



SAFETY DATA SHEET

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

Revision date: 14 February 2019

Initial date of issue: 6 July 2007

SDS No. 240A-15

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

1.1. Product identifier

ARC 988 (Part A) (including red)

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): ProductMSDSs@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
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] / GHS

Skin irritation, Category 2, H315
Skin sensitization, Category 1, H317
Eye irritation, Category 2, H319
Hazardous to the aquatic environment, Chronic, Category 2, H411

2.1.2. Classification according to 29 CFR 1910.1200 / WHMIS 2015 / GHS

Same as section 2.1.1.

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**2.2.1. Labelling according to Regulation (EC) No 1272/2008 [CLP] / 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 vapors.
 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**2.2.2. Labelling according to 29 CFR 1910.1200 / WHMIS 2015 / GHS****Hazard pictograms:** Same as section 2.2.1.**Signal word:** Same as section 2.2.1.**Hazard statements:** Same as section 2.2.1.**Precautionary statements:**

P261 Avoid breathing vapors.
 P264 Wash hands 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 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.
 P501 Dispose of contents/container to an approved waste disposal plant.

Supplemental information:**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)	75-85	28064-14-4 9003-36-5/ 500-006-8	NA	Skin Irrit. 2, H315 Skin Sens. 1, H317 Aquatic Chronic 2, H411
Alkyl (C8, C10) Glycidyl Ether	5-10	68609-96-1 271-845-2	NA	Skin Irrit. 2, H315 Eye Irrit. 2, H319 Skin Sens. 1, H317 Aquatic Chronic 2, H411

Epoxy resin (number average molecular weight <= 700)	3-7	25068-38-6 500-033-5	NA	Skin Irrit. 2, H315 Skin Sens. 1, H317 Eye Irrit. 2, H319 Aquatic Chronic 2, H411
Oxirane, mono[(C12-14-alkyloxy)methyl] derivs.	0-0.9	68609-97-2 271-846-8	NA	Skin Irrit. 2, H315 Skin Sens. 1, H317
Other ingredients:				
Iron oxide	0-6	1309-37-1 215-168-2	NA	Not classified*
Titanium dioxide	0-5	13463-67-7 236-675-5	NA	Not classified*
For full text of H-statements: see SECTION 16. *Substance with a workplace exposure limit. ¹ Classified according to: <ul style="list-style-type: none"> • 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.

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. If person is conscious, rinse mouth with water. 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

Moderate eye and skin irritant. May cause skin sensitization as evidenced by rashes or hives. Heating can generate vapors that could cause headache, nausea, dizziness and respiratory irritation if inhaled.

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: High volume water jet

5.2. Special hazards arising from the substance or mixture

Hazardous combustion products may include: Carbon Monoxide, Carbon Dioxide, aldehydes and other toxic fumes. Phenolics. Do not allow runoff from firefighting to enter drains or water courses.

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**

Avoid skin contact. 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/m ³	ppm	mg/m ³	ppm	mg/m ³	ppm	mg/m ³
Epoxy resin (number average molecular weight <= 700)	–	–	–	–	–	–	–	–
Alkyl (C8, C10) Glycidyl Ether	–	–	–	–	–	–	–	–
Epoxy resin (number average molecular weight <= 700)	–	–	–	–	–	–	–	–
Oxirane, mono[(C12-14-alkyloxy)methyl] derivs.	–	–	–	–	–	–	–	–
Iron oxide	(total) (resp.) (fume)	15 5 10	(resp.)	5	(fume) (inhal.) (resp.)	5 10 4	(fume, as Fe)	5
Titanium dioxide	(total)	15	–	10	(inhal.) (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]

Biological limit values

Not available

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	
Iron oxide	Inhalation	Chronic effects, systemic	104.15 mg/kg/day
		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

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. If exposure limits are exceeded, use a half or full-face respirator with combined dust/organic vapour filter (e.g., EN filter type A-P2).

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

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**

Physical state	paste	Odour	sweet odor
Colour	red or gray	Odour threshold	not determined
Initial boiling point	not applicable	Vapour pressure @ 20°C	not applicable
Melting point	not determined	% Aromatics by weight	none
% Volatile (by volume)	< 1	pH	not applicable
Flash point	> 93.3°C (> 200°F)	Relative density	1.15-1.18 kg/l
Method	Closed Cup	Weight per volume	9.6-9.8 lbs/gal.
Viscosity	3500-6400 cps @ 25°C	Coefficient (water/oil)	< 1
Autoignition temperature	not determined	Vapour density (air=1)	> 1
Decomposition temperature	not determined	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 determined
Explosive 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

10.3. Possibility of hazardous reactions

No dangerous reactions known under conditions of normal use.

10.4. Conditions to avoid

Extreme heat.

10.5. Incompatible materials

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

10.6. Hazardous decomposition products

Thermal decomposition may produce Carbon Monoxide, Carbon Dioxide, aldehydes and other toxic fumes. Phenolics.

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, oral, rat	> 5,000 mg/kg
Alkyl (C8, C10) Glycidyl Ether	LD50, oral, rat	> 5,000 mg/kg

Dermal:

Substance	Test	Result
Epoxy resin	LD50, dermal, rabbit	> 2,000 mg/kg

Inhalation:

Heating can generate vapors that could cause headache, nausea, dizziness and respiratory irritation if inhaled.

Substance	Test	Result
Epoxy resin (CAS no. 25068-38-6)	LC50, rat, 4 hours	No mortality at vapor saturation level

Skin corrosion/irritation:

Causes skin irritation.

Substance	Test	Result
Epoxy resin	Skin irritation, rabbit (OECD 404)	Moderate irritation

Serious eye damage/irritation:

Causes serious eye irritation.

Substance	Test	Result
Alkyl (C8, C10) Glycidyl Ether	Eye irritation, rabbit	Irritating
Epoxy resin (CAS no. 25068-38-6)	Eye irritation, rabbit(OECD 405)	Moderate irritation

Respiratory or skin sensitisation:

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

Substance	Test	Result
Epoxy resin	Skin sensitization, mouse (OECD 429)	Sensitizing

Germ cell mutagenicity:

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

Carcinogenicity:	Based on recent 2-year mice skin painting studies and other available information, the International Agency for Research on Cancer (IARC) concluded that they did not have enough information to classify Epoxy resin (number average molecular weight \leq 700, CAS no. 25068-38-6). IARC has designated inhaled titanium dioxide as possibly carcinogenic to humans (group 2B). The titanium dioxide 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.
Reproductive toxicity:	Epoxy resin (number average molecular weight \leq 700): based on available data, the classification criteria are not met (OECD 416, 414).
STOT – single exposure:	Epoxy resin (number average molecular weight \leq 700): based on available data, the classification criteria are not met.
STOT – repeated exposure:	Epoxy resin (number average molecular weight \leq 700): based on available data, the classification criteria are not met.

Substance	Test	Result
Epoxy resin	Sub-chronic NOAEL, oral, 90 days, rat, male / female (OECD 408)	250 mg/kg bw/day

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 \leq 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.); chronic NOEC, 21 days, Daphnia magna (OECD 211) = 0.3 mg/l.

12.2. Persistence and degradability

Unreacted components (Parts A and B), improperly released to the environment, can cause ground and water pollution. Epoxy resin: not readily biodegradable (biodegradation, OECD 301F, 28 days: 5%). Iron oxide, Titanium dioxide: inorganic substances.

12.3. Bioaccumulative potential

Epoxy resin: Octanol/water partition coefficient (log Kow) = 2.64 – 3.78, low potential for bioaccumulation.

12.4. Mobility in soil

Paste. 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 (log Koc \leq 3.65).

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

Combine resin and curative. The final cured material is considered nonhazardous. 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. The unhardened product is classified as a hazardous waste according to 2008/98/EC.

SECTION 14: TRANSPORT INFORMATION

14.1. UN 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. 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 56 th 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. 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: Skin irritation Skin sensitization Eye irritation	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: 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
 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]:

Classification	Classification procedure
Skin Irrit. 2, H315	Calculation method
Skin Sens. 1, H317	Calculation method
Eye Irrit. 2, H319	Calculation method
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

Further information: None

Date of last revision: 14 February 2019

Changes to the SDS in this revision: Sections 2.1, 2.2, 3, 4.1, 5.1, 5.2, 7.1, 8.1, 8.2.2, 10.5, 10.6, 11, 12.1, 12.2, 12.3, 12.4, 13, 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.

