

	in accordance with (
			S 2015 and Safe Work Au			
	-	Date of previous issue:	•	SDS No. 472B-1		
SECTION 1: IDENTIF	ICATION OF THE SUB	STANCE/MIXTURE AND	OF THE COMPANY/UND	DERTAKING		
1.1. Product identifie	r					
ARC S5 (Part B)						
1.2. Relevant identifie	ed uses of the substan	ce or mixture and uses a	idvised against			
Relevant identified u		ARC S5 (Part A), for use re applications.	as a thin film coating on p	roperly prepared surfaces for		
Uses advised agains	t: No information	available				
Reason why uses ad	vised against: Not a	applicable				
1.3. Details of the su	oplier of the safety data	a sheet				
Company:		Supplie	r:			
A.W. CHESTERTON (860 Salem Street	COMPANY					
Groveland, MA 01834	1507, USA					
Tel. +1 978-469-6446	Fax: +1 978-469-678	5				
(Mon Fri. 8:30 - 5:00 SDS requests: <u>www.c</u>	,					
): ProductSDSs@chest	erton.com				
E-mail: <u>customer.servi</u>	ce@chesterton.com					
	ton Company Ltd. , 889 Dntario L7L 4X8 – Tel. 9					
1.4. Emergency telep	hone 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: HAZAR	OS IDENTIFICATION					
2.1. Classification of	the substance or mixt	ire				
2.1.1. Classification a	according to 29 CFR 19	10.1200 / WHMIS 2015 /	Safe Work Australia / GH	IS		
	Flammable liquid, Category 4, H227					
	Acute toxicity, Category 4, H302/312/332 Skin corrosion, Category 1A, H314					
Serious eye damage,						
Skin sensitization, Cat	egory 1, H317					
	oxicity – single exposure		al)			
Specific target organ toxicity – repeated exposure, Category 2, H373 (oral) Hazardous to the aquatic environment, Chronic, Category 3, H412						
2.1.2. Additional info						
For full text of H-stater	For full text of H-statements: see SECTIONS 2.2 and 16.					
2.2. Label elements						
Labeling according t	o 29 CFR 1910.1200 / V	/HMIS 2015 / Safe Work	Australia / GHS			
Hazard pictograms:						
		$\rightarrow \Diamond \rightarrow$				
Signal word:	Danger					

Hazard statements:	H227 H302/312/332 H314 H317 H335 H373 H412	Combustible liquid. Harmful if swallowed, in contact with skin or if inhaled. Causes severe skin burns and eye damage. May cause an allergic skin reaction. May cause respiratory irritation. May cause damage to organs through prolonged or repeated exposure if swallowed. Harmful to aquatic life with long lasting effects.
Precautionary statements:	P303/361/353 P304/340	 Keep away from flames and hot surfaces. – No smoking. Do not breathe vapours/spray. Wash skin thoroughly after handling. Do not eat, drink or smoke when using this product. Use only outdoors or in a well-ventilated area. Contaminated work clothing must not be allowed out of the workplace. Avoid release to the environment. Wear protective gloves, protective clothing and eye/face protection. IF SWALLOWED: rinse mouth. Do NOT induce vomiting. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower. IF INHALED: Remove person to fresh air and keep comfortable for breathing. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor. If skin irritation or rash occurs: Get medical advice/attention. Wash contaminated clothing before reuse. Store in a well-ventilated place. Keep container tightly closed. Keep cool. Store locked up. 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	
1,2-Cyclohexanediamine	85-95	694-83-7	Flam. Liq. 4, H227 Acute Tox. 4, H302/312/332 Skin Corr. 1A, H314 Eye Dam. 1, H318 STOT SE 3, H335 Aquatic Acute 3, H402	
4,4'-Methylenebis(cyclohexylamine)	1-7	1761-71-3	Acute Tox. 4, H302 Skin Corr. 1B, H314 Eye Dam. 1, H318 Skin Sens. 1B, H317 STOT RE 2, H373 (liver, muscles)	
3-Aminomethyl-3,5,5-trimethylcyclohexylamine (Synonym: Isophoronediamine)	1-7	2855-13-2	Acute Tox. 4, H302 Skin Corr. 1B, H314 Eye Dam. 1, H318 Skin Sens. 1A, H317 Aquatic Chronic 3, H412	
Diethylmethylbenzenediamine	1-<2.5	68479-98-1	Acute Tox. 4, H302/312 Eye Irrit. 2, H319 STOT RE 2, H373 (pancreas) Aquatic Acute 1, H400 (M-factor = 1) Aquatic Chronic 1, H410	

For full text of H-statements: see SECTION 16.

¹ Classified according to:	29 CFR 1910.1200, 1915, 1916	6, 1917, Mass. Right-to-K	now Law (ch. 40, M.G.LO. 11	IF), WHMIS 2015, 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. Contact physician immediately.
- **Eye contact:** Flush eyes for at least 15 minutes with large amounts of water. Remove contact lenses, if present and easy to do. Continue rinsing. Contact physician immediately.
- Ingestion: Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. 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. Do not breathe mist/vapours. See section 8.2.2 for recommendations on personal protective equipment.

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

Causes severe skin burns and eye damage. High vapor concentrations and mist can cause severe eye and respiratory tract irritation. May cause skin sensitization as evidenced by rashes or hives. If ingested, severe burns of the mouth and throat, as well as a danger of perforation of the oesophagus and the stomach.

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, foam, water spray

Unsuitable extinguishing media: Water jets

5.2. Special hazards arising from the substance or mixture

Hazardous combustion products: May generate: ammonia gas, toxic nitrogen oxide gases, carbon monoxide. Burning produces noxious and toxic fumes.

Other hazards: Vapors may travel considerable distance to a source of ignition and flash back.

5.3. Advice for firefighters

Cool exposed containers with water. Recommend Firefighters wear self-contained breathing apparatus and complete fire service protective equipment.

Australian HAZCHEM Emergency Action Code: 2 X

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. Keep away from sources of ignition. If removal of ignition sources is not possible, then flush material away with water.

6.2. Environmental Precautions

Keep out of sewers, streams and waterways.

6.3. Methods and material for containment and cleaning up

Contain spill to a small area. Pick up with absorbent material (sand, sawdust, clay, etc.) and place in 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 vapours/spray. Use only outdoors or in a well-ventilated area. Utilize exposure controls and personal protection as specified in Section 8. When using, do not eat, drink or smoke. Wash hands thoroughly after handling. Keep away from flames and hot surfaces. Do not contaminate with sodium nitrite or other nitrosating agents, which could cause the formation of cancer-causing nitrosamine. 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

Keep container tightly closed. Store in a cool, dry and well-ventilated area. Keep from freezing. Do not store near food or feed.

7.3. Specific end use(s)

No special precautions.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters

Occupational exposure limit values

Ingredients	OSH		ACGI	H TLV ²	AUSTR	ALIA ES ³
	ppm	mg/m³	ppm	mg/m³	ppm	mg/m³
1,2-Cyclohexanediamine	N/A	N/A	N/A	N/A	N/A	N/A
4,4'-Methylenebis(cyclohexylamine)	N/A	N/A	N/A	N/A	N/A	N/A
3-Aminomethyl-3,5,5- trimethylcyclohexylamine	N/A	N/A	N/A	N/A	N/A	N/A
Diethylmethylbenzenediamine	N/A	N/A	N/A	N/A	N/A	N/A
Diethylmethylbenzenediamine	N/A	N/A	N/A	N/A	N/A	N/A

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

Use only in well-ventilated areas. 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:	Use positive pressure, supplied-air respirators if there is a potential for uncontrolled release, if exposure levels are unknown, or under circumstances where air-purifying respirators may not provide adequate protection.	
Protective gloves:	Chemical resistant gloves (e.g., nitrile rubber, butyl rubber, neoprene, PVC)	
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 Colour	viscous liquid light brown	pH Kinematic viscosity	not applicable 10.3 cSt @ 25°C
Odour	amine	Solubility in water	miscible
Odour threshold	not determined	Partition coefficient n-octanol/water (log value)	not applicable
Boiling point or range	191°C (376°F)	Vapour pressure @ 20°C	51.6 Pa @ 20°C
Melting point/freezing point	not determined	Density and/or relative density	0.97 kg/l
% Volatile (by volume)	none	Weight per volume	15.2 lbs/gal.
Flammability	not determined	Vapour density (air=1)	> 1
Lower/upper flammability or explosion limits	not determined	Rate of evaporation (ether=1)	< 1
Flash point	70°C (158°F)	% Aromatics by weight	none
Method	component data	Particle characteristics	not applicable
Autoignition temperature	340°C (644°F)	Explosive properties	not determined
Decomposition temperature	>300°C (>572°F)	Oxidising 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 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, heat, sparks and red hot surfaces.

10.5. Incompatible materials

Strong acids and strong oxidizers like liquid Chlorine and concentrated Oxygen. Reaction with peroxides may result in violent decomposition of peroxide possibly creating an explosion. Do not contaminate with sodium nitrite or other nitrosating agents.

10.6. Hazardous decomposition products

Nitric acid, NOx, Ammonia, Carbon Monoxide, Carbon Dioxide, nitrosamines and other toxic fumes.

Diethylmethylbenzenediamine

SECTION 11: TOXICOLOGICAL INFORMATION

11.1. Information on toxicological effects

Primary route of exposure under normal use: Acute toxicity -	Inhalation, skin and eye contact. Personnel with pre-existing allergies and skin and eye disorders may be aggravated by exposure.			
Oral:	Harmful if swallowed. ATE-mix = 1053.7 throat, as well as a danger of perforation Substance			
	1,2-Cyclohexanediamine	LD50, rat	1170 mg/kg	
		,		
	4,4'-Methylenebis(cyclohexylamine)	LD50, rat	625 mg/kg	
	3-Aminomethyl-3,5,5- trimethylcyclohexylamine	LD50, rat	1030 mg/kg	

Dermal:

Harmful in contact with skin. ATE-mix = 1814.3 mg/kg.

Substance	Test	Result
1,2-Cyclohexanediamine	LD50, rat	1870 mg/kg
4,4'-Methylenebis(cyclohexylamine)	LD50, rabbit	2110 mg/kg
3-Aminomethyl-3,5,5- trimethylcyclohexylamine	LD50, rabbit	1840 mg/kg
Diethylmethylbenzenediamine	cATpE	1100 mg/kg

LD50. rat

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485 mg/kg

Inhalation:

Harmful if inhaled (aerosol/mist). ATE-mix =	= 1.36 mg/l (aerosol/mist).	
Substance	Test	Result
1,2-Cyclohexanediamine	LCLo, rat, 4 h	3.2 mg/l (mist/va

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	Substance	Test	Result		
	1,2-Cyclohexanediamine	LCLo, rat, 4 h LC50, rat, 4 h	3.2 mg/l (mist/vapor)		
	1,2-Cyclohexanediamine	LC50, rat, 4 h	1.225 (mist/vapor, analytical, similar		
			material)		
	3-Aminomethyl-3,5,5-	LC50, rat, 4 h	> 5.01 mg/l (mist,		
	trimethylcyclohexylamine		analytical)		
	Diethylmethylbenzenediamine	LC50, rat, 1 h	> 2.45 mg/l (mist)		
Skin corrosion/irritation:	Causes severe burns.				
	Substance	Test	Result		
	3-Aminomethyl-3,5,5- trimethylcyclohexylamine	Skin irritation, rabbit	Corrosive		
Serious eye damage/ irritation:	Causes serious eye damage.				
	Substance	Test	Result		
	1,2-Cyclohexanediamine	Eye irritation, rabbit	Corrosive		
	3-Aminomethyl-3,5,5- trimethylcyclohexylamine	Eye irritation, rabbit (OECD 405)	Corrosive		
Respiratory or skin sensitisation:	May cause skin sensitization as evidenced by rashes or hives.				
	Substance	Test	Result		
	3-Aminomethyl-3,5,5- trimethylcyclohexylamine	Skin sensitization, guinea pig (OECD 406)	Sensitizing		
Germ cell mutagenicity:	1,2-Cyclohexanediamine, 3-Aminomethyl-3,5,5-trimethylcyclohexylamine: based on available data, the classification criteria are not met.				
Carcinogenicity:	This product contains no carcinogens a International Agency for Research on 0 Administration (OSHA) or the Europea	Cancer (IARC), the Occupation			
Reproductive toxicity:	3-Aminomethyl-3,5,5-trimethylcyclohex	ylamine: not expected to cause	e toxicity.		
STOT – single exposure:	May cause respiratory irritation.				
STOT – repeated exposure:	May cause damage to organs through prolonged or repeated exposure (liver, muscles, pancreas). Diethylmethylbenzenediamine: NOEL, pancreas, 2 years, rat, male - 35 ppm; female – 70 ppm. 1,2-Cyclohexanediamine, 3-Aminomethyl-3,5,5-trimethylcyclohexylamine: not expected to cause organ damage from prolonged or repeated exposure.				
Aspiration hazard:	Not classified due to lack of data.				
Other information:	None known				
SECTION 12: ECOLOGICAL I	NFORMATION				

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

Harmful to aquatic life with long lasting effects. Diethylmethylbenzenediamine: 48 h EC50 (for daphnia) = 0.5 mg/l; 48 h LC50 (Leuciscus idus) = 194 mg/l.

12.2. Persistence and degradability

Unreacted components (Parts A and B), improperly released to the environment, can cause ground and water pollution. 1,2-Cyclohexanediamine: readily biodegradable (OECD 301D, 17 days). 4,4'-Methylenebis(cyclohexylamine), Diethylmethylbenzenediamine: expected to be resistant to biodegradation.

12.3. Bioaccumulative potential

4,4'-Methylenebis(cyclohexylamine) : low potential for bioaccumulation (bioconcentration factor < 100, estimated). 1,2-Cyclohexanediamine: bioconcentration in aquatic organisms is not expected to be significant (log Kow < -0.9, OECD 107).

12.4. Mobility in soil

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

12.5. Endocrine disrupting properties					
None known					
12.6. Other adverse effects					
None known					
SECTION 13: DISPOSAL CONSIDERATI 13.1. Waste treatment methods	UNS				
	d material is considered nonhazardous. Unreacted components are a special waste. n with a properly licensed facility. Check local, state and national/federal regulations ment.				
SECTION 14: TRANSPORT INFORMATION	ON				
14.1. UN number or ID number					
ADG/ADR/RID/ADN/IMDG/ICAO:	UN2735 UN2735				
TDG: US DOT:	UN2735				
14.2. UN proper shipping name					
ADG/ADR/RID/ADN/IMDG/ICAO:	AMINES, LIQUID, CORROSIVE, N.O.S.				
	(1,2-DIAMINOCYCLOHEXANE /4,4'-				
TRO	METHYLENEBISCYCLOHEXANAMINE, METHYLIMIDAZOLE, 1-)				
TDG:	AMINES, LIQUID, CORROSIVE, N.O.S. (1,2-DIAMINOCYCLOHEXANE /4,4'-				
	METHYLENEBISCYCLOHEXANAMINE, METHYLIMIDAZOLE, 1-)				
US DOT:	AMINES, LIQUID, CORROSIVE, N.O.S.				
	(1,2-DIAMINOCYCLOHEXANE /4,4'- METHYLENEBISCYCLOHEXANAMINE,METHYLIMIDAZOLE, 1-)				
14.3. Transport hazard class(es)	WETTTLENEDISCICEOTEXANAWINE, WETTTEIWIDAZOLE, 1-)				
ADG/ADR/RID/ADN/IMDG/ICAO:	8				
TDG:	8				
US DOT:	8				
14.4. Packing group					
ADG/ADR/RID/ADN/IMDG/ICAO:					
TDG: US DOT:					
14.5. Environmental hazards					
NO ENVIRONMENTAL HAZARDS					
14.6. Special precautions for user					
NO SPECIAL PRECAUTIONS FOR USE					
14.7. Maritime transport in bulk accordin NOT APPLICABLE	ng to IMO instruments				
14.8. Other information					
	D QUANTITIES IN PACKAGING HAVING A RATED CAPACITY GROSS WEIGHT OF 66 LB. OR AGES NOT OVER 1 LITER (49 CFR 173.154 (B,1) ERG NO. 153 GATION GROUP 18-ALKALIS				
ADR: CLASSIFICATION CODE C7, TU					
LBS.) OR LESS AND IN INNER P	QUANTITY IN PACKAGING HAVING A RATED CAPACITY GROSS WEIGHT OF 30KG (66 ACKAGES NOT OVER 1 LITER (ADR 3.4.1, ADR 3.4.2)				
ADG HAZCHEM CODE: 2X HIN: 88/80					
SECTION 15: REGULATORY INFORMAT	FION egulations/legislation specific for the substance or mixture				
•	eguialiononegiolalion opecific for the Substance of IIIXture				
15.1.1. National regulations					
US EPA SARA TITLE III					
312 Hazards:	Chemicals subject to reporting requirements of Section 313 of EPCRA and of 40 CFR 372:				
Flammable liquid	None				
Acute toxicity Skin corrosion	Acute toxicity				
Skill collosion Serious eye damage					
Skin sensitization					
Specific target organ toxicity – single expo					
Specific target organ toxicity – repeated ex	xposure				
	,				

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Hazard pictogram names:

TSCA: All components are listed or exempted.	
Other national regulations: None	
SECTION 16: OTHER INFO	RMATION
Abbreviations and acronyms:ADG: Au ADN: Eu ADR: Eu ADR: Eu ATE: Act BCF: Bid cATPE: (C ES: Expo GHS: GM ICAO: In IMDG: In LC50: Le LD50: Le LOEL: LC N/A: Not NOEC: N NOEC: N NOEC: N NOEC: S SDS: Sa STEL: SI STOT RI STOT SE TDG: Tra TWA: Tir US DOT WHMIS:	Instruction Istralian Dangerous Goods Code ropean Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways ropean Agreement concerning the International Carriage of Dangerous Goods by Road Lte Toxicity Estimate boure the Acute Toxicity point Estimate Downerted Acute Toxicity point Estimate Downer Standard Downer Standard Downer Standard Downer Standard Downer Standard Available No Observed Effect Level Applicable Available No Observed Effect Level Drganization for Economic Co-operation and Development Quantitative Structure-Activity Relationship commended Exposure Limit Julations concerning the International Carriage of Dangerous Goods by Rail fety Data Sheet hort Term Exposure Limit E: Specific Target Organ Toxicity, Repeated Exposure E: Specific Target Organ Toxicity, Single Exposure ansportation of Dangerous Goods (Canada) ne Weighted Average : United States Department of Transportation Workplace Hazardous Materials Information System breviations and acronyms can be looked up at <u>www.wikipedia.org</u> .
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)
	he classification for mixtures according to GHS:
Classification Flam. Liq. 4, H227	Classification procedure On basis of components
Acute Tox. 4, H302/312/332	
Skin Corr. 1B, H314	Calculation method
Eye Dam. 1, H318	Calculation method
Skin Sens. 1, H317	Calculation method
STOT RE 2, H373	Calculation method
Aquatic Chronic 3, H412	Calculation method
Relevant H-statements:	 H227: Combustible liquid. 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 damage. H319: Causes serious eye irritation. H332: Harmful if inhaled. H335: May cause respiratory irritation. H373: May cause damage to organs through prolonged or repeated exposure.

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H412: Harmful to aquatic life with long lasting effects.

Corrosion, health hazard, exclamation mark

Further information:NoneDate of last revision:15 February 2024

Changes to the SDS in this revision: Section 14.8.

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.