

SAFETY DATA SHEET

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

Revision date: 3 November 2022 **Date of previous issue:** 12 October 2017 **SDS No.** 399B-7

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

1.1. Product identifier

ARC CS4 (Part B)

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 A) to provide protection to concrete in acid exposure environment.

Uses advised against: No data 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
E-mail (SDS questions): ProductSDSs@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

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 / GHS

Acute toxicity, Category 4, H302
Skin corrosion, Category 1B, H314
Skin sensitization, Category 1, H317
Serious eye damage, Category, H318
Reproductive toxicity, Category 2, H361fd
Specific target organ toxicity – repeated exposure, Category 2, H373 (oral)
Hazardous to the aquatic environment, Chronic, Category 2, H411

2.1.2. Australian statement of hazardous nature

Hazardous according to criteria of Safe Work Australia.

2.1.3. 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 / GHS

Hazard pictograms:



Signal word: Danger

Hazard statements:	H302	Harmful if swallowed.
	H314	Causes severe skin burns and eye damage.
	H317	May cause an allergic skin reaction.
	H361fd	Suspected of damaging fertility. Suspected of damaging the unborn child.
	H373	May cause damage to the kidneys through prolonged or repeated exposure.
	H411	Toxic to aquatic life with long lasting effects.
Precautionary statements:	P201	Obtain special instructions before use.
	P202	Do not handle until all safety precautions have been read and understood.
	P260	Do not breathe mist.
	P264	Wash hands thoroughly after handling.
	P270	Do not eat, drink or smoke when using this product.
	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.
	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 or shower.
	304/340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
	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.
	P333/313	If skin irritation or rash occurs: Get medical advice/attention.
	P363	Wash contaminated clothing before reuse.
	P391	Collect spillage.
	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.	GHS Classification
Methyleneoxide, polymer with benzenamine, hydrogenated	25 - 50	135108-88-2	Acute Tox. 4, H301 Skin Corr. 1C, H314 Eye Dam. 1, H318 Skin Sens. 1, H317 STOT RE 2, H373 (kidney) Aquatic Chronic 3, H412
Benzyl alcohol	25 - 50	100-51-6	Acute Tox. 4, H302/332 Eye Irrit. 2, H319
4-tert-Butylphenol	7 - 10	98-54-4	Skin Irrit. 2, H315 Eye Dam. 1, H318 Repr. 2, H361f Aquatic Chronic 1, H410 (M-factor = 1)
m-Phenylenebis(methylamine) (Synonym: m-Xylene-alpha, alpha'-Diamine)	5 - 10	1477-55-0	Acute Tox. 4, H302/332 Skin Corr. 1B, H314 Skin Sens. 1B, H317 Aquatic Chronic 3, H412
2-Hydroxybenzoic Acid	1 - 3	69-72-7	Acute Tox. 4, H302 Eye Dam. 1, H318 Repr. 2, H361d

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

¹ 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: 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. Consult physician.

Ingestion: Never give anything by mouth to an unconscious person. Do not induce vomiting without medical advice. Prevent aspiration of vomit. Turn victim's head to the side.

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

Direct contact will cause burns to skin, eyes and mucous membranes. May cause skin sensitization as evidenced by rashes or hives. If ingested, severe burns of the mouth and throat, as well as a danger of perforation of the oesophagus and the stomach.

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, dry sand, limestone powder, alcohol-resistant foam or water fog

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: No data available

5.3. Advice for firefighters

Cool exposed containers with water. Use personal protective equipment. Recommend Firefighters wear self-contained breathing apparatus.

Australian HAZCHEM Emergency Action Code: 2 Y

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. Do not breathe 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. 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 and well-ventilated area. Keep container tightly closed. Do not store near acids. Keep away from alkalis.

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		AUSTRALIA ES ³	
	ppm	mg/m ³	ppm	mg/m ³	ppm	mg/m ³
Methyleneoxide, polymer with benzenamine, hydrogenated	N/A	N/A	N/A	N/A	N/A	N/A
Benzyl alcohol	N/A	N/A	N/A	N/A	N/A	N/A
4-tert-Butylphenol	N/A	N/A	N/A	N/A	N/A	N/A
m-Phenylenebis(methylamine)	(Ceiling)	0.1	0.018 (Ceiling)	(skin)	(Peak)	0.1
2-Hydroxybenzoic Acid	N/A	N/A	N/A	N/A	N/A	N/A

¹ United States Occupational Health & Safety Administration permissible exposure limits

² American Conference of Governmental Industrial Hygienists threshold limit values

³ Safe Work Australia, Workplace Exposure Standards for Airborne Contaminants

Biological limit values

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

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

Provide sufficient ventilation to keep the concentrations below the exposure limits. If necessary, provide local exhaust. Provide readily accessible eye wash stations and safety showers.

8.2.2. Individual protection measures

Respiratory protection: 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 or neoprene)

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	viscous liquid	pH	not applicable
Colour	colorless	Kinematic viscosity	495 cps @25°C
Odour	amine odor	Solubility in water	insoluble
Odour threshold	not determined	Partition coefficient n-octanol/water (log value)	no data available
Boiling point or range	219°C (426°F)	Vapour pressure @ 20°C	1.59 mm Hg
Melting point/freezing point	not determined	Density and/or relative density	1.05 kg/l
% Volatile (by volume)	0	Weight per volume	8.74 lbs/gal.
Flammability	no data available	Vapour density (air=1)	> 1
Lower/upper flammability or explosion limits	not determined	Rate of evaporation (ether=1)	< 1
Flash point	109°C (228°F)	% Aromatics by weight	0
Method	Closed Cup	Particle characteristics	not applicable
Autoignition temperature	not determined	Explosive properties	not determined
Decomposition temperature	not determined	Oxidising 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 under normal conditions.

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 reducers, alkali and strong oxidizers like liquid Chlorine and concentrated Oxygen. Reactive metals (e.g. sodium, calcium, zinc, etc.) Materials reactive with hydroxyl compounds. Mineral and organic acids. Product slowly corrodes copper, aluminum, zinc and galvanized surfaces. Reaction with peroxides may result in violent decomposition of peroxide possibly creating an explosion.

10.6. Hazardous decomposition products

Nitric acid, NO_x, Ammonia, Carbon Monoxide, Carbon Dioxide, aldehydes, flammable hydrocarbon fragments and other toxic fumes. Nitrogen oxide can react with water vapors to form corrosive nitric acid.

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:**

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: 518.46 mg/l.

Substance	Test	Result
Methyleneoxide, polymer with benzenamine, hydrogenated	LD50, rat	> 50 - 300 mg/kg
Benzyl alcohol	LD50, rat	1230 mg/kg
4-tert-Butylphenol	LD50, rat	> 2000 mg/kg
m-Phenylenebis(methylamine)	LD50, rat	930 mg/kg
2-Hydroxybenzoic Acid	LD50, rat	891 mg/kg

Dermal:

May be harmful in contact with skin. ATE-mix: 4246.28 mg/l.

Substance	Test	Result
Methyleneoxide, polymer with benzenamine, hydrogenated	LD50, rabbit	2673 mg/kg
Benzyl alcohol	LD50, rabbit	> 2000 mg/kg
4-tert-Butylphenol	LD50, rabbit	2318 mg/kg / > 16000 mg/kg
m-Phenylenebis(methylamine)	LD50, rabbit	> 3100 mg/kg
2-Hydroxybenzoic Acid	LD50, rabbit	> 2000 mg/kg

Inhalation:

Mist can cause severe eye, skin and respiratory tract burns. ATE-mix: 18.87 mg/l (mist); 154.93 mg/l (vapour).

Substance	Test	Result
Benzyl alcohol	LC50, rat	> 4.178 mg/l (mist) ≈ 8.8 mg/l (vapour)
m-Phenylenebis(methylamine)	LD50, rat	1.34 mg/kg (mist)

Skin corrosion/irritation:

Causes skin burns.

Substance	Test	Result
Product	In vitro test	Corrosive

Serious eye damage/irritation:

Causes serious eye damage.

Respiratory or skin sensitisation:

May cause skin sensitization in susceptible individuals.

Germ cell mutagenicity:

Methyleneoxide, polymer with benzenamine, hydrogenated: Ames test, In vitro mammalian cell gene mutation test (OECD 476) chromosomal aberration (OECD 473): negative. 4-tert-Butylphenol: OECD 471, Micronucleus test (OECD 474): negative.

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:	Suspected of damaging fertility. Suspected of damaging the unborn child.
STOT – single exposure:	Data lacking.
STOT – repeated exposure:	Animal studies have reported liver and kidney effects. 28-day oral subchronic study, mixed polycycloaliphatic amines, NOAEL: 15 mg/kg/day.
Aspiration hazard:	Not classified as an aspiration toxicant.
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

Toxic to aquatic life with long lasting effects. Methyleneoxide, polymer with benzenamine, hydrogenated: 72 h EC50 (for algae) 43.94 mg/l. 4-tert-Butylphenol: 72 h EC50 (for algae) 14 mg/l; NOEC 0.32 mg/l (OECD 201). m-Phenylenebis(methylamine): 72 h EC50 (for algae) 33.3 mg/l (OECD 201).

12.2. Persistence and degradability

Unreacted components (Parts A and B), improperly released to the environment, can cause ground and water pollution. Benzyl alcohol, 2-Hydroxybenzoic Acid: readily biodegradable.

12.3. Bioaccumulative potential

Benzyl alcohol, 2-Hydroxybenzoic Acid: low potential for bioaccumulation. Methyleneoxide, polymer with benzenamine, hydrogenated: does not bioaccumulate.

12.4. Mobility in soil

Viscous liquid. Insoluble in water. In determining environmental mobility, consider the product's physical and chemical properties (see Section 9).

12.5. Other adverse effects

None known

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

Unreacted components are a special waste. Combine resin and curative. The final cured material is considered nonhazardous. Landfill sealed containers with a properly licensed 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. (BENZENE-1,3-DIMETHANEAMINE (MXDA) / CYCLOALIPHATIC AMINE)
TDG:	AMINES, LIQUID, CORROSIVE, N.O.S. (BENZENE-1,3-DIMETHANEAMINE (MXDA) / CYCLOALIPHATIC AMINE)
US DOT:	AMINES, LIQUID, CORROSIVE, N.O.S. (BENZENE-1,3-DIMETHANEAMINE (MXDA) / CYCLOALIPHATIC AMINE)

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:	III
TDG:	III
US DOT:	III

14.5. Environmental hazards

NO ENVIRONMENTAL HAZARDS

14.6. Special precautions for user

NO SPECIAL PRECAUTIONS FOR USERS

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 5 kg (49 CFR 173.154 (b,2))

IMDG: EmS. F-A, S-B, IMDG segregation group 18-Alkalis**ADR:** Classification code C8, 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. National regulations****US EPA SARA TITLE III****312 Hazards:****Chemicals subject to reporting requirements of Section 313 of EPCRA and of 40 CFR 372:**

Acute toxicity
 Skin corrosion
 Skin sensitization
 Serious eye damage
 Reproductive toxicity
 Specific target organ toxicity – repeated exposure

None

TSCA: All chemical components are listed in the TSCA inventory.

Other national regulations: None**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
 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.

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:

Classification	Classification procedure
Acute Tox. 4, H302	Calculation method
Skin Corr. 1B, H314	Calculation method
Skin Sens. 1, H317	Calculation method
Eye Dam, H318	Calculation method
Repr. 2, H361fd	Calculation method
STOT RE 2, H373B	Calculation method
Aquatic Chronic 2, H411	Calculation method

Relevant H-statements: H301: Toxic if swallowed.
H302: Harmful if swallowed.
H314: Causes severe skin burns and eye damage.
H315: Causes skin irritation.
H317: May cause an allergic skin reaction.
H318: Causes serious eye damage.
H319: Causes serious eye irritation.
H332: Harmful if inhaled.
H361fd: Suspected of damaging fertility. Suspected of damaging the unborn child.
H373: May cause damage to organs through prolonged or repeated exposure.
H410: Very toxic to aquatic life with long lasting effects.
H411: Toxic to aquatic life with long lasting effects.
H412: Harmful to aquatic life with long lasting effects.

Hazard pictogram names: Corrosion, health hazard, exclamation mark, environment

Further information: None

Date of last revision: 3 November 2022

Changes to the SDS in this revision: Sections 1.2, 1.3, 2.1, 2.2, 3, 4.1, 5.2, 6.1, 6.2, 6.3, 7.2, 8.1, 9.1, 10.2, 10.5, 10.6, 11, 12.1, 12.2, 12.3, 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.