SAFETY DATA SHEET

1. IDENTIFICATION: PRODUCT IDENTIFIER AND CHEMICAL IDENTITY

Product Name: **HUMEBOND HARDENER**
Product Description: Hardener for epoxy resins
Intended/Recommended Use: Epoxy curative
Uses advised against: Not available

Bondlast Construction Products.
24-28 Lady Ruby Drive, East Tamaki, Auckland 2013, New Zealand

For Product and all Non-Emergency Information call +64 (09) 267 2772 (business hours only) or contact us at https://www.dglbondlast.co.nz/contact/

EMERGENCY TELEPHONE NUMBER
Poisons Information Centre, New Zealand: 0800 764 766

2. HAZARDS IDENTIFICATION

Regulatory information
Classified as Hazardous according to the Hazardous Substances (Minimum Degrees of Hazard) Notice 2020

EPA New Zealand HSNO approval code or group standard: HSR002503

Group Standard: Additives, Process Chemicals and Raw Materials (Subsidiary Hazard) Group Standard 2020

GHS Classification
Reproductive Toxicity Category 1
Skin Irritation Category 2
Serious Eye Damage / Eye Irritation Category 1
Respiratory Sensitizer Category 1
Skin Sensitizer Category 1A
Hazardous to the Aquatic Environment Chronic Category 2

LABEL ELEMENTS

Signal Word
Danger

Hazard Statements

May damage fertility or the unborn child
Causes skin irritation
Causes serious eye damage
May cause allergy or asthma symptoms or breathing difficulties if inhaled
May cause an allergic skin reaction
Toxic to aquatic life with long lasting effects

Precautionary Statements

Prevention

Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wear protective gloves/protective clothing/eye protection/face protection. Wash face, hands and any exposed skin thoroughly after handling. Avoid breathing dust/fume/gas/mist/vapours/spray. Wear respiratory protection. Contaminated work clothing should not be allowed out of the workplace. Avoid release to the environment.

Response

IF ON SKIN: Wash with plenty of soap and water. Specific treatment (see supplemental first aid instructions on this label). Take off contaminated clothing and wash it before reuse. 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/physician. IF INHALED: Remove person to fresh air and keep comfortable for breathing. Collect spillage.

Storage

Store locked up.

Disposal

Dispose of contents/container in accordance with local and national regulations.

OTHER HAZARDS

Not applicable

3. COMPOSITION AND INFORMATION ON INGREDIENTS

Substance or Mixture?: Mixture

Component / CAS No.	**%**
Silica, quartz 14808-60-7	75-85
Fatty acids, C18-unsatd., dimers, polymers with tall-oil fatty acids and tetraethylenepentamine 103758-98-1	8-12
Limestone (calcium carbonate - not classified) 1317-65-3	3-5
Diethylenetriamine 111-40-0	<0.7
Bisphenol A 80-05-7	<0.4
Piperazine 110-85-0	<0.3
Aminoethylpiperazine 140-31-8	<0.2

4. FIRST-AID MEASURES

Emergency telephone number
Poisons Information Centre, New Zealand: 0800 764 766

First-aid Measures

Inhalation:
Remove to fresh air. Get medical attention immediately if symptoms occur.

Skin Contact:
Wash off immediately with soap and plenty of water for at least 15 minutes. Get medical attention if irritation develops and persists. Wash immediately with plenty of water and soap. May cause an allergic skin reaction. In the case of skin irritation or allergic reactions see a doctor.

Eye Contact:
Get immediate medical advice/attention. Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Keep eye wide open while rinsing. Do not rub affected area. Get medical attention if irritation develops and persists.

Ingestion:
Clean mouth with water and drink afterwards plenty of water. Never give anything by mouth to an unconscious person. Do NOT induce vomiting. Call a doctor.

Most Important Symptoms and Effects, Acute and Delayed
Burning sensation. Itching. Rashes. Hives.

Immediate Medical Attention and Special Treatment
Notes To Physician:
May cause sensitisation in susceptible persons. Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media:
Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable Extinguishing Media:
full water jet.

Protective Equipment:
Wear self-contained breathing apparatus and protective suit. Use personal protective equipment as required.

Special Hazards:
Product is or contains a sensitiser. May cause sensitization by skin contact.

HAZCHEM Code: •3Z

6. ACCIDENTAL RELEASE MEASURES

Personal precautions:
Avoid contact with skin, eyes or clothing. Use personal protective equipment as required. Ensure adequate ventilation. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak.

Methods For Containment:
Prevent further leakage or spillage if safe to do so.

Methods For Cleaning Up:
Take up mechanically, placing in appropriate containers for disposal.

Environmental Precautions:
Avoid release to the environment.

References to other sections:
See Sections 7, 8 and 13 for additional information.

7. HANDLING AND STORAGE

Handling

Precautions: Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wear protective gloves/protective clothing/eye protection/face protection. Wash face, hands and any exposed skin thoroughly after handling. Avoid breathing dust/fume/gas/mist/vapours/spray. Wear respiratory protection. Contaminated work clothing should not be allowed out of the workplace. Avoid release to the environment.

Special Handling Statements: Handle in accordance with good industrial hygiene and safety practices. Avoid contact with skin, eyes or clothing. Do not eat, drink or smoke when using this product. Ensure adequate ventilation. In case of insufficient ventilation, wear suitable respiratory equipment. Take off contaminated clothing and wash it before reuse.

Storage
Keep container tightly closed and dry in a cool, well-ventilated place. Store locked up. Keep out of reach of children.

Storage Temperature: Ambient temperature
Reason: Quality.

8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

CONTROL PARAMETERS - Limits

Silica, quartz 14808-60-7

New Zealand:	0.05 mg/m^3 respirable dust (TWA)
ACGIH (TLV):	0.025 mg/m^3 respirable particulate matter (TWA)

Limestone (calcium carbonate - not classified) 1317-65-3

New Zealand:	10 mg/m^3 (TWA)

Diethylenetriamine 111-40-0

New Zealand:	1 ppm (TWA) 4.2 mg/m^3 (TWA) (skin)
ACGIH (TLV):	(skin) 1 ppm (TWA)

Piperazine 110-85-0

ACGIH (TLV):	0.03 ppm inhalable fraction and vapor (TWA)

Biological Exposure Limit(s)

No values have been established.

Engineering Measures:
Ensure adequate ventilation, especially in confined areas.

Respiratory Protection:
Where exposures exceed the established exposure limit, use respiratory protection recommended for the material and level of exposure. Where exposures are below the established exposure limit, no respiratory protection is required. Where respiratory protection is required, use a respirator selected and in accordance with AS/NZS 1715 and AS/NZS 1716.

Eye protection:
Tight sealing safety goggles.

Skin Protection:
Wear suitable protective clothing.

Hand protection:
Wear protective gloves. Barrier creams may help to protect the exposed areas of the skin, they should however not be applied once exposure has occurred. Replace gloves immediately when torn or any change in appearance (dimension, colour, flexibility etc) is noticed.

Additional Advice:
Avoid contact with skin, eyes or clothing. Wear suitable gloves and eye/face protection. Do not eat, drink or smoke when using this product.

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9. PHYSICAL AND CHEMICAL PROPERTIES

a. INFORMATION ON BASIC PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	thick paste
Colour:	grey
Odor:	amine sweet
Odor Threshold:	See Section 8 for exposure limits.
Melting Point:	Not available
Boiling Point:	Not available
Flammability:	Not available
Flammable Limits (% By Vol):	Not available
Flash point:	> 150 °C
Autoignition temperature:	Not available
Decomposition Temperature:	Not available
pH:	Not available
Viscosity (Kinematic):	Not applicable
Viscosity (Dynamic):	No information available
Solubility In Water:	Partly soluble
Solubility In Solvent:	Not available
Partition coefficient (n-octanol/water):	Not available
Vapor Pressure:	Not available
Specific Gravity/Density:	1.85 g/cm³
Vapour density:	Not available
Particle characteristics:	Not applicable

b. OTHER INFORMATION

i. Information with regard to physical hazard classes
Not applicable

ii. Other safety characteristics
Not applicable

10. STABILITY AND REACTIVITY

Reactivity:	No information available
Stability:	Stable
Conditions To Avoid:	Protect from heat and direct sunlight.
Polymerization:	Will not occur
Conditions To Avoid:	None known.
Materials To Avoid:	Strong oxidizing agents. Strong acids Strong bases
Hazardous Decomposition Products:	Carbon monoxide and carbon dioxide

11. TOXICOLOGICAL INFORMATION

Likely Routes of Exposure: Respiratory System, Skin, Eyes, Oral.

HEALTH HAZARD INFORMATION

Acute toxicity - oral: Not Classified - Based on available data and/or professional judgment, the classification criteria are not met.
Acute toxicity - dermal: Not Classified - Based on available data and/or professional judgment, the classification criteria are not met.
Acute toxicity - inhalation: Not Classified **-** Based on available data and/or professional judgment, the classification criteria are not met.

Skin corrosion / irritation: Causes skin irritation
Serious eye damage / eye irritation: Causes serious eye damage

Respiratory sensitization: May cause allergy or asthma symptoms or breathing difficulties if inhaled
Skin sensitization: May cause an allergic skin reaction

Carcinogenicity: Not Classified **-** Based on available data and/or professional judgment, the classification criteria are not met.
Germ cell mutagenicity: Not Classified **-** Based on available data and/or professional judgment, the classification criteria are not met.
Reproductive toxicity: May damage fertility or the unborn child

Specific target organ toxicity (single exposure): Not Classified. **-** Based on available data and/or professional judgment, the classification criteria are not met.
Specific target organ toxicity (repeated exposure): Not Classified. **-** Based on available data and/or professional judgment, the classification criteria are not met.

Aspiration hazard: Not Classified - Based on available data and/or professional judgment, the classification criteria are not met.

PRODUCT TOXICITY INFORMATION

ACUTE TOXICITY DATA

oral	rat	Acute LD50		> 2000	mg/kg
dermal	rabbit	Acute LD50		> 2000	mg/kg
inhalation	rat	Acute LC50	4 hr	> 5	mg/l (Dust/Mist)

LOCAL EFFECTS ON SKIN AND EYE

Acute Irritation	Skin	Irritating to skin.
Acute Irritation	eye	Causes burns. Risk of serious damage to eyes.

ALLERGIC SENSITIZATION

Sensitization	Skin	Severe Sensitizing
Sensitization	respiratory	Sensitizing

GENOTOXICITY

Assays for Gene Mutations

Ames Salmonella Assay	No data

OTHER INFORMATION

The product toxicity information above has been estimated.

HAZARDOUS INGREDIENT TOXICITY DATA

Quartz silica (respirable fraction) can cause reduced pulmonary function when inhaled. Exposure to respirable quartz silica can cause delayed (chronic) fibrosis and other lung injury. Chronic inhalation exposure showed that quartz silica can cause lung cancer in rats but not in mice. There is also limited human evidence which shows an association of lung cancer with occupational exposure to quartz silica. This material is reported to have shown positive results in in vitro mutagenicity tests with human cell cultures. Studies have shown that tobacco smoking and high quartz silica exposure exhibit a synergistic effect for lung cancer. Silica, crystalline is a chemical known to the State of California to cause cancer.

Diethylenetriamine has acute oral (rat) LD50 values of 1620 mg/kg. Diethylenetriamine has acute dermal (rabbit) LD50 values of 1090 mg//kg. The LC50 value (rat, aerosol, 4 hr) is 0.07 - 0.3 mg/l. No mortality was seen in rats exposed to 300 ppm for 8-hours. This substance may cause respiratory tract irritation. Repeated inhalation exposures can cause asthmatic type responses. Direct contact with Diethylenetriamine may cause severe irritation and/or irreversible damage (burns) to the eyes and skin. Repeated or prolonged dermal contact may cause allergic skin reactions. In the majority of studies performed with microorganisms and in mammalian cell culture, a mutagenic effect was not found. A mutagenic effect was also not observed in in vivo tests. The substance showed no carcinogenic activity in animals after chronic administration to the skin. Under certain conditions the substance can form nitrosamines. Nitrosamines are carcinogenic in animal studies.

Bisphenol A has acute oral (rat) and dermal (rabbit) LD50 values of > 2000 mg/kg and ~3000 mg/kg, respectively. The acute 6-hr inhalation LC50 is reported to be >170 mg/m^3. Direct contact with bisphenol A caused mild skin and severe eye irritation when tested in rabbits. Prolonged or repeated contact with bisphenol A may cause allergic skin reaction. Dust may be irritating to the respiratory tract. Bisphenol A has not lead to genotoxic effects in in vitro and in vivo studies. Carcinogenicity studies with rats and mice have shown that bisphenol A does not cause cancer. Laboratory studies have shown that bisphenol A possesses some estrogenic/antiestrogenic hormone activity. Mice fed bisphenol A experienced adverse effects on male reproductive success during a continuous breeding study. However, no evidence of reproductive toxicity was observed in adult male or female mice or rats in multigeneration reproduction studies when administered bisphenol A in feed. Developmental effects were observed in offspring at high doses only. Based on developmental toxicity studies, BPA is not teratogenic. There is evidence available in relation to alteration of reproductive function, mammary gland development, cognitive function and metabolism. Therefore BPA can be considered an endocrine disruptor for human health.

Piperazine has acute oral (rat) and dermal (rabbit) values of 1900 mg/kg and 4000 mg/kg respectively. The acute inhalation (rat) is 5.4 mg/L (2 hours). This material is harmful if inhaled, swallowed, or absorbed through the skin. It

is extremely distructive to the mucous membranes, tissues of the skin and eye (may cause burns) and the upper respiratory tract. May cause allergic respiratory and skin reactions (sensitization). Repeated exposure may cause asthma. In standard Draize assay (rabbit) this material was a severe eye irritant. This material was negative for mutagenicity in the Ames Salmonella assay.

Aminoethylpiperazine has acute oral (rat) and dermal (rabbit) LD50 values of 2097 mg/kg and 866 mg/kg, respectively. Aminoethylpiperazine is considered to be mildly toxic orally and moderately toxic dermally. Animal studies have shown aminoethylpiperazine to be severely irritating and corrosive to both eyes and skin. Inhalation may cause a burning sensation, coughing, wheezing, laryngitis, headache, nausea, and vomiting. Direct contact with this material may cause skin sensitization. In vitro testing has shown some genotoxic effects, both those were not confirmed in whole animal studies. Local signs of irritation, but no systemic effects were observed in a 28 days repeated dose toxicity study by oral or dermal route. However, after inhalation exposure-related histopathological effects were observed on larynx, trachea and lungs. In a prenatal toxicity study with rabbits, decreased embryofetal survival, delayed ossification and reduced fetal weight were associated with treatment. Carcinogenicity has not been investigated.

12. ECOLOGICAL INFORMATION

Aquatic Chronic Toxicity: Toxic to aquatic life with long lasting effects

The ecological assessment for this material is based on an evaluation of its components.

TOXICITY
Not available

BIOACCUMULATIVE POTENTIAL
Not available

PERSISTENCE AND DEGRADABILITY
Not available

MOBILITY IN SOIL
Not available

OTHER ADVERSE EFFECTS

HAZARD TO THE OZONE LAYER
Not available

HAZARDOUS INGREDIENT TOXICITY DATA

Component / CAS No.	Toxicity to Fish
Silica, quartz (14808-60-7)	Not available
Fatty acids, C18-unsatd., dimers,	Not available

polymers with tall-oil fatty acids and tetraethylenepentamine (103758-98-1)	
Limestone (calcium carbonate - not classified) (1317-65-3)	Not available
Diethylenetriamine (111-40-0)	LC50 = 248 mg/L - Poecilia reticulata (96h) LC50 = 1014 mg/L - Poecilia reticulata (96h)
Bisphenol A (80-05-7)	LC50 = 4.6 mg/L - Pimephales promelas (96h) LC50 = 9.4 mg/L - Menidia menidia (96h) LC50 = 6.8 mg/L - Orycias latipes (96h) LC50 = 7.5 mg/L - Cyprinodon variegatus (96h) NOEC < 0.000372 mg/L - Danio rerio (300d) NOEC = 0.000174 mg/L - Danio rerio (5m) NOEC = 0.1 mg/L - Cyrpinus carpio (49d)
Piperazine (110-85-0)	LC50 > 10000 mg/L - Lepomis macrochirus (96h)
Aminoethylpiperazine (140-31-8)	LC50 > 100 mg/L - Oncorhynchus mykiss (96h) LC50 = 2190 mg/L - Pimephales promelas (96h)

Component / CAS No.	Toxicity to Water Flea
Silica, quartz (14808-60-7)	Not available
Fatty acids, C18-unsatd., dimers, polymers with tall-oil fatty acids and tetraethylenepentamine (103758-98-1)	Not available
Limestone (calcium carbonate - not classified) (1317-65-3)	Not available
Diethylenetriamine (111-40-0)	EC50 = 16 mg/L - Daphnia magna (48h)
Bisphenol A (80-05-7)	EC50 = 7.75 - 16 mg/L - Daphnia magna (48h, multiple studies) EC50 = 0.885mg/L - Acartia clausi (48h) EC50 = 0.71 mg/L - Paracentrotus lividus (72h) NOEC = 0.001 mg/L - Tigriopus japonicus (21d) NOEC = 0.17 mg/L - Americamysis bahia (28d) NOEC = 0.000106 mg/L - Marisa cornuarietis (150d)
Piperazine (110-85-0)	Not available
Aminoethylpiperazine (140-31-8)	EC50 = 58 mg/L - Daphnia magna (48h)

Component / CAS No.	Toxicity to Algae
Silica, quartz (14808-60-7)	Not available
Fatty acids, C18-unsatd., dimers, polymers with tall-oil fatty acids and tetraethylenepentamine (103758-98-1)	Not available
Limestone (calcium carbonate - not classified) (1317-65-3)	Not available
Diethylenetriamine (111-40-0)	EC50 = 1164 mg/L - Pseudokirchneriella subcapitata (72h) EC50 = 345.6 mg/L - Pseudokirchneriella subcapitata (96h) EC50 = 592 mg/L - Desmodesmus subspicatus (96h)
Bisphenol A (80-05-7)	EC50 = 2.73-3.1 mg/L - Pseudokirchneriella subcapitata (96h) EC50 = 3.73 mg/L - Naviculaincerta (96h)EC10 = 1.36 mg/L - Pseudokirchneriella subcapitata (4d) EC10 = 0.4 mg/L - Skeletonema costatum (4d)
Piperazine (110-85-0)	Not available
Aminoethylpiperazine (140-31-8)	EC50 > 1000 mg/L - Pseudokirchneriella subcapitata (72h)

Component / CAS No.	Partition coefficient
Silica, quartz (14808-60-7)	Not available
Fatty acids, C18-unsatd., dimers, polymers with tall-oil fatty acids and tetraethylenepentamine (103758-98-1)	Not available
Limestone (calcium carbonate - not classified) (1317-65-3)	Not available
Diethylenetriamine (111-40-0)	-1.3
Bisphenol A (80-05-7)	3.4
Piperazine (110-85-0)	-1.24
Aminoethylpiperazine (140-31-8)	Log Kow = -1.48

13. DISPOSAL CONSIDERATIONS

Waste Treatment Methods
The company encourages the recycle and reuse of products and packaging, where possible and permitted.

Product disposal
When recycle or reuse is not possible, the company recommends that our products, especially when classified as hazardous, be disposed of by thermal treatment or incineration at approved facilities. All local and national regulations should be followed.

Packaging disposal
Handle contaminated packages in the same way as the product itself. Disposal of emptied and cleaned packaging must be made in accordance with applicable local and national regulations.

Disposal-relevant information
Do not release directly or indirectly to surface water, ground water, soil or public sewage system.

14. TRANSPORT INFORMATION

This section provides basic shipping classification information. Refer to appropriate transportation regulations for specific requirements.

Road transport

Dangerous Goods? X

PROPER SHIPPING NAME:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
Hazard Class:	9
UN Number:	UN3082
Packing Group:	III
Transport Label Required:	Miscellaneous
TECHNICAL NAME (N.O.S.):	BISPHENOL A
HAZCHEM Code:	•3Z
IERG:	47

IMO

Dangerous Goods? X

UN PROPER SHIPPING NAME:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
Transport Hazard Class:	9
UN Number:	UN3082
Packing Group:	III
Transport Label Required:	Miscellaneous Marine Pollutant

Marine Pollutant

TECHNICAL NAME (N.O.S.): BISPHENOL A

ICAO / IATA

Dangerous Goods? X

UN PROPER SHIPPING NAME:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
Transport Hazard Class:	9
Packing Group:	III
UN Number:	UN3082
Transport Label Required:	Miscellaneous
TECHNICAL NAME (N.O.S.):	BISPHENOL A

15. REGULATORY INFORMATION

Safety, health and environmental regulations specific for the product in question

Ozone Depleting Substances (Regulation (EC) No 1005/2009): Not applicable
Persistent Organic Pollutants (Regulation (EC) No 850/2004): Not applicable

EPA New Zealand HSNO approval code or group standard: HSR002503
Group Standard: Additives, Process Chemicals and Raw Materials (Subsidiary Hazard) Group Standard 2020

Health and Safety at Work Hazardous Substances Regulations 2017

Tracking:
This product does not require tracking

Certified Handler:
This product does not require a certified handler.

Controlled Substance: This product does not require a Controlled Substance Licence

16. OTHER INFORMATION

Reasons for Issue: Date update

Date Prepared: **30**-Jan-2024
Date of last significant revision: 30-Jan-2024

Key or legend to abbreviations and acronyms used in the safety data sheet

Legend Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

TWA	TWA (time-weighted average)	STEL	STEL (Short Term Exposure Limit)
Ceiling	Maximum limit value	*	Skin designation
C	Carcinogen		