07 mg/l
Other ingredients: Silicon	5-10	7440-21-3 231-130-8	NA	Not classified**	ATE (oral): > 5,000 mg/kg

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.

<sup>1</sup> Classified according to: • 29 CFR 1910.1200, 1915, 1916, 1917, Mass. Right-to-Know Law (ch. 40, M.G.L..O. 111F)  
• 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 without medical advice. Never give anything by mouth to an unconscious person. If person is conscious, rinse mouth with water and give small quantities of water to drink. Prevent aspiration of vomit. Turn victim's head to the side. Contact physician immediately.
- Protection of first-aiders:** No action shall be taken involving any personal risk or without suitable training. Avoid contact with the product while providing aid to the victim. See section 8.2.2 for recommendations on personal protective equipment.

**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. May cause skin sensitization as evidenced by rashes or hives.

**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**

- Hazardous combustion products:** May generate: ammonia gas, toxic nitrogen oxide gases. Incomplete combustion may form carbon monoxide.
- Other hazards:** Burning produces noxious and toxic fumes.

**5.3. Advice for firefighters**

Recommend Firefighters wear self-contained breathing apparatus. A face shield should be worn. Do not allow runoff from firefighting to enter drains or water courses.

**Australian 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. Avoid breathing vapours. 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 must 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 <sup>1</sup>		ACGIH TLV <sup>2</sup>		UK WEL <sup>3</sup>		AUSTRALIA ES <sup>4</sup>	
	ppm	mg/m <sup>3</sup>	ppm	mg/m <sup>3</sup>	ppm	mg/m <sup>3</sup>	ppm	mg/m <sup>3</sup>
1,2-Ethanediamine, N-(2-aminoethyl)-, reaction products with bisphenol A diglycidyl ether homopolymer	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Diethylenetriamine	1 (Table Z-1-A)	N/A	1 (skin)	4.2	1 (skin)	4.3	1 (skin)	4.2
Silicon	(total) (resp.)	15 5	(total) (resp.)	10 3	(total) (resp.)	10 4	N/A	10

<sup>1</sup> United States Occupational Health & Safety Administration permissible exposure limits

<sup>2</sup> American Conference of Governmental Industrial Hygienists threshold limit values

<sup>3</sup> EH40 Workplace exposure limits, Health & Safety Executive

<sup>4</sup> Safe Work Australia, Workplace Exposure Standards for Airborne Contaminants

**Biological limit values**

No biological exposure limits noted for the ingredient(s).

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

Substance	Route of exposure	Potential health effects	DNEL
Diethylenetriamine	Inhalation	Acute effects, local	2.6 mg/m <sup>3</sup>
		Acute effects, systemic	92.1 mg/m <sup>3</sup>
		Chronic effects, local	0.87 mg/m <sup>3</sup>
		Chronic effects, systemic	15.4 mg/m <sup>3</sup>
	Dermal	Chronic effects, local	1.1 mg/cm <sup>2</sup>
		Chronic effects, systemic	11.4 mg/kg

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

Substance	Environmental protection target	PNEC
Diethylenetriamine	Fresh water	0.56 mg/l
	Freshwater sediments	1,072 mg/kg
	Marine water	0.056 mg/l
	Marine sediments	107.2 mg/kg
	Microorganisms in sewage treatment	6 mg/l
	Soil (agricultural)	7.97 mg/kg

**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

<b>Physical state</b>	paste	<b>pH</b>	not applicable
<b>Colour</b>	black	<b>Kinematic viscosity</b>	375K – 625K mm <sup>2</sup> /s @ 25°C
<b>Odour</b>	amine odor	<b>Solubility in water</b>	very slight
<b>Odour threshold</b>	not determined	<b>Partition coefficient</b>	not applicable
		<b>n-octanol/water (log value)</b>	
<b>Boiling point or range</b>	not applicable	<b>Vapour pressure @ 20°C</b>	< 0.1 mm Hg
<b>Melting point/freezing point</b>	not determined	<b>Density and/or relative density</b>	2.0 kg/l
<b>% Volatile (by volume)</b>	< 5%	<b>Weight per volume</b>	16.7 lbs/gal.
<b>Flammability</b>	not determined	<b>Vapour density (air=1)</b>	> 1
<b>Lower/upper flammability or explosion limits</b>	not determined	<b>Rate of evaporation (ether=1)</b>	< 1
<b>Flash point</b>	> 107°C (> 225°F)	<b>% Aromatics by weight</b>	0%
<b>Method</b>	Setaflash Closed Cup	<b>Particle characteristics</b>	not applicable
<b>Autoignition temperature</b>	not determined	<b>Explosive properties</b>	no data available
<b>Decomposition temperature</b>	no data available	<b>Oxidising properties</b>	no data available

### 9.2. Other information

Dynamic viscosity: 750K – 1250K cPs @ 25°C

## 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, NO<sub>x</sub>, amines and other toxic fumes.

## SECTION 11: TOXICOLOGICAL INFORMATION

### 11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008 / GHS

**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 = 1,569 mg/kg.

Substance	Test	Result
1,2-Ethanediamine, N-(2-aminoethyl)-, reaction products with bisphenol A diglycidyl ether homopolymer	LD50, rat	200 (LC0) -500 (LC100) mg/kg
Diethylenetriamine	LD50, rat	1,553 mg/kg

**Dermal:** Based on available data on components, the classification criteria are not met. ATE-mix = 8,716 mg/kg

Substance	Test	Result
Diethylenetriamine	LD50, rabbit	1,045 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: this substance was non-mutagenic in a bacterial assay and in a cultured mammalian cell assay.

**Carcinogenicity:** 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 the European Chemicals Agency (ECHA).

**Reproductive toxicity:** Diethylenetriamine: not expected to cause toxicity; effects on or via lactation: data lacking.

**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.

## 11.2. Information on other hazards

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

Paste. 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. Endocrine disrupting properties**

None known

**12.7. 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 with 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 or ID number**

**ADG/ADR/RID/ADN/IMDG/ICAO:** UN2735  
**TDG:** UN2735  
**US DOT:** UN2735

**14.2. UN proper shipping name**

**ADG/ADR/RID/ADN/IMDG/ICAO:** AMINES, LIQUID, CORROSIVE, N.O.S. (CONTAINS 2,2'-IMINODIETHYLAMINE)  
**TDG:** AMINES, LIQUID, CORROSIVE, N.O.S. (CONTAINS 2,2'-IMINODIETHYLAMINE)  
**US DOT:** AMINES, LIQUID, CORROSIVE, N.O.S. (CONTAINS 2,2'-IMINODIETHYLAMINE)

**14.3. Transport hazard class(es)**

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

**14.4. Packing group**

**ADG/ADR/RID/ADN/IMDG/ICAO:** II  
**TDG:** II  
**US DOT:** II

**14.5. Environmental hazards**

NO

**14.6. Special precautions for user**

NO SPECIAL PRECAUTIONS FOR USER

**14.7. Maritime transport in bulk according to IMO instruments**

NOT APPLICABLE

**14.8. Other information****US DOT:** ERG NO. 153

MAY BE SHIPPED AS LIMITED QUANTITIES IN PACKAGING HAVING A RATED CAPACITY GROSS WEIGHT OF 66 LB. OR LESS AND IN INNER PACKAGES NOT OVER 1 LITER (49 CFR 173.154 (B),(1))

**IMDG:** EMS F-A, S-B, IMDG SEGREGATION GROUP 18-ALKALIS**ADR:** CLASSIFICATION CODE C7, TUNNEL RESTRICTION CODE (E)**ADG HAZCHEM CODE :** 2X **HIN:** 88/80**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:**

Acute toxicity  
 Skin corrosion  
 Serious eye damage  
 Skin sensitization

**Chemicals subject to reporting requirements of Section 313 of EPCRA and of 40 CFR 372:**

None

TSCA: All components are listed or exempted.

**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:** ADG: Australian Dangerous Goods Code  
 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  
 SCL: Specific Concentration Limit  
 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](http://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
Acute Tox. 4, H302	Calculation method
Skin Corr. 1B, H314	Calculation method
Eye Dam. 1, H318	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

**Further information:** None

**Date of last revision:** 13 December 2023

**Changes to the SDS in this revision:** Sections 1.1, 1.2, 2.1, 2.2, 3, 4.1, 4.2, 5.2, 5.3, 7.1, 8.1, 9.1, 11.1, 12.4, 12.6, 15.1.2, 16.

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.