

1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

1.1 Product identifier

Product name HARDENER HV 998
Synonym(s) NSN: 8040-12-176-2333
998 HV HARDENER • HARDENER COMPONENT FOR ARALDITE KIT K138 • HV 998 HARDENER

1.2 Uses and uses advised against

Use(s) CURING AGENT • HARDENER • HARDENER FOR EPOXY RESIN SYSTEM • TWO COMPONENT EPOXY SYSTEM

1.3 Details of the supplier of the safety data sheet

Supplier name HUNTSMAN ADVANCED MATERIALS (AUSTRALIA)
Address Gate 3, 765 Ballarat Rd, Deer Park, Victoria, Australia, 3023
Telephone (03) 9933 6691
Fax (03) 9361 6066
Email Global_Product_EHS_AdMat@huntsman.com
Website <http://www.huntsman.com>

1.4 Emergency telephone number(s)

Emergency 1800 786 152
Emergency (NZ only) 0800 441 216

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

CLASSIFIED AS HAZARDOUS ACCORDING TO SAFE WORK AUSTRALIA CRITERIA

GHS Classification(s) Skin Corrosion/Irritation: Category 2
Skin Sensitisation: Category 1
Serious Eye Damage / Eye Irritation: Category 1
Acute Toxicity: Inhalation: Category 3

2.2 Label elements

Signal word DANGER

Pictograms



Hazard statement(s)

H315 Causes skin irritation.
H317 May cause an allergic skin reaction.
H318 Causes serious eye damage.
H331 Toxic if inhaled.

Prevention statement(s)

P261 Avoid breathing dust/fume/gas/mist/vapours/spray.
P264 Wash thoroughly after handling.
P271 Use only outdoors or in a well-ventilated area.
P272 Contaminated work clothing should not be allowed out of the workplace.
P280 Wear protective gloves/protective clothing/eye protection/face protection.

Response statement(s)

P302 + P352 IF ON SKIN: Wash with plenty of soap and water.
P304 + P340 IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing.
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to

Product name **HARDENER HV 998**

do. Continue rinsing.
P310 Immediately call a POISON CENTER or doctor/physician.
P321 Specific treatment is advised - see first aid instructions.
P333 + P313 If skin irritation or rash occurs: Get medical advice/attention.
P362 Take off contaminated clothing and wash before re-use.

Storage statement(s)

P403 + P233 Store in a well-ventilated place. Keep container tightly closed.
P405 Store locked up.

Disposal statement(s)

P501 Dispose of contents/container in accordance with relevant regulations.

2.3 Other Hazards

No information provided.

3. COMPOSITION/ INFORMATION ON INGREDIENTS

3.1 Substances / Mixtures

Ingredient	CAS number	EC number	Content
BISPHENOL A	80-05-7	201-245-8	<10%
DIETHYLENETRIAMINE	111-40-0	203-865-4	<10%
N-DIMETHYL-DIPROPYLENE-TRIAMINE	10563-29-8	234-148-4	<10%
TRIETHYLENETETRAMINE (TETA)	112-24-3	203-950-6	<10%
NON HAZARDOUS INGREDIENTS	Not Available	Not Available	remainder

4. FIRST AID MEASURES

4.1 Description of first aid measures

Eye If in eyes, hold eyelids apart and flush continuously with running water. Continue flushing until advised to stop by a Poisons Information Centre, a doctor, or for at least 15 minutes.

Inhalation If inhaled, remove from contaminated area. To protect rescuer, use a Type A (Organic vapour) respirator or an Air-line respirator (in poorly ventilated areas). Apply artificial respiration if not breathing.

Skin If skin or hair contact occurs, remove contaminated clothing and flush skin and hair with running water. Continue flushing with water until advised to stop by a Poisons Information Centre or a doctor.

Ingestion For advice, contact a Poison Information Centre on 13 11 26 (Australia Wide) or a doctor (at once). If swallowed, do not induce vomiting.

First aid facilities No information provided.

4.2 Most important symptoms and effects, both acute and delayed

No information provided.

4.3 Immediate medical attention and special treatment needed

Treat symptomatically.

5. FIREFIGHTING MEASURES

5.1 Extinguishing media

Dry agent, carbon dioxide or foam. Prevent contamination of drains and waterways.

5.2 Special hazards arising from the substance or mixture

Combustible. May evolve toxic gases (carbon/ nitrogen oxides, amines, ammonia, hydrocarbons) when heated to decomposition. May evolve sulphur oxides when heated to decomposition.

5.3 Advice for firefighters

Evacuate area and contact emergency services. Toxic gases may be evolved in a fire situation. Remain upwind and notify those downwind of hazard. Wear full protective equipment including Self Contained Breathing Apparatus (SCBA) when combating fire. Use waterfog to cool intact containers and nearby storage areas.

Product name **HARDENER HV 998**

5.4 Hazchem code

None allocated

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Wear Personal Protective Equipment (PPE) as detailed in section 8 of the SDS. Clear area of all unprotected personnel. Ventilate area where possible. Contact emergency services where appropriate.

6.2 Environmental precautions

Prevent product from entering drains and waterways.

6.3 Methods of cleaning up

Contain spillage, then cover / absorb spill with non-combustible absorbent material (vermiculite, sand, or similar), collect and place in suitable containers for disposal. Eliminate all sources of ignition.

6.4 Reference to other sections

See Sections 8 and 13 for exposure controls and disposal.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling

Before use carefully read the product label. Use of safe work practices are recommended to avoid eye or skin contact and inhalation. Observe good personal hygiene, including washing hands before eating. Prohibit eating, drinking and smoking in contaminated areas.

7.2 Conditions for safe storage, including any incompatibilities

Store in a cool, dry, well ventilated area, removed from incompatible substances and foodstuffs. Ensure containers are adequately labelled, protected from physical damage and sealed when not in use. Store as a Class C2 Combustible Liquid (AS1940). Store between 2°C and 40°C.

7.3 Specific end use(s)

No information provided.

8. EXPOSURE CONTROLS/ PERSONAL PROTECTION

8.1 Control parameters

Exposure standards

Substance	Reference	TWA		STEL	
		ppm	mg/m ³	ppm	mg/m ³
Diethylene triamine	SWA (AUS)	1	4.2	--	--

Biological limits

No biological limit values have been entered for this product.

8.2 Exposure controls

Engineering Controls Avoid inhalation. Use in well ventilated areas. Where an inhalation risk exists, mechanical extraction ventilation is recommended. Maintain vapour levels below the recommended exposure standard.

PPE

- Eye/Face** Wear splash-proof goggles.
- Hand** Wear viton (R) or nitrile gloves.
- Body** Wear coveralls. If spraying, with prolonged use, or if in confined areas, wear impervious coveralls.
- Respiratory** Where an inhalation risk exists, wear a Type A (Organic vapour) respirator. If sanding dry product, wear a Class P1 (Particulate) respirator. If spraying, with prolonged use, or if in confined areas, wear an Air-line respirator.

Product name **HARDENER HV 998**

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance	GREY PASTE
Odour	AMINE ODOUR
Odour Threshold	NOT AVAILABLE
Flammability	CLASS C2 COMBUSTIBLE
Flash Point	245°C (cc)
Boiling Point	> 200°C
Melting Point	NOT AVAILABLE
Evaporation Rate	NOT AVAILABLE
pH	NOT AVAILABLE
Specific Gravity	NOT AVAILABLE
Solubility (water)	NOT AVAILABLE
Vapour Density	NOT AVAILABLE
Vapour Pressure	< 0.095 kPa @ 20°C
Upper Explosion Limit	NOT AVAILABLE
Lower Explosion Limit	NOT AVAILABLE
Partition Coefficient	NOT AVAILABLE
Autoignition Temperature	NOT AVAILABLE
Decomposition Temperature	NOT AVAILABLE
Viscosity	55000 mPa.s to 80000 mPa.s @ 25°C
Explosive Properties	NOT AVAILABLE
Oxidising Properties	NOT AVAILABLE

9.2 Other information

No information provided.

10. STABILITY AND REACTIVITY

10.1 Reactivity

Carefully review all information in sections 10.2 to 10.6.

10.2 Chemical stability

Stable under recommended conditions of storage.

10.3 Possibility of hazardous reactions

Hazardous polymerization is not expected to occur.

10.4 Conditions to avoid

Avoid heat, sparks, open flames and other ignition sources.

10.5 Incompatible materials

Incompatible with oxidising agents (e.g. hypochlorites), acids (e.g. nitric acid), alkalis (e.g. sodium hydroxide), heat and ignition sources.

10.6 Hazardous decomposition products

May evolve toxic gases (carbon/ nitrogen oxides, amines, ammonia, hydrocarbons) when heated to decomposition. May evolve sulphur oxides when heated to decomposition.

Product name **HARDENER HV 998**

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Health Hazard Summary No information provided.

No information provided.

No information provided.

No information provided.

No information provided.

BISPHENOL A (80-05-7)

LD50 (Ingestion): 2230 mg/kg (rabbit)

LD50 (Intraperitoneal): 150 mg/kg (mouse)

LD50 (Skin): 3 mL/kg (rabbit)

LDLo (Subcutaneous): 2500 mg/kg (mouse)

DIETHYLENETRIAMINE (111-40-0)

LD50 (Ingestion): 1080 mg/kg (rat)

LD50 (Intraperitoneal): 71 mg/kg (mouse)

LD50 (Skin): 0.17 mL/kg (guinea pig)

TDLo (Ingestion): 1820 mg/kg/26 weeks intermittently (rabbit)

N-DIMETHYL-DIPROPYLENE-TRIAMINE (10563-29-8)

LD50 (Ingestion): 1432 mg/kg (mammal).

TRIETHYLENETETRAMINE (TETA) (112-24-3)

LD50 (Ingestion): 1600 mg/kg (mouse)

LD50 (Intraperitoneal): 468 mg/kg (mouse)

LD50 (Intravenous): 350 mg/kg (mouse)

LD50 (Skin): 805 mg/kg (rabbit)

12. ECOLOGICAL INFORMATION

12.1 Toxicity

No information provided.

12.2 Persistence and degradability

No information provided.

12.3 Bioaccumulative potential

No information provided.

12.4 Mobility in soil

No information provided.

12.5 Results of PBT and vPvB assessment

No information provided.

12.6 Other adverse effects

No information provided.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Waste disposal Mix components together (small amounts), absorb with sand, vermiculite or similar and dispose of to an approved landfill site. Ensure protective equipment is worn when mixing. Do not seal containers/tins until reaction is complete. Contact the manufacturer/supplier for additional information (if required). Prevent contamination of drains and waterways as environmental damage may result.

Legislation Dispose of in accordance with relevant local legislation.

Product name **HARDENER HV 998**

14. TRANSPORT INFORMATION

NOT CLASSIFIED AS A DANGEROUS GOOD BY THE CRITERIA OF THE ADG CODE, IMDG OR IATA

	Land Transport (ADG)	Sea Transport (IMDG/IMO)	Air Transport (IATA/ICAO)
14.1 UN number	None Allocated	None Allocated	None Allocated
14.2 UN proper shipping name	None Allocated	None Allocated	None Allocated
14.3 Transport hazard classes			
DG Class	None Allocated	None Allocated	None Allocated
Subsidiary risk(s)	None Allocated	None Allocated	None Allocated
14.4 Packing group	None Allocated	None Allocated	None Allocated
14.5 Environmental hazards		None Allocated	
14.6 Special precautions for user			
Hazchem Code	None Allocated		

15. REGULATORY INFORMATION

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

Poison schedule	Classified as a Schedule 5 Poison using the criteria in the Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP).	
Classifications	T - Toxic Xi - Irritant	
Risk phrases	R23:	Toxic by inhalation.
	R38:	Irritating to skin.
	R41:	Risk of serious damage to eyes.
	R43:	May cause sensitisation by skin contact.
Safety phrases	S24:	Avoid contact with skin.
	S26:	In case of contact with eyes, rinse immediately with plenty of water and seek medical advice
	S36/37/39:	Wear suitable protective clothing, gloves and eye/face protection.
	S45:	In case of accident or if you feel unwell seek medical advice immediately (show the label where possible).
	S61:	Avoid release to the environment. Refer to special instructions/safety data sheets.
Inventory listing(s)	AUSTRALIA: AICS (Australian Inventory of Chemical Substances) All components are listed on AICS, or are exempt.	

15.2 Chemical safety assessment

No information provided.

16. OTHER INFORMATION

Additional information This is a 2 part product. Please consult the appropriate SDS before use.

HEALTH EFFECTS FROM EXPOSURE:

It should be noted that the effects from exposure to this product will depend on several factors including: frequency and duration of use; quantity used; effectiveness of control measures; protective equipment used and method of application. Given that it is impractical to prepare a ChemAlert report which would encompass all possible scenarios, it is anticipated that users will assess the risks and apply control methods where appropriate.

Product name **HARDENER HV 998**

PERSONAL PROTECTIVE EQUIPMENT GUIDELINES:
 The recommendation for protective equipment contained within this report is provided as a guide only. Factors such as method of application, working environment, quantity used, product concentration and the availability of engineering controls should be considered before final selection of personal protective equipment is made.

Abbreviations	ACGIH	American Conference of Governmental Industrial Hygienists
	CAS #	Chemical Abstract Service number - used to uniquely identify chemical compounds
	CNS	Central Nervous System
	EC No.	EC No - European Community Number
	EMS	Emergency Schedules (Emergency Procedures for Ships Carrying Dangerous Goods)
	GHS	Globally Harmonized System
	GTEPG	Group Text Emergency Procedure Guide
	IARC	International Agency for Research on Cancer
	LC50	Lethal Concentration, 50% / Median Lethal Concentration
	LD50	Lethal Dose, 50% / Median Lethal Dose
	mg/m ³	Milligrams per Cubic Metre
	OEL	Occupational Exposure Limit
	pH	relates to hydrogen ion concentration using a scale of 0 (high acidic) to 14 (highly alkaline).
	ppm	Parts Per Million
	STEL	Short-Term Exposure Limit
	STOT-RE	Specific target organ toxicity (repeated exposure)
	STOT-SE	Specific target organ toxicity (single exposure)
	SUSMP	Standard for the Uniform Scheduling of Medicines and Poisons
	SWA	Safe Work Australia
	TLV	Threshold Limit Value
	TWA	Time Weighted Average

Report Status This ChemAlert report has been independently compiled by RMT's scientific department utilising the original Safety Data Sheet ('SDS') for the product provided to RMT by the manufacturer. The information is based on the latest chemical and toxicological research and is believed to represent the current state of knowledge as to the appropriate safety and handling precautions for the product at the time of issue. It is an independent collation by RMT of information obtained from the original SDS for this product. Its content has not been authorised or verified by the manufacturer / distributor of the chemical to which it relates.

This ChemAlert report does not constitute the manufacturer's original SDS and is not intended to be a replacement for same. It is provided to subscribers of ChemAlert as a reference tool only, is not all-inclusive and does not represent any guarantee as to the properties of the product. Further clarification regarding any aspect of the product should be obtained directly from the manufacturer.

While RMT has taken all due care to include accurate and up-to-date information in this ChemAlert report, it does not provide any warranty as to accuracy or completeness. As far as lawfully possible, RMT accepts no liability for any loss, injury or damage (including consequential loss) which may be suffered or incurred by any person as a consequence of their reliance on the information contained in this ChemAlert report.

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Product name **HARDENER HV 998**

Last Reviewed: 29 Feb 2016

Date Printed: 08 Nov 2016

Based on SDS dated: 19 Sep 2013

End of Report