

SAFETY DATA SHEET

in accordance with REACH (1907/2006/EC, as amended by 453/2010/EC)

Revision date: 5 September 2014 **Initial date of issue:** 1 May 2007 **SDS No.** 235B-15

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

1.1. Product identifier

ARC 858 (Part B)

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

ARC Polymer Composite. Repair damage caused by impact, abrasion or erosion and chemical attack.

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:

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)

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 Corr. 1B, H314
Eye Dam. 1, H318
Acute Tox. 2, H330
Skin Sens. 1, H317

2.1.2. Classification according to Directives 1999/45/EC and 1975/324/EEC

Corrosive; C; R34
Very toxic; T+; R26
R43

2.1.3. Canadian WHMIS classification

E: Corrosive materials; D2B: Toxic materials causing other effects

2.1.4. Australian classification

Hazardous according to criteria of Safe Work Australia.

2.1.5. Additional information

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

2.2. Label elements

Labelling according to Regulation (EC) No 1272/2008 [CLP] / GHS

Hazard pictograms:



Signal word:

Danger

Hazard statements:

H314	Causes severe skin burns and eye damage.
H330	Fatal if inhaled.
H317	May cause an allergic skin reaction.

Precautionary statements:	P260	Do not breathe mist.
	P280	Wear protective gloves, protective clothing and eye/face protection.
	P303/361/353	IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
	P304/340	IF INHALED: Remove victim to fresh air and keep at rest in a position 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/physician.

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, it can only be categorized as a nuisance dust.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.2. Mixtures

Hazardous Ingredients ¹	% Wt.	CAS No./ EC No.	REACH Reg. No.	Classification (acc. to 1272/2008/EC)	Classification (67/548/EEC)
Diethylenetriamine	10-15	111-40-0 203-865-4	NA	Acute Tox. 2, H330 Acute Tox. 4, H312/302 Skin Corr. 1B, H314 Eye Dam. 1, H318 STOT SE 3, H335 Skin Sens. 1, H317	T+; R26 Xn; R21/22 C; R34 Xi; R37 R43
Silicon carbide	30-40	409-21-2 206-991-8	NA	Not classified	Not classified

Indications of danger acc. to 67/548/EEC: T+; Very toxic: Xn; Harmful: C; Corrosive; Xi; Irritant

*Substance with a workplace exposure limit.

For full text of H-statements and R-phrases: 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, 67/548/EEC, 99/45/EC, REACH
* Controlled Products Regulations
* Safe Work Australia [NOHSC: 1008 (2004)]

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. If conscious, dilute stomach contents with large quantities of milk or water. Contact physician immediately.

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. Prolonged or repeated contact may cause asthma, skin sensitization and other allergic responses.

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 or alcohol-resistant foam

Unsuitable extinguishing media: No data available

5.2. Special hazards arising from the substance or mixture

May generate: ammonia gas, toxic nitrogen oxide gases. Incomplete combustion may form carbon monoxide. Use of water may result in the formation of very toxic aqueous solutions.

5.3. Advice for firefighters

Recommend Firefighters wear self-contained breathing apparatus.

Flammability Classification: –

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**

Do not breathe mist. Avoid all direct 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. 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 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
Diethylenetriamine	1	4	1 (skin)	4.2	1 (skin)	4.3	1 (skin)	4.2
Silicon carbide	(total)	15	(total)	10	(total)	10	–	10
	(resp)	5	(resp)	3	(resp)	4		

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].

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. If exposure limits are exceeded, use a half or full-face respirator with combined dust/organic vapour filter (e.g., EN filter type AP2).

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**

Physical state	paste	Odour	amine odor
Colour	black	Odour threshold	not determined
Initial boiling point	not applicable	Vapour pressure @ 20°C	not applicable
Melting point	not determined	% Aromatics by weight	0%
% Volatile (by volume)	< 1%	pH	not applicable
Flash point	> 209°C (>392°F)	Relative density	1.6 kg/l
Method	Closed Cup	Weight per volume	9.07 lbs/gal.
Viscosity	100K - 180K 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	negligible
Flammability (solid, gas)	not applicable	Oxidising properties	not determined
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

Open flames and red hot surfaces.

10.5. Incompatible materials

Strong oxidizers like liquid Chlorine and concentrated Oxygen.

10.6. Hazardous decomposition products

Carbon Monoxide, NOx, amines 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 asthma, chronic respiratory disease and skin and eye conditions are generally aggravated by exposure.

Acute toxicity -

Oral: If ingested, severe burns of the mouth and throat, as well as a danger of perforation of the oesophagus and the stomach. ATE-mix = 7660 mg/kg.

Substance	Test	Result
Diethylenetriamine	LD50, rat	1080 mg/kg

Dermal: ATE-mix = 7730 mg/kg.

Substance	Test	Result
Diethylenetriamine	LD50, Effects on humans is unknown.	1090

Inhalation: Fatal if inhaled (aerosol / mist). ATE-mix = 0.5 mg/l (mist). Vapors can be severely irritating to the eyes and respiratory tract.

Substance	Test	Result
Diethylenetriamine	LC50, rat, 4 h	> 0.07 - < 0.3 mg/l (mist)

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, Silicon carbide: based on available data, the classification criteria are not met.

Carcinogenicity: As per 29 CFR 1910.1200 (Hazard Communication), 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 Regulation (EC) No 1272/2008.

Reproductive toxicity: Diethylenetriamine, Silicon carbide: not expected to cause toxicity.

STOT-single exposure: Diethylenetriamine: May cause respiratory irritation.

STOT-repeated exposure: Diethylenetriamine, Silicon carbide: based on available data, the classification criteria are not met.

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

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

Liquid. 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. 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 in 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.

European List of Wastes code: 08 04 09

SECTION 14: TRANSPORT INFORMATION

14.1. UN number

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

14.2. UN proper shipping name

ADR/RID/ADN/IMDG/ICAO: AMINES, LIQUID, CORROSIVE, N.O.S. (CONTAINS DIETHYLENETRIAMINE)
 TDG: AMINES, LIQUID, CORROSIVE, N.O.S. (CONTAINS DIETHYLENETRIAMINE)
 US DOT: AMINES, LIQUID, CORROSIVE, N.O.S. (CONTAINS DIETHYLENETRIAMINE)

14.3. Transport hazard class(es)

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

14.4. Packing group

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 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: Shipped as Consumer Commodity ORM-D in packaging having a rated capacity gross weight of 66 lb. or less (49 CFR 173.154(c)). ERG NO. 154
 IMDG: EmS F-A, S-B, IMDG segregation group 18-Alkalis
 ADR: Classification code C7, Tunnel restriction code (E)

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

Hazardous Materials Identification System (HMIS)

4 = Severe Hazard
 3 = Serious Hazard
 2 = Moderate Hazard
 1 = Slight Hazard
 0 = Minimal Hazard
 * = See Section 8

HEALTH	3
FLAMMABILITY	1
REACTIVITY	1
Personal Protection	*

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
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
NOAEL: No Observed Adverse Effect Level
NOEL: No Observed Effect Level
PBT: Persistent, Bioaccumulative and Toxic substance
(Q)SAR: Quantitative Structure-Activity Relationship
REACH: Registration, Evaluation, Authorisation and Restriction of Chemicals Regulation (1907/2006/EC)
RID: Regulations concerning the International Carriage of Dangerous Goods by Rail
SDS: Safety Data Sheet
STEL: Short Term Exposure Limit
STOT: Specific Target Organ Toxicity
TDG: Transportation of Dangerous Goods (Canada)
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 de la santé et de la sécurité du travail (CSST)
European chemical Substances Information System (ESIS)
European Chemicals Agency (ECHA) - Information on Chemicals
Hazardous Substances Data Bank (HSDB)
Hazardous Substances Information System (HSIS)
Swedish Chemicals Agency (KEMI)

Procedure used to derive the classification for mixtures according to Regulation (EC) No 1272/2008:

Classification	Classification procedure
Acute Tox. 2, H330	Calculation method
Acute Tox. 4, H302/312	Bridging principle "Dilution"
Skin Corr. 1B, H314	Calculation method
Eye Dam. 1, H318	Calculation method
Skin Sens. 1, H317	Bridging principle "Dilution"

Relevant H-statements: H302/312: Harmful if swallowed or 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.

Relevant R-phrases: R21/22: Harmful in contact with skin and if swallowed.
R26: Very toxic by inhalation.
R34: Causes burns.
R37: Irritating to respiratory system.
R43: May cause sensitisation by skin contact.

Hazard pictogram names: Corrosion, skull and crossbones

Changes to the SDS in this revision: Sections 2.1, 3, 11, 12.2, 13, 16.

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.