SAFETY DATA SHEET

in accordance with Safe Work Australia / GHS

Revision date: 15 August 2024 **Date of previous issue:** 12 July 2022 **SDS No.** 447B-3

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

1.1. Product identifier

ARC I BX1 (Part B)

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

Relevant identified uses: Repair damage caused by impact, abrasion, erosion or corrosion; rebuild worn areas; fill holes and cracks; provide abrasion resistant surfaces.

Uses advised against: No information 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
(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

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 Safe Work Australia / GHS

Skin corrosion, Category 1C, H314
Serious eye damage, Category 1, H318
Skin sensitization, Category 1, H317

2.1.2. Additional information

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

2.2. Label elements

Labeling according to Safe Work Australia / GHS

Hazard pictograms:

Signal word: Danger

Hazard statements:

H314	Causes severe skin burns and eye damage.
H317	May cause an allergic skin reaction.

Precautionary statements:	P261	Avoid breathing vapours.
	P272	Contaminated work clothing must not be allowed out of the workplace.
	P280	Wear protective gloves/clothing and eye/face protection.
	P303/361/353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or 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.
	P301/330/331	IF SWALLOWED: rinse mouth. Do NOT induce vomiting.
	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.
	P405	Store locked up.
	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**
Benzyl alcohol	5 - 9	100-51-6	Acute Tox. 4, H302/332 Eye Irrit. 2, H319
1,2-Ethanediamine, N-(2-aminoethyl)-, reaction products with bisphenol A diglycidyl ether homopolymer	4 - 6	68411-71-2	Acute Tox. 4, H302
4,4'-Methylenebis(cyclohexylamine)	2 - 6	1761-71-3	Acute Tox. 4, H302 Skin Corr. 1B, H314 Eye Dam. 1, H318 Skin Sens. 1B, H317 STOT RE 2, H373 (oral)
Diethylenetriamine*	1 - 3	111-40-0	Acute Tox. 2, H330 Acute Tox. 4, H302/H312 Skin Corr. 1B, H314 Eye Dam. 1, H318 Skin Sens. 1B, H317 STOT SE 3, H335
3-Aminopropyldimethylamine	0.1 - 0.4	109-55-7	Flam. Liq. 3, H226 Acute Tox. 4, H302/312 Skin Corr. 1B, H314 Skin Sens. 1B, H317 STOT SE 3, H335
Other ingredients:			
Aluminum oxide	45-55	1344-28-1	Not classified [a]
Silicon carbide	15 - 25	409-21-2	Not classified [a]
Titanium dioxide**	1 - 2	13463-67-7	Not classified [a]
Silica (Quartz)	0.1 - 0.3	14808-60-7	

*This component is toxic by inhalation if sprayed or if aerosol/mist is created. The mixture is neither present in aerosol form nor may aerosols occur.

**Contains less than 1 % of particles with aerodynamic diameter ≤ 10 µm.

[a]3624

[1] Classified according to: 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: If person is conscious, rinse mouth with water. Do not induce vomiting without medical advice. 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

Direct contact will cause burns to skin, eyes and mucous membranes. High vapor concentrations may cause respiratory tract irritation. May cause skin sensitization as evidenced by rashes or hives.

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: Incomplete combustion may form carbon monoxide. May generate: ammonia gas, toxic nitrogen oxide gases.

Other hazards: 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.

Australian HAZCHEM Emergency Action Code:

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Evacuate area. Provide adequate ventilation. Avoid skin contact. Utilize exposure controls and personal protection as specified in Section 8.

6.2. Environmental Precautions

No special requirements.

6.3. Methods and material for containment and cleaning up

Scoop up and transfer to a suitable container for disposal. Flush final traces of spill with water.

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. Wash thoroughly after handling. 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. Avoid creating and breathing dust during removal, drilling, grinding, sawing or sanding.

7.2. Conditions for safe storage, including any incompatibilities

Store in 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	ACGIH TLV[2]		AUSTRALIA ES[3]	
	ppm	mg/m³	ppm	mg/m³
Benzyl alcohol	N/A	N/A	N/A	N/A
1,2-Ethanediamine, N-(2-aminoethyl)-, reaction products with bisphenol A diglycidyl ether homopolymer	N/A	N/A	N/A	N/A
4,4'-Methylenebis(cyclohexylamine)	N/A	N/A	N/A	N/A
Diethylenetriamine	1	(skin)	1 (skin)	4.2
3-Aminopropyldimethylamine	N/A	N/A	N/A	N/A
Aluminum oxide	(resp.)	1	N/A	10 (insp.)
Silicon carbide	(inhal.) (resp.)	10 3	N/A	10 (insp.)
Titanium dioxide	N/A	10	N/A	10
Silica (Quartz)	(resp.)	0.025	(resp.)	0.05

[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 vapor concentrations below the exposure limits. If necessary, provide local exhaust. 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. In case of insufficient ventilation, utilize an approved organic vapor respirator (e.g., EN filter type A/P).

Protective gloves: Chemical resistant gloves (e.g., butyl rubber, neoprene or 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: 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	gritty paste	**pH**	not applicable
Colour	light gray	**Kinematic viscosity**	0.4 - 0.8 million cSt @25°C (calculated)
Odour	amine	**Solubility in water**	slightly soluble
Odour threshold	not determined	**Partition coefficient n-octanol/water (log value)**	not applicable
Boiling point or range	not determined	**Vapour pressure @ 20°C**	not determined
Melting point/freezing point	not determined	**Density and/or relative density**	2.558 kg/l
% Volatile (by volume)	0%	**Weight per volume**	21.28 lbs/gal.
Flammability	not applicable	**Vapour density (air=1)**	> 1
Lower/upper flammability or explosion limits	not applicable	**Rate of evaporation (ether=1)**	< 1
Flash point	> 100°C (> 212°F)	**% Aromatics by weight**	none
Method	PM Closed Cup	**Particle characteristics**	not applicable
Autoignition temperature	not determined	**Explosive properties**	not applicable
Decomposition temperature	not determined	**Oxidising properties**	not applicable

9.2. Other information

Dynamic viscosity: 1 - 2 million cPs @ 25°C

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 acids and strong oxidizers like liquid Chlorine and concentrated Oxygen, reactive metals.

10.6. Hazardous decomposition products

Nitric acid, NOx, Ammonia, Carbon Monoxide, Carbon Dioxide, aldehydes, flammable hydrocarbon fragments 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 allergies and skin and eye disorders may be aggravated by exposure.

Acute toxicity -

Oral: May be harmful if swallowed. ATE-mix = 4,167 mg/kg.

Substance	Test	Result
Benzyl alcohol	LD50, rat	1,620 mg/kg
1,2-Ethanediamine, N-(2-aminoethyl)-, reaction products with bisphenol A diglycidyl ether homopolymer	LD50, rat	200-500 mg/kg
4,4'-Methylenebis(cyclohexylamine)	LD50, rat	380 mg/kg
Diethylenetriamine	LD50, rat	1,553 mg/kg
Aluminum oxide	LD50, rat	> 5,000 mg/kg
Silicon carbide	NOAEL, rat	2,000 mg/kg
Titanium dioxide	LD50, rat	> 10,000 mg/kg

Dermal: ATE-mix = 23,285 mg/kg.

Substance	Test	Result
Benzyl alcohol	LD50, rabbit	> 2,000 mg/kg
4,4'-Methylenebis(cyclohexylamine)	LD50, rabbit	2,110 mg/kg
Diethylenetriamine	LD50, rabbit	1,045 mg/kg
Silicon carbide	NOAEL, rat	2,000 mg/kg

Inhalation: High vapor concentrations may cause respiratory tract irritation. ATE-mix = 149.86 mg/l (vapour).

Substance	Test	Result
Benzyl alcohol	LC50, rat, 4 h	11 mg/l (vapour, cATpE)
Diethylenetriamine	LC50, rat, 4 h	No mortality at vapor saturation level

Skin corrosion/irritation: Causes burns.

Substance	Test	Result
Diethylenetriamine	Skin irritation, rabbit	Corrosive

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

Substance	Test	Result
Benzyl alcohol	OECD 405	Irritating
Diethylenetriamine	Eye irritation, rabbit	Corrosive

Respiratory or skin sensitisation: May cause skin sensitization as evidenced by rashes or hives.

Substance	Test	Result
Diethylenetriamine	Skin sensitization, guinea pig	Sensitizing
3-Aminopropyldimethylamine	Skin sensitization, guinea pig	Sensitizing

Germ cell mutagenicity: Benzyl alcohol, Diethylenetriamine, Aluminum oxide, 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 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.

Reproductive toxicity: Diethylenetriamine, Aluminum oxide, Silicon carbide, Titanium dioxide: not expected to cause toxicity. Benzyl alcohol: based on available data, the classification criteria are not met.

STOT – single exposure: Diethylenetriamine: may cause respiratory irritation. Benzyl alcohol, Aluminum oxide, Silicon carbide: based on available data, the classification criteria are not met.

STOT – repeated exposure: 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. 4,4'-Methylenebis(cyclohexylamine): may cause damage to organs through prolonged or repeated exposure if swallowed. Benzyl alcohol, Diethylenetriamine, Aluminum oxide, 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

4,4'-Methylenebis(cyclohexylamine), Diethylenetriamine: not readily biodegradable. Benzyl alcohol: readily biodegradable (OECD 301C, 301A). Unreacted components (Parts A and B), improperly released to the environment, can cause ground and water pollution. Aluminum oxide, Silicon carbide, Titanium dioxide, Silica: inorganic substances.

12.3. Bioaccumulative potential

Diethylenetriamine, Benzyl alcohol: bioconcentration in aquatic organisms is not expected to be significant. Diethylenetriamine: log Kow = 2.13. Benzyl alcohol: log Kow = 1.1. 4,4'-Methylenebis(cyclohexylamine): low potential for bioaccumulation (bioconcentration factor < 100, estimated).

12.4. Mobility in soil

Paste. Slightly soluble in water. In determining environmental mobility, consider the product's physical and chemical properties (see Section 9). Diethylenetriamine, Benzyl alcohol: expected to be highly mobile in soil (Benzyl alcohol, Koc, calculated: 15.7).

12.5. Endocrine disrupting properties

None known

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 a properly licensed facility. 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.

SECTION 14: TRANSPORT INFORMATION

14.1. UN number or ID number

ADG/RID/IMDG/ICAO: UN3259

14.2. UN proper shipping name

ADG/RID/IMDG/ICAO: AMINES, SOLID, CORROSIVE, N.O.S. (CYCLOALIPHATIC AMINE / DIETHYLENETRIAMINE)

14.3. Transport hazard class(es)

ADG/RID/IMDG/ICAO: 8

14.4. Packing group

ADG/RID/IMDG/ICAO: 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

IMDG: EMS. F-A, S-B, IMDG SEGREGATION GROUP 18-ALKALIS**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

None

SECTION 16: OTHER INFORMATION

Abbreviations and acronyms:
ADG: Australian Dangerous Goods Code
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
TWA: Time Weighted Average
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
Skin Corr. 1C, H314	Calculation method
Eye Dam. 1, H318	Calculation method
Skin Sens. 1, H317	Calculation method

Relevant H-statements:
H226: Flammable liquid and vapour.
H302: Harmful if swallowed.
H312: Harmful in contact with skin.
H314: Causes severe skin burns and eye damage.
H317: May cause an allergic skin reaction.
H318: Causes serious eye damage.
H319: Causes serious eye irritation.
H330: Fatal if inhaled.
H332: Harmful if inhaled.
H335: May cause respiratory irritation.
H373: May cause damage to organs through prolonged or repeated exposure.

Hazard pictogram names:

Further information: None

Changes to the SDS in this revision: Complete change to represent new formulation.

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.