

## SAFETY DATA SHEET

in accordance with 29 CFR 1910.1200, WHMIS 2015 and Safe Work Australia

**Revision date:** 11 May 2023

**Date of previous issue:** 3 April 2018

**SDS No.** 399A-7

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

**1.1. Product identifier**

ARC CS4 (Part A)

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

**Relevant identified uses:** ARC Polymer Composite. To be mixed with ARC CS4 (Part B) to provide protection to concrete in acid exposure environment.

**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

**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 29 CFR 1910.1200 / WHMIS 2015 / Safe Work Australia / GHS**

Skin irritation, Category 2, H315  
 Skin sensitization, Category 1, H317  
 Germ cell mutagenicity, Category 2, H341  
 Hazardous to the aquatic environment, Chronic, Category 2, H411

**2.1.2. Additional information**

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

**2.2. Label elements**

**Labeling according to 29 CFR 1910.1200 / WHMIS 2015 / Safe Work Australia / GHS**

**Hazard pictograms:**



**Signal word:**

Warning

**Hazard statements:**

H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H341	Suspected of causing genetic defects.
H411	Toxic to aquatic life with long lasting effects.

<b>Precautionary statements:</b>	P201	Obtain special instructions before use.
	P202	Do not handle until all safety precautions have been read and understood.
	P260	Do not breathe mist/spray.
	P264	Wash skin thoroughly after handling.
	P272	Contaminated work clothing must not be allowed out of the workplace.
	P273	Avoid release to the environment.
	P280	Wear protective gloves/clothing and eye/face protection.
	P302/352	IF ON SKIN: Wash with plenty of soap and water.
	P308/313	IF exposed or concerned: Get medical advice/attention.
	P362/364	Take off contaminated clothing and wash it before reuse.
	P391	Collect spillage.
	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 <sup>1</sup>	% Wt.	CAS No.	GHS Classification
Epoxy resin (number average molecular weight <= 700)	60-70	28064-14-4 *	Skin Irrit. 2, H315 Skin Sens. 1, H317 Aquatic Chronic 2, H411
2,3-Epoxypropyl o-tolyl ether	5-10	2210-79-9	Muta. 2, H341 Skin Irrit. 2, H315 Skin Sens. 1B, H317 Aquatic Chronic 2, H411
Silica (Quartz)	1-3	14808-60-7	Not classified **
Diiron trioxide	1-3	1309-37-1	Not classified **

\* Alternative CAS No: 9003-36-5. \*\* Substance with a workplace exposure limit.  
For full text of H-statements: see SECTIONS 2.2 and 16.

<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), WHMIS 2015, Safe Work Australia, GHS

## 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:** Remove contaminated clothing. Wash clothing before reuse. Wash skin with soap and water. Consult physician.

**Eye contact:** Flush eyes for at least 15 minutes with large amounts of water. Contact physician if irritation persists.

**Ingestion:** Do not induce vomiting. 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. Do not breathe mist. See section 8.2.2 for recommendations on personal protective equipment.

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

Moderate eye and skin irritant. May cause skin sensitization as evidenced by rashes or hives. Inhalation of vapors and/or aerosols in high concentration may cause irritation of respiratory system.

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

Treat symptoms.

**SECTION 5: FIRE-FIGHTING MEASURES****5.1. Extinguishing media**

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

**Unsuitable extinguishing media:** High volume water jet

**5.2. Special hazards arising from the substance or mixture**

**Hazardous combustion products:** Carbon Monoxide, Carbon Dioxide, aldehydes and other toxic fumes. Dense smoke is emitted when burned without sufficient oxygen.

**Other hazards:** None noted

**5.3. Advice for firefighters**

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

**Australian HAZCHEM Emergency Action Code:** 2 Z

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

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**

Contain spill to a small 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 handle until all safety precautions have been read and understood. Avoid skin contact. Do not breathe mist/spray. Utilize exposure controls and personal protection as specified in Section 8. Remove contaminated clothing immediately. Wash clothing before reuse. Contaminated leather including shoes cannot be decontaminated and should be discarded. Contaminated work clothing must not be allowed out of the workplace. 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 <sup>1</sup>		ACGIH TLV <sup>2</sup>		AUSTRALIA ES <sup>3</sup>	
	ppm	mg/m <sup>3</sup>	ppm	mg/m <sup>3</sup>	ppm	mg/m <sup>3</sup>
Epoxy resin (number average molecular weight <= 700)	N/A	N/A	N/A	N/A	N/A	N/A
2,3-Epoxypropyl o-tolyl ether	N/A	N/A	N/A	N/A	N/A	N/A
Silica (Quartz)	(resp.)	0.05	(resp.)	0.025	(resp.)	0.05
	(total)	0.3				
Diiron trioxide	(resp.)	5 *	(resp.)	5	N/A	5 (fume, as Fe)
	(total)	15 *				10
	(fume)	10				

\* Particulates Not Otherwise Regulated (PNOR)

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

**Biological limit values****8.2. Exposure controls****8.2.1. Engineering measures**

Provide sufficient ventilation to keep the vapor concentrations below the exposure limits. 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. In case of insufficient ventilation, utilize an approved organic vapor respirator (e.g., EN filter type A-P2). During spraying, wear suitable respiratory equipment.

**Protective gloves:** Chemical resistant gloves (e.g., butyl rubber, nitrile)

**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**

<b>Physical state</b>	viscous liquid	<b>pH</b>	not applicable
<b>Colour</b>	red	<b>Kinematic viscosity</b>	15,556 mm <sup>2</sup> /s @ 25°C
<b>Odour</b>	none	<b>Solubility in water</b>	insoluble
<b>Odour threshold</b>	not determined	<b>Partition coefficient n-octanol/water (log value)</b>	not applicable
<b>Boiling point or range</b>	not determined	<b>Vapour pressure @ 20°C</b>	not determined
<b>Melting point/freezing point</b>	not determined	<b>Density and/or relative density</b>	1.35 kg/l
<b>% Volatile (by volume)</b>	0%	<b>Weight per volume</b>	11.2 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>	> 115°C (> 240°F)	<b>% Aromatics by weight</b>	0%
<b>Method</b>	PM Closed Cup	<b>Particle characteristics</b>	not applicable
<b>Autoignition temperature</b>	not determined	<b>Explosive properties</b>	not applicable
<b>Decomposition temperature</b>	not determined	<b>Oxidising properties</b>	not applicable

**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 acids or bases in bulk, strong oxidizers like liquid Chlorine and concentrated Oxygen.

**10.6. Hazardous decomposition products**

Carbon Monoxide, Carbon Dioxide, aldehydes 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 skin or lung allergies may be aggravated by exposure.

**Acute toxicity -**

**Oral:** Ingestion may result in mouth, throat and gastrointestinal irritation, nausea, vomiting and diarrhea.

Substance	Test	Result
Epoxy resin (number average molecular weight <= 700)	LD50 oral, rat	> 5000 mg/kg
2,3-Epoxypropyl o-tolyl ether	LD50, oral, rat	5800 mg/kg

**Dermal:**

Substance	Test	Result
Epoxy resin (number average molecular weight <= 700)	LD50 dermal, rabbit	> 2000 mg/kg
2,3-Epoxypropyl o-tolyl ether	LD50 dermal, rabbit	> 2000 mg/kg

**Inhalation:**

Inhalation of vapors and/or aerosols in high concentration may cause irritation of respiratory system.

Substance	Test	Result
2,3-Epoxypropyl o-tolyl ether	LC50 inhalation, rat, 4 h	6.09 mg/l

**Skin corrosion/irritation:**

Causes skin irritation.

Substance	Test	Result
Epoxy resin (number average molecular weight <= 700)	Skin irritation, rabbit	Moderate irritation
2,3-Epoxypropyl o-tolyl ether	Skin irritation, human experience	Severe irritation

**Serious eye damage/irritation:**

Causes serious eye irritation.

Substance	Test	Result
Epoxy resin (number average molecular weight <= 700)	Eye irritation, rabbit	Slightly irritating

**Respiratory or skin sensitisation:**

Substance	Test	Result
Epoxy resin (number average molecular weight <= 700)	Skin sensitization, guinea pig	Sensitizing
2,3-Epoxypropyl o-tolyl ether	Skin sensitization, human experience	Sensitizing

**Germ cell mutagenicity:**

2,3-Epoxypropyl o-tolyl ether is mutagenic (changes in genetic systems) in some laboratory tests. Epoxy resin (number average molecular weight <= 700): based on available data, the classification criteria are not met.

**Carcinogenicity:**

The International Agency for Research on Cancer (IARC) and the National Toxicology Program (NTP) have classified inhaled silica as a human carcinogen. The silica in this product does not separate from the mixture or in of itself become air-borne, therefore it does not present a hazard in normal use. Epoxy resin (number average molecular weight <= 700): based on available data, the classification criteria are not met.

**Reproductive toxicity:**

Epoxy resin (number average molecular weight <= 700): based on available data, the classification criteria are not met. Prolonged and repeated exposure to 2,3-Epoxypropyl O-tolyl Ether may cause reproductive disorders (birth defects/sterility).

**STOT – single exposure:**

Epoxy resin (number average molecular weight <= 700): based on available data, the classification criteria are not met.

**STOT – repeated exposure:**

Epoxy resin (number average molecular weight <= 700): based on available data, the classification criteria are not met. Repeated inhalation of respirable free silica may cause scarring of the lungs with cough and shortness of breath. Silicosis, a delayed lung injury that is a disabling, progressive and sometimes fatal pulmonary fibrosis, may result. The silica in this product does not separate from the mixture or in of itself become air-borne, therefore it does not present a hazard in normal use.

Substance	Test	Result
Epoxy resin (number average molecular weight <= 700)	Sub-chronic NOAEL, oral, 90 days, rat, male / female (OECD 408)	250 mg/kg

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

**Other information:** None

## 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

2,3-Epoxypropyl o-tolyl ether and Epoxy resin (number average molecular weight  $\leq 700$ ) are toxic to aquatic organisms and may cause long-term adverse effects in the aquatic environment (LC50/EC50 between 1 and 10 mg/l in the most sensitive species).

### 12.2. Persistence and degradability

Unreacted components (Parts A and B), improperly released to the environment, can cause ground and water pollution. Epoxy resin (number average molecular weight  $\leq 700$ ), 2,3-Epoxypropyl o-tolyl ether: not readily biodegradable.

### 12.3. Bioaccumulative potential

Epoxy resin (number average molecular weight  $\leq 700$ ): moderate potential for bioaccumulation. Octanol/water partition coefficient (log Kow): 3.6, estimated.

### 12.4. Mobility in soil

Liquid. Insoluble in water. In determining environmental mobility, consider the product's physical and chemical properties (see Section 9). Epoxy resin: if product enters soil, it will be mobile and may contaminate groundwater.

### 12.5. 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. 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:** UN3082  
**TDG:** UN3082  
**US DOT:** UN3082

### 14.2. UN proper shipping name

**ADG/ADR/RID/ADN/IMDG/ICAO:** ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (EPOXY RESIN)  
**TDG:** ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (EPOXY RESIN)  
**US DOT:** ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (EPOXY RESIN)

### 14.3. Transport hazard class(es)

**ADG/ADR/RID/ADN/IMDG/ICAO:** 9  
**TDG:** 9  
**US DOT:** 9

### 14.4. Packing group

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

### 14.5. Environmental hazards

MARINE POLLUTANT

### 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.171,  
 May be shipped as NON-RESTRICTED in non-bulk packagings (119 gallons or less) by motor vehicle, rail car or aircraft.  
 (49 CFR 171.4(c))

**IMDG:** EmS. F-A, S-F

May be shipped as NON-RESTRICTED in single or combination packagings containing a net quantity per single or inner packaging of 5 L or less. (IMDG CODE Amendment 37-14, 2.10.2.7)

**ICAO/IATA:** May be shipped as NON-RESTRICTED in single or combination packagings containing a net quantity per single or inner packaging of 5 L or less. (IATA Dangerous Goods Regulation 56<sup>th</sup> edition, 4.4 Special Provisions A197)

**ADR:** Classification code M6 Tunnel restriction code (E)

May be shipped as NON-RESTRICTED in single or combination packagings containing a net quantity per single or inner packaging of 5 L or less. (ADR 2015 Volume 1, Chapter 3.3 Special Provisions 375)

**ADG HAZCHEM CODE:** ●3Z **HIN:** 90

## SECTION 15: REGULATORY INFORMATION

### 15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

#### 15.1.1. National regulations

#### US EPA SARA TITLE III

#### 312 Hazards:

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

Skin irritation

None

Skin sensitization

Germ cell mutagenicity

TSCA: All chemical components are listed or exempted.

**Other national regulations:** None

## SECTION 16: OTHER INFORMATION

#### Abbreviations

ADG: Australian Dangerous Goods Code

**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

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

(Q)SAR: Quantitative Structure-Activity Relationship

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

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)

U.S. National Library of Medicine Toxicology Data Network (TOXNET)

**Procedure used to derive the classification for mixtures according to GHS:**

<b>Classification:</b>	<b>Classification procedure</b>
Skin Irrit. 2, H315	Calculation method
Skin Sens. 1, H317	Bridging principle "Dilution"
Muta. 2, H341	Bridging principle "Dilution"
Aquatic Chronic 2, H411	Calculation method

**Relevant H-statements:** H315: Causes skin irritation.  
H317: May cause an allergic skin reaction.  
H341: Suspected of causing genetic defects.  
H411: Toxic to aquatic life with long lasting effects.

**Hazard pictogram names:** Health hazard, exclamation mark, environment.

**Further information:** None

**Date of last revision:** 11 May 2023

**Changes to the SDS in this revision:** Sections 1.2, 1.3, 2.1, 2.2, 3, 5.2, 5.3, 8.1, 9.1, 13, 15.1, 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.