



# SAFETY DATA SHEET

## MAKCOTE HS HARDENER

Makrete Pty Ltd

Version No: 1.0

Issue Date:

May 2023

GHS7

## SECTION 1 MATERIAL AND SUPPLY COMPANY IDENTIFICATION

### Product Identifier

Product Name	MAKCOTE HS Hardener
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### Relevant identified uses of the substance or mixture and uses advised against

Relevant Identified uses	Hardener component of epoxy floor coating system
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### Details of the supplier of the safety data sheet

Registered Company Name	Makrete Pty Ltd
Address	PO Box 50, Montmorency, VIC 3094
Telephone	1300 911 161
Website	<a href="http://www.makrete.com.au">www.makrete.com.au</a>
Email	<a href="mailto:admin@makrete.com.au">admin@makrete.com.au</a>

### Emergency telephone number

Emergency Telephone Numbers	1300 911 161
Other emergency telephone numbers	

## SECTION 2 HAZARDS IDENTIFICATION

### Classification of the substance or mixture

**HAZARDOUS CHEMICAL. NON-DANGEROUS GOODS.** According to the WHS Regulations and the ADG Code

Poisons Schedule	S5
Classification	Flammable Liquid Category 4, Metal Corrosion Category 1, Acute Toxicity (Oral) Category 4, Acute Toxicity (Dermal) Category 4, Acute Toxicity (Inhalation) Category 4, Skin Corrosion/Irritation Category 1B, Serious Eye Damage Category 1, Skin Sensitizer Category 1, Acute Aquatic Hazard Category 3, Chronic Aquatic Hazard Category 3

### Label elements

Hazard pictogram(s)	
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SIGNAL WORD	<b>DANGER</b>
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**Hazard statement(s)**

H227	Combustible liquid.
H290	May be corrosive to metals
H302	Harmful if swallowed
H312	Harmful in contact with skin.
H332	Harmful if inhaled
H314	Causes severe skin burns and eye damage.
H317	May cause an allergic skin reaction.
H412	Harmful to aquatic life with long lasting effects.

**Precautionary statement(s) Prevention**

P210	Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
P260	Do not breathe dust/fume/gas/mist/vapours/spray.
P271	Use only outdoors or in a well-ventilated area.
P280	Wear protective gloves/protective clothing/eye protection/face protection.

**Precautionary statement(s) Response**

P301+P330+P331	IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P303+P361+P353	IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
P305+P351+P338	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.

**Precautionary statement(s) Storage**

P403+P235	Store in a well-ventilated place. Keep cool.
P405	Store locked up.

**Precautionary statement(s) Disposal**

P501	Dispose of contents/container in accordance with local regulations.
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## SECTION 3 COMPOSITION / INFORMATION ON INGREDIENTS

**Substances**

See section below for composition of Mixtures

**Chemical Entity**

CAS No	%[weight]	Name
100-51-6	20-40	<u>benzyl alcohol</u>
2855-13-2	20-40	isophorone diamine
25068-38-6	10-20	<u>bisphenol A/ diglycidyl ether resin, liquid</u>
28064-14-4	1-10	<u>bisphenol F glycidyl ether/ formaldehyde copolymer</u>
68609-97-2	1-10	<u>(C12-14)alkylglycidyl ether</u>
90-72-2	1-10	<u>2,4,6-tris[(dimethylamino)methyl]phenol</u>
Not Available	1-10	Ingredients determined not to be hazardous

## SECTION 4 FIRST AID MEASURES

### Description of First Aid Measures

<b>Eye Contact</b>	<p>If this product comes in contact with the eyes: Immediately hold eyelids apart and flush the eye continuously with running water. Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids. Continue flushing until advised to stop by the Poisons Information Centre or a doctor, or for at least 15 minutes. Transport to hospital or doctor without delay. Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.</p>
<b>Skin Contact</b>	<p>If skin or hair contact occurs: Immediately flush body and clothes with large amounts of water, using safety shower if available. Quickly remove all contaminated clothing, including footwear. Wash skin and hair with running water. Continue flushing with water until advised to stop by the Poisons Information Centre. Transport to hospital or doctor.</p>
<b>Inhalation</b>	<p>If fumes or combustion products are inhaled remove from contaminated area. Lay patient down. Keep warm and rested. Prostheses such as false teeth, which may block airway, should be removed, where possible, prior to initiating first aid procedures. Apply artificial respiration if not breathing, preferably with a demand valve resuscitator, bag-valve mask device, or pocket mask as trained. Perform CPR if necessary. Transport to hospital, or doctor, without delay.</p>
<b>Ingestion</b>	<p>Avoid giving milk or oils. Avoid giving alcohol. For advice, contact a Poisons Information Centre or a doctor at once. Urgent hospital treatment is likely to be needed. If swallowed do NOT induce vomiting. If vomiting occurs, lean patient forward or place on left side (head-down position, if possible) to maintain open airway and prevent aspiration. Observe the patient carefully. Never give liquid to a person showing signs of being sleepy or with reduced awareness; i.e. becoming unconscious. Give water to rinse out mouth, then provide liquid slowly and as much as casualty can comfortably drink. Transport to hospital or doctor without delay. If spontaneous vomiting appears imminent or occurs, hold patient's head down, lower than their hips to help avoid possible aspiration of vomitus.</p>

Indication of any immediate medical attention and special treatment needed – Treat symptomatically.

## SECTION 5 FIREFIGHTING MEASURES

### Extinguishing media

Foam

Dry chemical powder

BCF (where regulations permit)

Carbon dioxide

### Special hazards arising from the substrate or mixture.

<b>Fire Incompatibility</b>	Avoid contamination with oxidising agents i.e. nitrates, oxidising acids, chlorine bleaches, pool chlorine etc. as ignition may result
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### Advice for firefighters

<b>Fire Fighting</b>	<p>Alert Fire Brigade and tell them location and nature of hazard. Wear full body protective clothing with breathing apparatus. Prevent by any means available, spillage from entering drains or water course.</p>
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	Use firefighting procedures suitable for surrounding areas.
<b>Fire Explosion Hazard</b>	<p>Combustible.</p> <p>Slight fire hazard when exposed to heat or flame.</p> <p>Heating may cause expansion or decomposition leading to violent rupture of containers.</p> <p>On combustion products may include:</p> <p>Carbon Dioxide (CO<sub>2</sub>)</p> <p>Aldehydes</p> <p>Nitrogen (NO<sub>x</sub>)</p> <p>Other pyrolysis products typical of burning organic material.</p> <p>Contains low boiling substance: Closed containers may rupture due to pressure buildup under fire conditions. May emit corrosive fumes.</p> <p>WARNING: Long standing in contact with air and light may result in the formation of potentially explosive peroxides.</p>
<b>HAZCHEM</b>	2X

## SECTION 6 ACCIDENTAL RELEASE MEASURES

### Personal precautions, protective equipment and emergency procedures

See section 8

### Environmental precautions

See section 12

<b>Minor Spills</b>	<p>Drains for storage or use areas should have retention basins for pH adjustments and dilution of spills before discharge or disposal of material.</p> <p>Check regularly for spills and leaks.</p> <p>Slippery when spilt.</p> <p>Clean up all spills immediately.</p> <p>Avoid breathing vapours and contact with skin and eyes.</p> <p>Control personal contact with the substance, by using protective equipment. Contain and absorb spill with sand, earth, inert material or vermiculite.</p>
<b>Major Spills</b>	<p>Slippery when spilt.</p> <p>Clear area of personnel and move upwind.</p> <p>Alert Fire Brigade and tell them location and nature of hazard. Wear full body protective clothing with breathing apparatus.</p> <p>Prevent, by any means available, spillage from entering drains or water course.</p>

Personal Protective Equipment advice is contained in Section 8 of the SDS.

## SECTION 7 HANDLING AND STORAGE

### Precautions for safe handling

<b>Safe Handling</b>	<p>DO NOT USE brass or copper containers / stirrers.</p> <p>DO NOT allow clothing wet with material to stay in contact with skin.</p> <p>Electrostatic discharge may be generated during pumping - this may result in fire. Ensure electrical continuity by bonding and grounding (earthing) all equipment.</p> <p>Restrict line velocity during pumping to avoid generation of electrostatic discharge (<math>\leq 1</math> m/sec until fill pipe submerged to twice its diameter, then <math>\leq 7</math> m/sec).</p> <p>Avoid splash filling.</p> <p>Avoid all personal contact, including inhalation.</p> <p>Wear protective clothing when risk of exposure occurs. Use in a well-ventilated area.</p> <p>Avoid contact with moisture.</p>
<b>Other information</b>	<p>Store in original containers. Keep containers securely sealed.</p> <p>Store in a cool, dry, well-ventilated area.</p> <p>Store away from incompatible materials and foodstuff containers.</p> <p>DO NOT store near acids, or oxidising agents.</p> <p>No smoking, naked lights, heat or ignition sources.</p>

Conditions for safe storage, including any incompatibilities.

<b>Suitable Container</b>	DO NOT use aluminium or galvanised containers Lined metal can, lined metal pail/ can. Plastic pail. Polyliner drum. Packing as recommended by manufacturer. For low viscosity materials Drums and jerricans must be of the non-removable head type. Where a can is to be used as an inner package, the can must have a screwed enclosure. For materials with a viscosity of at least 2680 cSt. (23 deg. C) and solids (between 15 C deg. and 40 deg C.): Removable head packaging; Cans with friction closures and low-pressure tubes and cartridges may be used.
<b>Storage Incompatibility</b>	

## SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION


### Control Parameters

### OCCUPATIONAL EXPOSURE LIMITS (OEL)

### EMERGENCY LIMITS

Ingredient	Material name	TEEL-1	TEEL-2	TEEL-3
benzyl alcohol	Benzyl alcohol	30 ppm	52 ppm	740 ppm
bisphenol A/ diglycidyl ether resin, liquid	Epoxy resin includes EPON 1001, 1007, 820, ERL-2795	90 mg/m3	990 mg/m3	5,900 mg/m3
bisphenol F glycidyl ether/ formaldehyde copolymer	Phenol, polymer with formaldehyde, oxiranylmethyl ether	30 mg/m3	330 mg/m3	2,000 mg/m3
2,4,6-tris[(dimethylamino)methyl]phenol	Tris(dimethylaminomethyl)phenol, 2,4,6-	3.6 mg/m3	40 mg/m3	240 mg/m3

### Exposure Controls

<b>Appropriate Engineering Controls</b>	Engineering controls are used to remove a hazard or place a barrier between the worker and the hazard. Well-designed engineering controls can be highly effective in protecting workers and will typically be independent of worker interactions to provide this high level of protection. The basic types of engineering controls are: Process controls which involve changing the way a job activity or process is done to reduce the risk. Enclosure and/or isolation of emission source which keeps a selected hazard "physically" away from the worker and ventilation that strategically "adds" and "removes" air in the work environment.
<b>Personal Protection</b>	
<b>Eye and Face Protection</b>	Chemical goggles. Full face shield may be required for supplementary but never for primary protection of eyes. Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of lenses or restrictions on use, should be created for each workplace or task.
<b>Skin Protection</b>	See Hand protection below.
<b>Hands/Feet protection</b>	When handling corrosive liquids, wear trousers or overalls outside of boots, to avoid spills entering boots.  The material may produce skin sensitisation in predisposed individuals. Care must be taken, when removing gloves and other protective equipment, to avoid all possible skin contact.  Contaminated leather items, such as shoes, belts and watchbands should be removed and destroyed.

	<p>The selection of suitable gloves does not only depend on the material, but also on further marks of quality which vary from manufacturer to manufacturer. Where the chemical is a preparation of several substances, the resistance of the glove material cannot be calculated in advance and has therefore to be checked prior to the application.</p> <p>The exact break through time for substances must be obtained from the manufacturer of the protective gloves and must be observed when making a final choice.</p> <p>Personal hygiene is a key element of effective hand care.</p> <p>Leather wear not recommended: Contaminated leather footwear, watch bands, should be destroyed, i.e. burnt, as they cannot be adequately decontaminated</p> <p>When handling liquid-grade epoxy resins wear chemically protective gloves (e.g. nitrile or nitrile-butadiene rubber), boots and aprons.</p> <p>DO NOT use cotton or leather (which absorb and concentrate the resin), polyvinyl chloride, rubber or polyethylene gloves (which absorb the resin).</p> <p>DO NOT use barrier creams containing emulsified fats and oils as these may absorb the resin; silicone-based barrier creams should be reviewed prior to use.</p>
<b>Body protection</b>	See Other protection below.
<b>Other protection</b>	<p>Overalls</p> <p>PVS Apron</p> <p>PVC protective suit may be required if exposure is severe.</p> <p>Eyewash unit</p>
<b>Thermal hazards</b>	Not Available

## SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

### Information on basic physical and chemical properties

<b>Appearance</b>	Amber thin alkaline liquid with strong amine odour; does not mix with water.		
<b>Physical state</b>	Liquid	<b>Relative density (Water = 1)</b>	1.0 -1.1
<b>Odour</b>	Not Available	<b>Partition coefficient n-octanol / water</b>	Not Available
<b>Odour Threshold</b>	Not Available	<b>Auto-ignition temperature (°C)</b>	Not Available
<b>pH (as supplied)</b>	Not Available	<b>Decomposition temperature</b>	Not Available
<b>Melting point / freezing point (°C)</b>	Not Available	<b>Viscosity (cSt)</b>	Not Available
<b>Initial boiling point and boiling range (°C)</b>	Not Available	<b>Molecular Weight (g/mol)</b>	Not Applicable
<b>Flash point (°C)</b>	>62	<b>Taste</b>	Not Available
<b>Evaporation rate</b>	Not Available	<b>Explosive properties</b>	Not Available
<b>Flammability</b>	Combustible	<b>Oxidising properties</b>	Not Available
<b>Upper Explosive Limit (%)</b>	Not Available	<b>Surface Tension (dyn/cm or mN/m)</b>	Not Available
<b>Lower Explosive Limit (%)</b>	Not Available	<b>Volatile Component (%vol)</b>	Not Available
<b>Solubility in water (g/L)</b>	Immiscible	<b>pH as a solution (1%)</b>	Not Available
<b>Vapour density (Air = 1)</b>	Not Available	<b>VOC g/L</b>	Not Available

## SECTION 10 STABILITY AND REACTIVITY

<b>Reactivity</b>	See Section 7
<b>Chemical stability</b>	Unstable in the presence of incompatible materials. Product is considered stable. Hazardous polymerisation will not occur.
<b>Possibility of hazardous reactions</b>	See Section 7
<b>Conditions to avoid</b>	See Section 7
<b>Incompatible materials</b>	See Section 7
<b>Hazardous decomposition products</b>	See Section 5

## SECTION 11 TOXICOLOGICAL INFORMATION

### Information on toxicological effects

<b>Inhaled</b>	Central nervous system (CNS) depression may include general discomfort, symptoms of giddiness, headache, dizziness, nausea, anaesthetic effects, slowed reaction time, slurred speech and may progress to unconsciousness. Serious poisonings may result in respiratory depression and may be fatal. Inhalation of high concentrations of gas/vapour causes lung irritation with coughing and nausea, central nervous depression with headache and dizziness, slowing of reflexes, fatigue and inco-ordination. Inhalation of aerosols (mists, fumes), generated by the material during the course of normal handling, may be harmful.
<b>Ingestion</b>	Accidental ingestion of the material may be harmful; animal experiments indicate that ingestion of less than 150 gram may be fatal or may produce serious damage to the health of the individual. The material can produce chemical burns within the oral cavity and gastrointestinal tract following ingestion.
<b>Skin Contact</b>	Skin contact with the material may be harmful; systemic effects may result following absorption. The material can produce chemical burns following direct contact with the skin. Open cuts, abraded or irritated skin should not be exposed to this material Entry into the blood-stream, through, for example, cuts, abrasions or lesions, may produce systemic injury with harmful effects. Examine the skin prior to the use of the material and ensure that any external damage is suitably protected.
<b>Eye</b>	The material can produce chemical burns to the eye following direct contact. Vapours or mists may be extremely irritating. If applied to the eyes, this material causes severe eye damage.
<b>Chronic</b>	Repeated or prolonged exposure to corrosives may result in the erosion of teeth, inflammatory and ulcerative changes in the mouth and necrosis (rarely) of the jaw. Bronchial irritation, with cough, and frequent attacks of bronchial pneumonia may ensue. Skin contact with the material is more likely to cause a sensitisation reaction in some persons compared to the general population. Glycidyl ethers can cause genetic damage and cancer. Sensitisation may give severe responses to very low levels of exposure, i.e. hypersensitivity.

## SECTION 12 ECOLOGICAL INFORMATION

Avoid contaminating waterways.

Acute aquatic hazard: This material has been classified as non-hazardous. Acute toxicity estimate (based on ingredients):>100mg/L

Long-term aquatic hazard: This material has been classified as non-hazardous. Non-rapidly or rapidly degradable substance for which there are adequate chronic toxicity data available OR in the absence of chronic toxicity data. Acute toxicity estimate (based on ingredients):>100 mg/L, where the substance is not rapidly degradable and/or BCF < 500 and/or log Kow<4.

Ecotoxicity: No information available

Persistence and degradability: No

information available Bio accumulative

potential: No information available  
 Mobility: No information available

## SECTION 13 DISPOSAL CONSIDERATIONS

### Waste treatment methods

<b>Product /Packaging disposal</b>	<p>Containers may still present a chemical hazard/danger when empty.          Return to supplier for reuse/recycling if possible. Otherwise, if container cannot be cleaned sufficiently well to ensure that residuals do not remain or if the container cannot be used to store the same product, then puncture containers, to prevent re-use, and bury at an authorised landfill.          Where possible retain label warnings and SDS and observe all notices pertaining to the product.          Do not allow wash water from cleaning or process equipment to enter drains.          It may be necessary to collect all wash water for treatment before disposal.          In all cases disposal to sewer may be subject to local laws and regulations and these should be considered first.          Where in doubt contact the responsible authority.          Recycle wherever possible. Consult manufacturer for recycling options or consult local or regional waste management authority for disposal if no suitable treatment or disposal facility can be identified. Treat and neutralise at an approved treatment plant. Treatment should involve: Neutralisation with suitable dilute acid followed by burial in a land fill specifically licensed to accept chemical and/or pharmaceutical wastes or incineration in a licensed apparatus (after admixture with suitable combustible material).</p>
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## SECTION 14 TRANSPORT INFORMATION

### Labels Required

<b>Marine Pollutant</b>	No
<b>HAZCHEM</b>	2X

Land transport (ADG): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS  
 Air transport (ICAO-IATA / DGR): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS  
 Sea transport (IMDG-Code / GGVSee): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS  
 Transport in bulk according to Annex II of MARPOL and the IBC code  
 Not Applicable

## SECTION 15 REGULATORY INFORMATION

Safety, Health and Environmental Regulations / Legislation specific for the substance or mixture  
 Australia Exposure Standards  
 Australia Inventory of Chemical Substances (AICS)  
 Australia Hazardous Substances Information System – Consolidated Lists  
 Australia Inventory of Chemical Substances (AICS)  
 International Agency for Research on Cancer (IARC) – Agents classified by the IARC Monographs  
 International Air Transport Association (IATA) Dangerous Goods Regulations – Prohibited List Passenger and Cargo Aircraft  
 PORTLAND CEMENT (65997-15-1) IS FOUND ON THE FOLLOWING REGULATORY LISTS

National Inventory	Status
Australia - AICS	Y
Canada - DSL	Y
Canada - NDSL	N (benzyl alcohol; (C12-14)alkylglycidyl ether; xylene; bisphenol A/ diglycidyl ether resin, liquid; 2,4,6-tris[(dimethylamino)methyl]phenol; isophorone diamine; bisphenol F glycidyl ether/ formaldehyde copolymer)
China - IECSC	Y
Europe - EINEC / ELINCS / NLP	N (bisphenol F glycidyl ether/ formaldehyde copolymer)
Japan - ENCS	N ((C12-14)alkylglycidyl ether; bisphenol A/ diglycidyl ether resin, liquid)



Korea - KECI	Y
New Zealand - NZIoC	Y
Philippines - PIGGS	N (Portland Cement)
USA - TSCA	Y
<b>Legend:</b>	Y = All ingredients are on the inventory N = Not determined or one or more ingredients are not on the inventory and are not exempt from listing(see specific ingredients in brackets)

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## SECTION 16 OTHER INFORMATION

This Safety Data Sheet (SDS) summarises at the date of issue our best knowledge of the health and safety hazard information of the product, and how to safely handle and use the product in the workplace. Since the company cannot anticipate or control the conditions under which the product may be used, each user must, prior to usage review the SDS in the context of how the user intends to handle and use the product in the workplace.

If clarification or further information is needed to ensure that an appropriate assessment can be made, the user should contact this company.

Our responsibility for product as sold is subject to our standard terms and conditions, a copy of which is sent to our customers and is also available upon request.