SAFETY DATA SHEET

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

Revision date: 26 April 2018 **Initial date of issue:** 29 February 2016 **SDS No.** 464B-2a

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

1.1. Product identifier

ARC I BX1 RC (Part B)

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

Mixed with ARC I BX1 RC Part A, for a fast cure coating to protect metal surfaces from damage caused by abrasion, erosion and impact forces.

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

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)

SECTION 2: HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture

2.1.1. Classification according to Regulation (EC) No 1272/2008 [CLP]

Skin Corr. 1A, H314
Skin Sens. 1, H317
Aquatic Chronic 2, H411

2.1.2. Classification according to 29 CFR 1910.1200 / WHMIS 2015

Flam. Liq. 4, H227
Skin Corr. 1A, H314
Skin Sens. 1, H317
Aquatic Chronic 2, H411

2.1.3. Classification according to WHMIS 1988

B3: Combustible liquids; E: Corrosive materials; D2B: Toxic materials causing other effects

2.1.4. Australian statement of hazardous nature

Hazardous according to criteria of Safe Work Australia.

2.1.5. 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]

Hazard pictograms:

Signal word: Danger

Hazard statements:

H314	Causes severe skin burns and eye damage.
H317	May cause an allergic skin reaction.
H411	Toxic to aquatic life with long lasting effects.

Precautionary statements:

P273	Avoid release to the environment.
P280	Wear protective gloves, protective 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/shower.
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.
P363	Wash contaminated clothing before reuse.

Supplemental information: None

2.2.2. Labelling according to 29 CFR 1910.1200 / WHMIS 2015

Hazard pictograms:

Signal word: Danger

Hazard statements:

H227	Combustible liquid.
H314	Causes severe skin burns and eye damage.
H317	May cause an allergic skin reaction.
H411	Toxic to aquatic life with long lasting effects.

Precautionary statements:

P210	Keep away from flames and hot surfaces. – No smoking.
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/shower.
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.
P363	Wash contaminated clothing before reuse.

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
Formaldehyde polymer with 1,3-benzenedimethanamine and phenol	10-20	57214-10-5 500-137-0	NA	Aquatic Acute 1, H400 Aquatic Chronic 1, H410 (M-factor = 1)
m-Phenylenebis(methylamine) (Synonym: m-Xylene-alpha, alpha'-Diamine)	7-13	1477-55-0 216-032-5	01-211948 0150-50	Acute Tox. 4, H332 Acute Tox. 4, H302 Skin Corr. 1A, H314 Skin Sens. 1, H317 Aquatic Chronic 3, H412 [Flam. Liq. 4, H227]**

N-(3-(trimethoxysilyl)propyl)ethylenediamine	0.1-0.7	1760-24-3 217-164-6	01-211997 0215-39	Acute Tox. 4, H332 Eye Dam. 1, H318 Skin Sens. 1, H317
Other ingredients:				
Bauxite ($Al_2O_3.xH_2O$), calcined	50-60	92797-42-7 296-578-9	NA	Not classified*
Silicon carbide	7-13	409-21-2 206-991-8	NA	Not classified*

*Substance with a workplace exposure limit.
**Non-CLP classification.
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, REACH
* WHMIS 2015
* 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.

Skin contact: Flood area with water while removing contaminated clothing. Wash clothing before reuse. Wash skin with soap and water. Contact physician.

Eye contact: Flush eyes for at least 15 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

Direct contact will cause burns to skin, eyes and mucous membranes. May cause an allergic skin reaction. Excessive inhalation of vapors or mists can cause coughing, chest tightness and difficulty breathing.

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, water spray.

Unsuitable extinguishing media: No data available

5.2. Special hazards arising from the substance or mixture

None

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

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.

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
Formaldehyde polymer with 1,3-benzenedimethanamine and phenol	–	–	–	–	–	–	–	–
m-Phenylenebis(methylamine)	–	–	(skin)	STEL: 0.1 (Ceiling)	–	–	–	–
N-(3-(trimethoxysilyl)propyl)ethylene diamine	–	–	–	–	–	–	–	–
Bauxite (Al2O3.xH2O), calcined	(total) (resp)	15 5	(resp)	1	(total) (resp)	10 4	–	10
Silicon carbide	(total) (resp)	15 5	(total) (resp)	10 3	(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].

8.2. Exposure controls

8.2.1. Engineering measures

Provide sufficient ventilation to keep the vapor concentrations below the exposure limits.

8.2.2. Individual protection measures

Respiratory protection: Not normally needed. If exposure limits are exceeded, use an approved organic vapor respirator (e.g., EN filter type A-P2).

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

Physical state	paste	**Odour**	amine
Colour	reddish brown	**Odour threshold**	not determined
Initial boiling point	not determined	**Vapour pressure @ 20°C**	not determined
Melting point	not determined	**% Aromatics by weight**	0%
% Volatile (by volume)	0%	**pH**	not applicable
Flash point	77°C (170°F)	**Relative density**	2.22 kg/l
Method	PM Closed Cup	**Weight per volume**	18.49 lbs/gal.
Viscosity	50000 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

None

10.5. Incompatible materials

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

10.6. Hazardous decomposition products

Carbon Monoxide, Carbon Dioxide, NOx, Ammonia and other toxic fumes (by combustion).

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 allergies and skin and eye disorders may be aggravated by exposure.

Acute toxicity -

Oral: ATE-mix > 9055 mg/kg

Substance	Test	Result
m-Phenylenebis(methylamine)	LD50, rat	930 mg/kg
Bauxite (Al2O3.xH2O), calcined	LD50, rat	> 5000 mg/kg, read-across
Silicon carbide	NOAEL, rat	2000 mg/kg
N-(3-(trimethoxysilyl)propyl)ethylenediamine	LD50, rat	2413 mg/kg

Dermal:

Substance	Test	Result
m-Phenylenebis(methylamine)	LD50, rabbit	≈ 2000 mg/kg
Silicon carbide	NOAEL, rat	2000 mg/kg
N-(3-(trimethoxysilyl)propyl)ethylenediamine	LD50, rabbit	2009 mg/kg

Inhalation: Excessive inhalation of vapors or mists can cause coughing, chest tightness and difficulty breathing. ATE-mix = 13.05 mg/l (mist).

Substance	Test	Result
m-Phenylenebis(methylamine)	LC50, rat, 4 h	1.3 mg/l (mist)

Skin corrosion/irritation: May cause burns.

Substance	Test	Result
ARC I BX1 RC (Part B)	Corrositex®	Corrosive
m-Phenylenebis(methylamine)	Skin irritation, guinea pig	Corrosive

Serious eye damage/ irritation: Risk of serious damage to eyes.

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

Germ cell mutagenicity: m-Phenylenebis(methylamine), Silicon carbide, N-(3-(trimethoxysilyl)propyl)ethylenediamine: 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: Bauxite (Al2O3.xH2O), calcined, Silicon carbide: not expected to cause toxicity. Other ingredients: data lacking.

STOT-single exposure: Excessive inhalation of vapors or mists can cause coughing, chest tightness and difficulty breathing.

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

Aspiration hazard: Not expected to be an aspiration toxicant based on viscosity.

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

Toxic to aquatic life with long lasting effects. Formaldehyde polymer with 1,3-benzenedimethanamine and phenol: 96 hr EC50, Rainbow trout = 0.76 mg/l (read-across). m-Phenylenebis(methylamine) is harmful to aquatic organisms [72 h EC50 (for algae): 12 mg/l].

12.2. Persistence and degradability

Unreacted components (Parts A and B), improperly released to the environment, can cause ground and water pollution. m-Phenylenebis(methylamine): biodegradation, OECD 301B (28 days) = 49%, not readily biodegradable. N-(3-(trimethoxysilyl)propyl)ethylenediamine: hydrolyzes in water or moist air, releasing methanol and organosilicons; biodegradation = 50% (OECD 301A, 28 days).

12.3. Bioaccumulative potential

m-Phenylenebis(methylamine): low potential for bioaccumulation (BCF < 100). N-(3-(trimethoxysilyl)propyl)ethylenediamine: bioconcentration in aquatic organisms is not expected to be significant.

12.4. Mobility in soil

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

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 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.

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. (BENZENE-1,3-DIMETHANEAMINE (MXDA))
TDG:	AMINES, LIQUID, CORROSIVE, N.O.S. (BENZENE-1,3-DIMETHANEAMINE (MXDA))
US DOT:	AMINES, LIQUID, CORROSIVE, N.O.S. (BENZENE-1,3-DIMETHANEAMINE (MXDA))

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

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: 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 Liters (49 CFR 173.154 (b,2) ERG NO. 153

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
Fire	
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
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
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)
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)
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 Substances Information System (HSIS)
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:

Classification	Classification procedure
Skin Corr. 1A, H314	Calculation method
Skin Sens. 1, H317	Bridging principle "Dilution"
Aquatic Chronic 2, H411	Calculation method

Relevant H-statements:

H225: Highly flammable liquid and vapour.
H302: Harmful if swallowed.
H314: Causes severe skin burns and eye damage.
H317: May cause an allergic skin reaction.
H318: Causes serious eye damage.
H332: Harmful if inhaled.
H400: Very toxic to aquatic life.
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, exclamation mark, environment

Changes to the SDS in this revision: Section 1.3.

Revision date: 26 April 2018

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.