SAFETY DATA SHEET

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

Revision date: September 22, 2020 **Initial date of issue:** 13 July 2007 **SDS No.** 269A-17b

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

1.1. Product identifier

ARC S2 (Part A) (GN and GY)

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): ProductSDSs@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 Irrit. 2, H315
Skin Sens. 1, H317
Eye Irrit. 2A, H319
Aquatic Chronic 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

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

Hazard pictograms:

Signal word: Warning

Hazard statements:	H315	Causes skin irritation.
	H317	May cause an allergic skin reaction.
	H319	Causes serious eye irritation.
	H411	Toxic to aquatic life with long lasting effects.
Precautionary statements:	P261	Avoid breathing mist/spray.
	P264	Wash hands thoroughly after handling.
	P273	Avoid release to the environment.
	P280	Wear protective gloves and eye/face protection.
	P302/352	IF ON SKIN: Wash with plenty of soap and water.
	P305/351/338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
	P333/313	If skin irritation or rash occurs: Get medical advice/attention.
	P337/313	If eye irritation persists: Get medical advice/attention.
	P362/364	Take off contaminated clothing and wash it before reuse.
	P391	Collect spillage.
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
Epoxy resin (number average molecular weight <= 700)	30-40	25068-38-6 500-033-5, and	NA	Eye Irrit. 2A, H319** Skin Irrit. 2, H315 Skin Sens. 1, H317
	10-20	9003-36-5* 500-006-8	01-211945 4392-40	Aquatic Chronic 2, H411
Silicon carbide	10-20	409-21-2 206-991-8	NA	Not classified***
Silica (Quartz)	1-4	14808-60-7 238-878-4	NA	Not classified***
Titanium dioxide	1-3	13463-67-7 236-675-5	01-211948 9379-17	Not classified***

*Alternative CAS No: 28064-14-4. **Applies to CAS no. 25068-38-6 only. ***Substance with a workplace exposure limit.
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), 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 person to fresh air and keep comfortable for breathing. Call a physician if you feel unwell.

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.

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

Moderate eye and skin irritant. May cause skin sensitization as evidence by rashes or hives. High vapor concentrations resulting from heating or spraying can cause respiratory tract irritation.

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 or water fog

Unsuitable extinguishing media: None known

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

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

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

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. 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/m³	ppm	mg/m³	ppm	mg/m³	ppm	mg/m³
Epoxy resin (number average molecular weight <= 700)	–	–	–	–	–	–	–	–
Silicon carbide	(total) (resp)	15 5	(total) (resp)	10 3	(total) (resp)	10 4	–	10
Silica (Quartz)	(resp)	0.05	(resp)	0.025	(resp)	0.1	(resp)	0.1
Titanium dioxide	–	15	–	10	(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

Substance	Route of exposure	Potential health effects	DNEL
Epoxy resin (CAS no. 9003-36-5)	Inhalation	Acute effects, local / Acute effects, systemic	no data available
		Chronic effects, local	no data available
		Chronic effects, systemic	29.39 mg/m^3
	Dermal	Acute effects, local	0.0083 mg/cm^2
		Acute effects, systemic / Chronic effects, local	no data available
		Chronic effects, systemic	104.15 mg/kg bw/day
Titanium dioxide	Inhalation	Chronic effects	10 mg/m^3

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

Substance	Environmental protection target	PNEC
Epoxy resin (CAS no. 9003-36-5)	Fresh water	0.003 mg/l
	Marine water	0.0003 mg/l
	Water, intermittent release	0.0254 mg/l
	Microorganisms in sewage treatment	10 mg/l
	Freshwater sediments	0.294 mg/kg
	Marine sediments	0.0294 mg/kg
	Soil (agricultural)	0.237 mg/kg
Titanium dioxide	Fresh water	0.127 mg/l
	Marine water	> = 1 mg/l
	Water	0.61 mg/l
	Freshwater sediments	> = 1000 mg/kg
	Marine sediments	> = 100 mg/kg
	Microorganisms in sewage treatment	> = 100 mg/l
	Soil (agricultural)	100 mg/kg

8.2. Exposure controls

8.2.1. Engineering measures

No special requirements. If exposure limits are exceeded, provide adequate ventilation. 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. During spraying wear suitable respiratory equipment.

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

Eye and face protection: Safety glasses

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	gritty paste	**Odour**	sweet odor
Colour	blue	**Odour threshold**	not determined
Initial boiling point	not applicable	**Vapour pressure @ 20°C**	Unknown
Melting point	not determined	**% Aromatics by weight**	0
% Volatile (by volume)	< 1	**pH**	not applicable
Flash point	> 93°C (> 200°F)	**Relative density**	1.6 kg/l
Method	Tag Closed Cup	**Weight per volume**	13.3 lbs/gal.
Viscosity	50K 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**	insoluble
Flammability (solid, gas)	not applicable	**Oxidising properties**	not applicable
Explosive properties	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

None

10.5. Incompatible materials

Strong mineral acids and bases, strong organic bases and strong oxidizers like liquid Chlorine and concentrated Oxygen.

10.6. Hazardous decomposition products

Carbon Monoxide, aldehydes, acids and other toxic fumes.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1. Information on toxicological effects

Primary route of exposure under normal use: Skin and eye contact. Personnel with pre-existing skin and eye disorders and skin allergies may be aggravated by exposure.

Acute toxicity -

Oral: Based on available data on components, the classification criteria are not met.

Substance	Test	Result
Epoxy resin	LD50, rat	> 5000 mg/kg
Silicon carbide	NOAEL, rat	2000 mg/kg
Titanium dioxide	LD50, rat	> 10000 mg/kg

Dermal: Based on available data on components, the classification criteria are not met.

Substance	Test	Result
Epoxy resin	LD50, rabbit	> 2000 mg/kg
Silicon carbide	NOAEL, rat	2000 mg/kg
Titanium dioxide	LD50, rabbit	> 10000 mg/kg

Inhalation: High vapor concentrations resulting from heating or spraying can cause respiratory tract irritation.

Substance	Test	Result
Epoxy resin (CAS no. 25068-38-6)	LC0, rat, 5-8 h	No mortality at vapor saturation level
Titanium dioxide	LC50, rat, 4 h	> 6.82 mg/l

Skin corrosion/irritation: Causes skin irritation.

Substance	Test	Result
Epoxy resin	Skin irritation, rabbit	Moderate irritation
Titanium dioxide	Skin irritation, rabbit	Not irritating

Serious eye damage/ irritation: Causes serious eye irritation.

Substance	Test	Result
Epoxy resin (CAS no. 25068-38-6)	Eye irritation, rabbit	Moderate irritation
Titanium dioxide	Eye irritation, rabbit	Not irritating

Respiratory or skin sensitisation: May cause an allergic skin reaction.

Substance	Test	Result
Epoxy resin	Skin sensitization, guinea pig	Sensitizing
Titanium dioxide	Skin sensitization, guinea pig	Not sensitizing

Germ cell mutagenicity: Epoxy resin, Silicon carbide, Titanium dioxide: 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. IARC has designated inhaled titanium dioxide as possibly carcinogenic to humans (group 2B). The silica, silicon carbide and titanium dioxide in this product do not separate from the mixture or in of themselves become airborne, therefore, do not present a hazard in normal use. Epoxy resin, Silicon carbide: based on available data, the classification criteria are not met.

Reproductive toxicity: Epoxy resin, Silicon carbide, Titanium dioxide: based on available data, the classification criteria are not met.

STOT-single exposure: Epoxy resin, Silicon carbide, Titanium dioxide: based on available data, the classification criteria are not met.

STOT-repeated exposure: Epoxy resin, Silicon carbide, Titanium dioxide: 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.

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

Epoxy resin (number average molecular weight <= 700) is 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 <= 700): not readily biodegradable (biodegradation, OECD 301F, 28 days: 5%). Silicon carbide, Silica (Quartz), Titanium dioxide: inorganic substances.

12.3. Bioaccumulative potential

Epoxy resin (number average molecular weight <= 700): log Kow = 2.64 – 3.78, low potential for bioaccumulation.

12.4. Mobility in soil

Insoluble in water. In determining environmental mobility, consider the product's physical and chemical properties (see Section 9). Epoxy resin (number average molecular weight <= 700): if product enters soil, it will be mobile and may contaminate groundwater (log Koc <= 3.65).

12.5. Results of PBT and vPvB assessment

This mixture does not contain any substances that are assessed to be a PBT or a vPvB.

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 stabilized and solidified liquids in a properly licensed facility. Unreacted components are a special waste (classified as hazardous according to 2008/98/EC). 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: UN3082
TDG: UN3082
US DOT: UN3082

14.2. UN proper shipping name

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)

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

14.4. Packing group

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

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 56th 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)

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:	**313 Chemicals:**
Immediate	None
Delayed	

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
Eye Irrit. 2, H319	Calculation method
Skin Irrit. 2, H315	Calculation method
Skin Sens. 1, H317	Bridging principle "Dilution"
Aquatic Chronic 2, H411	Calculation method

Relevant H-statements: H315: Causes skin irritation.
H317: May cause an allergic skin reaction.
H319: Causes serious eye irritation.
H411: Toxic to aquatic life with long lasting effects.

Hazard pictogram names: Exclamation mark, environment

Changes to the SDS in this revision: Section 2.1.

Date of last revision: September 22, 2020

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.