

SAFETY DATA SHEET

Revision date: 27-Oct-2021



Revision Number 5

1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

Product identifier

Product Name CARBOTHIX B

Product Code(s) 000000052013

Other means of identification

Proper shipping name ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (CONTAINS DIISOPROPYLNAPHTHALENE)

UN number 3082

Synonyms Carbothix Slow Set 1:2 Component B, Carbothix Fast 1:1 Component B

Pure substance/mixture Mixture

Recommended use of the chemical and restrictions on use

Recommended use Part B of a two component silicate resin for bonding injection bolts.

Uses advised against No information available.

Supplier

Minova Australia Pty Ltd
ABN: 084 965 962
102 Albatross Road,
Nowra, NSW 2541
Australia

Telephone Number: 1300 MINOVA (1300 646 682)
Facsimile: 1300 FAXMINOVA (1300 329 646)
Website: www.minovaglobal.com

Emergency telephone number

Emergency telephone number **1800 033 111 (ALL HOURS)**

Please ensure you refer to the limitations of this Safety Data Sheet as set out in the "Other Information" section at the end of this Data Sheet.

2. HAZARDS IDENTIFICATION

GHS Classification

Classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG).

Environmentally Hazardous Substances meeting the descriptions of UN 3077 or UN 3082 are not subject to the provisions of the Australian Code for the Transport of Dangerous Goods by Road and Rail when transported by road or rail in: packagings that do not incorporate a receptacle exceeding 500 kg(L); or IBCs.

Classified as a hazardous chemical in accordance with the criteria of Safe Work Australia - Globally Harmonized System (GHS).

Acute toxicity - Inhalation (Vapors)	Category 4
Skin corrosion/irritation	Category 2
Serious eye damage/eye irritation	Category 2A
Respiratory sensitization	Category 1
Skin sensitization	Category 1
Carcinogenicity	Category 2
Specific target organ toxicity (single exposure)	Category 3
Specific target organ toxicity (repeated exposure)	Category 2
Chronic aquatic toxicity	Category 2

SIGNAL WORD

Danger

Label elements

Environment

Health hazard Exclamation mark

**Hazard statements**

H315 - Causes skin irritation

H317 - May cause an allergic skin reaction

H319 - Causes serious eye irritation

H332 - Harmful if inhaled

H334 - May cause allergy or asthma symptoms or breathing difficulties if inhaled

H335 - May cause respiratory irritation

H351 - Suspected of causing cancer

H373 - May cause damage to organs through prolonged or repeated exposure

The following health/environmental hazard categories fall outside the scope of the Workplace Health and Safety Regulations:

H411 - 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

Do not breathe fume, gas, mist, vapours, spray

Wash hands and face thoroughly after handling

Use only outdoors or in a well-ventilated area

Contaminated work clothing should not be allowed out of the workplace

Wear protective gloves / protective clothing / eye protection / face protection

Wear respiratory protection

Avoid release to the environment

Precautionary Statements - Response

Get medical advice/attention if you feel unwell

If exposed or concerned: Get medical advice/attention

Specific treatment (see First aid on this SDS)

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing

If eye irritation persists: Get medical advice/attention

IF ON SKIN: Wash with plenty of soap and water

If skin irritation or rash occurs: Get medical advice/attention

Take off contaminated clothing and wash it before reuse

IF INHALED: Remove person to fresh air and keep comfortable for breathing

If experiencing respiratory symptoms: Call a POISON CENTER or doctor

Call a POISON CENTER or doctor if you feel unwell

Collect spillage

Precautionary Statements - Storage

Store in a well-ventilated place. Keep container tightly closed

Store locked up

Precautionary Statements - Disposal

Dispose of contents/container in accordance with local, regional, national, and international regulations as applicable

Other hazards which do not result in classification

Poisons Schedule (SUSMP) 6

3. COMPOSITION/INFORMATION ON INGREDIENTS**Mixture**

Chemical name	CAS No.	Weight-%
Isocyanic acid, polymethylene polyphenylene ester	9016-87-9	30-60%
Diphenylmethane-4,4-diisocyanate	101-68-8	<40%
Diphenylmethanediisocyanate, mixture of 2,4 and 4,4 isomers	5873-54-1	<10%
Naphthalene, bis(1-methylethyl)-	38640-62-9	<10%
Ingredients determined not to be hazardous	-	to 100%

4. FIRST AID MEASURES**Description of first aid measures****General advice**

Take off contaminated clothing and shoes immediately. For advice, contact a Poisons Information Centre (e.g. phone Australia 13 11 26; New Zealand 0800 764 766) or a doctor. Show this safety data sheet to the doctor in attendance.

Inhalation

Remove to fresh air and keep at rest in a position comfortable for breathing. If breathing is difficult, (trained personnel should) give oxygen. If breathing has stopped, give artificial respiration. Get medical attention immediately. May cause allergic respiratory reaction.

Eye contact

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get immediate medical advice/attention.

Skin contact

Wash off immediately with soap and plenty of water for at least 15 minutes. Take off contaminated clothing and wash before reuse. In the case of skin irritation or allergic reactions see a physician.

Ingestion

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

Self-protection of the first aider

Use personal protective equipment as required. See section 8 for more information. Avoid contact with eyes. Avoid contact with skin. Do not breathe fume, gas, mist, vapours, spray.

Most important symptoms and effects, both acute and delayed**Symptoms**

Irritating. May cause allergic skin reaction. Erythema (skin redness). May cause redness and tearing of the eyes. May cause allergy or asthma symptoms or breathing difficulties if inhaled.

Indication of any immediate medical attention and special treatment needed**Note to physicians**

Treat symptomatically. May cause sensitization by inhalation and skin contact. Effects of contact or inhalation may be delayed. Keep victim under observation. Following severe

exposure, the patient should be kept under medical supervision for at least 48 hours.

5. FIRE FIGHTING MEASURES

Suitable Extinguishing Media

Suitable Extinguishing Media Carbon dioxide (CO₂). Dry chemical. Alcohol resistant foam.

Unsuitable extinguishing media

Specific hazards arising from the chemical

Specific hazards arising from the chemical Combustible material. Thermal decomposition can lead to release of irritating and toxic gases and vapors. Environmentally hazardous.

Hazardous combustion products Carbon oxides. Nitrogen oxides. Hydrogen cyanide.

Special protective actions for fire-fighters

Special protective equipment for fire-fighters Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. May cause sensitization by inhalation and skin contact. Move containers from fire area if you can do it without risk. Cool containers with flooding quantities of water until well after fire is out.

Hazchem code •3Z

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal precautions Evacuate personnel to safe areas. Remove all sources of ignition. Ensure adequate ventilation. Avoid contact with skin, eyes and inhalation of vapors. Wear self-contained breathing apparatus. Use personal protective equipment as required. See section 8 for more information. Do not touch or walk through spilled material.

Other information Ventilate the area. Refer to protective measures listed in Sections 7 and 8.

For emergency responders Use personal protection recommended in Section 8.

Environmental precautions

Environmental precautions Keep out of waterways. Local authorities should be advised if significant spillages cannot be contained. Prevent entry into waterways, sewers, basements or confined areas. Prevent product from entering drains. Should not be released into the environment.

Methods and material for containment and cleaning up

Methods for containment Absorb or cover with dry earth, sand or other non-combustible material and transfer to containers. Prevent further leakage or spillage if safe to do so.

Methods for cleaning up Work up wind or increase ventilation. Take up with sand or other non-combustible absorbent material and place into containers for later disposal. Collect in properly labelled drums or other suitable containers, with loose fitting lids.

7. HANDLING AND STORAGE

Precautions for safe handling

Advice on safe handling Use personal protection equipment. Avoid contact with skin and eyes. Do not get in eyes. Ensure adequate ventilation. Do not breathe fume, gas, mist, vapours, spray. Do not eat, drink or smoke when using this product. Handle in accordance with good industrial hygiene and safety practice.

General hygiene considerations Contaminated work clothing should not be allowed out of the workplace. Do not get in eyes, on skin, or on clothing. Wear suitable gloves and eye/face protection. Do not breathe fume, gas, mist, vapours, spray. Wash hands before breaks and immediately after handling the product.

Conditions for safe storage, including any incompatibilities

Storage Conditions Keep containers tightly closed in a dry, cool and well-ventilated place. Keep/store only in original container. Keep away from water or moist air. Store under cover in a dry place. Store away from foodstuffs. Keep away from heat.

This material is a Scheduled Poison and must be stored, maintained and used in accordance with the relevant regulations.

Incompatible materials Moisture. Water. Acids. Alkalis. Alcohols. Amines. Oxidizing agents. Metals.

Other information Classified as a C2 (COMBUSTIBLE LIQUID) for the purpose of storage and handling, in accordance with the requirements of AS 1940. Refer to State Regulations for storage and transport requirements.

Poisons Schedule (SUSMP) 6

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure Limits No value assigned for this specific material by Safe Work Australia. However, Workplace Exposure Standard(s) for constituent(s):

Chemical name	Australia	ACGIH TLV
Isocyanic acid, polymethylene polyphenylene ester 9016-87-9	0.02 mg/m ³ 0.07 mg/m ³ STEL	

Isocyanates, all (as -NCO): 8hr TWA = 0.02 mg/m³, 15 min STEL = 0.07 mg/m³, Sen

As published by Safe Work Australia Workplace Exposure Standards for Airborne Contaminants.

TWA - The time-weighted average airborne concentration of a particular substance when calculated over an eight-hour working day, for a five-day working week.

STEL (Short Term Exposure Limit) - the airborne concentration of a particular substance calculated as a time-weighted average over 15 minutes, which should not be exceeded at any time during a normal eight hour work day. According to current knowledge this concentration should neither impair the health of, nor cause undue discomfort to, nearly all workers.

'Sen' Notice - sensitiser. The substance can cause a specific immune response in some people. An affected individual may subsequently react to exposure to minute levels of that substance and should not be further exposed to the substance.

These Workplace Exposure Standards are guides to be used in the control of occupational health hazards. All atmospheric contamination should be kept to as low a level as is workable. These workplace exposure standards should not be used as fine dividing lines between safe and dangerous concentrations of chemicals. They are not a measure of relative toxicity.

Appropriate engineering controls**Engineering controls**

Showers
 Eyewash stations
 Ventilation systems.
 Ensure that eyewash stations and safety showers are close to the workstation location.
 Apply technical measures to comply with the occupational exposure limits.

If in the handling and application of this material, safe exposure levels could be exceeded, the use of engineering controls such as local exhaust ventilation must be considered and the results documented. If achieving safe exposure levels does not require engineering controls, then a detailed and documented risk assessment using the relevant Personal Protective Equipment (PPE) (refer to PPE section below) as a basis must be carried out to determine the minimum PPE requirements.

Individual protection measures, such as personal protective equipment

The selection of PPE is dependent on a detailed risk assessment. The risk assessment should consider the work situation, the physical form of the chemical, the handling methods, and environmental factors.

OVERALLS, SAFETY SHOES, CHEMICAL GOGGLES, GLOVES, RESPIRATOR.

**Eye/face protection**

Tight sealing safety goggles.

Skin and body protection

Wear suitable protective clothing. Overalls. Protective shoes or boots.

Hand protection

Protective gloves.

Respiratory protection

If determined by a risk assessment an inhalation risk exists, wear an organic vapour respirator meeting the requirements of AS/NZS 1715 and AS/NZS 1716. If determined by a risk assessment an inhalation risk exists, wear an air supplied respirator meeting the requirements of AS/NZS 1715 and AS/NZS 1716.

Environmental exposure controls

No information available.

9. PHYSICAL AND CHEMICAL PROPERTIES**Information on basic physical and chemical properties**

Physical state	Liquid
Appearance	No information available.
Color	Reddish Brown
Odor	Characteristic
Odor threshold	No information available.

<u>Property</u>	<u>Values</u>	<u>Remarks • Method</u>
pH	No data available	None known
pH (as aqueous solution)	No data available	None known
Melting point / freezing point	No data available	None known
Boiling point / boiling range	>200 C	None known
Flash point	>140 C	None known
Evaporation rate	No data available	None known
Flammability (solid, gas)	No data available	None known

Flammability Limit in Air		None known
Upper flammability or explosive limits	No data available	
Lower flammability or explosive limits	No data available	
Vapor pressure	No data available	None known
Vapor density	No data available	None known
Relative density	1.13 @ 25C	None known
Water solubility	Immiscible in water	None known
Solubility(ies)	No data available	None known
Partition coefficient	No data available	None known
Autoignition temperature	430 C	None known
Decomposition temperature	No data available	None known
Kinematic viscosity	300-450 cps	None known
Dynamic viscosity	No data available	None known

Other information**10. STABILITY AND REACTIVITY****Reactivity**

Reactivity Reacts with water.

Chemical stability

Stability Stable under recommended storage conditions. Isocyanates can react with substances containing active hydrogen, including water and alcohols.

Explosion data

Sensitivity to mechanical impact None.

Sensitivity to static discharge None.

Possibility of hazardous reactions

Possibility of hazardous reactions None under normal processing. Can react exothermically with water liberating carbon dioxide. Due to gaseous decomposition products, overpressure can occur in tightly sealed containers.

Conditions to avoid

Conditions to avoid Protect from moisture. Keep from any possible contact with water. Direct sunlight. Heat, flames and sparks.

Incompatible materials

Incompatible materials Moisture. Water. Acids. Alkalis. Alcohols. Amines. Oxidizing agents. Metals.

Hazardous decomposition products

Hazardous decomposition products Carbon oxides. Nitrogen oxides. Hydrogen cyanide.

11. TOXICOLOGICAL INFORMATION**Acute toxicity****Information on likely routes of exposure**

Product Information No adverse health effects expected if the chemical is handled in accordance with this

Safety Data Sheet and the chemical label. Symptoms or effects that may arise if the chemical is mishandled and overexposure occurs are:

Inhalation	Harmful if inhaled. May cause allergy or asthma symptoms or breathing difficulties if inhaled. May cause sensitization by inhalation. Irritating to respiratory system. May cause central nervous system depression with nausea, headache, dizziness, vomiting, and incoordination.
Eye contact	Causes serious eye irritation.
Skin contact	Causes skin irritation. May cause sensitization by skin contact. Repeated or prolonged skin contact may cause allergic reactions with susceptible persons.
Ingestion	Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhoea.
Symptoms	Erythema (skin redness). Irritating. May cause allergic skin reaction. May cause redness and tearing of the eyes. May cause allergy or asthma symptoms or breathing difficulties if inhaled.

Numerical measures of toxicity - Product Information

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
Isocyanic acid, polymethylene polyphenylene ester	= 49 g/kg (Rat)	> 9.4 g/kg (Rabbit) > 9400 mg/kg (Rabbit)	= 490 mg/m ³ (Rat) 4 h
Diphenylmethane-4,4-diisocyanate	= 31600 mg/kg (Rat) = 9200 mg/kg (Rat)	-	= 369 mg/m ³ (Rat) 4 h
Naphthalene, bis(1-methylethyl)-	= 3900 mg/kg (Rat)	> 4500 mg/kg (Rat)	> 5.64 mg/L (Rat) 4 h

See section 16 for terms and abbreviations

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Skin corrosion/irritation	Causes skin irritation.
Serious eye damage/eye irritation	Causes serious eye irritation.
Respiratory or skin sensitization	May cause an allergic skin reaction. May cause sensitization by inhalation and skin contact. Isocyanates are known to be strong sensitizers.
Germ cell mutagenicity	No information available.
Carcinogenicity	Suspected of causing cancer.

Chemical name	Australia
Isocyanic acid, polymethylene polyphenylene ester - 9016-87-9	Carc. 2
Diphenylmethane-4,4-diisocyanate - 101-68-8	Carc. 2
Diphenylmethanediisocyanate, mixture of 2,4 and 4,4 isomers - 5873-54-1	Carc. 2

Reproductive toxicity	No information available.
STOT - single exposure	May cause respiratory irritation.
STOT - repeated exposure	May cause damage to organs through prolonged or repeated exposure. (lungs).
Aspiration hazard	No information available.

Chronic effects:

For Isocyanates: Animal studies have shown that respiratory sensitisation can be induced by skin contact with known respiratory sensitisers including diisocyanates. These results emphasise the need for protective clothing including gloves to be worn when handling these chemicals or in maintenance work.

12. ECOLOGICAL INFORMATION

Ecotoxicity**Ecotoxicity**

Keep out of waterways. Toxic to aquatic life with long lasting effects.

Chemical name	Algae/aquatic plants	Fish	Toxicity to microorganisms	Crustacea
Naphthalene, bis(1-methylethyl)-	-	LC50: >1000mg/L (96h, Cyprinus carpio) LC50: >1000mg/L (96h, Oryzias latipes)	-	EC50: =2.3mg/L (24h, Daphnia magna)

Persistence and degradability**Persistence and degradability**

No information available.

Bioaccumulative potential**Bioaccumulation**

No information available.

Chemical name	Partition coefficient
Naphthalene, bis(1-methylethyl)-	>4

Mobility**Mobility in soil**

Limited mobility in soil due to reaction of diisocyanates with moisture present in soil.

Other adverse effects

13. DISPOSAL CONSIDERATIONS

Waste treatment methods**Waste from residues/unused products**

Dispose of in accordance with local regulations. Dispose of waste in accordance with environmental legislation. Should not be released into the environment.

14. TRANSPORT INFORMATION

ADG

Classified as Dangerous Goods by the criteria of the Australian Dangerous Goods Code (ADG Code) for Transport by Road and Rail; DANGEROUS GOODS.

Environmentally Hazardous Substances meeting the descriptions of UN 3077 or UN 3082 are not subject to the provisions of the Australian Code for the Transport of Dangerous Goods by Road and Rail when transported by road or rail in: packagings that do not incorporate a receptacle exceeding 500 kg(L); or IBCs.

UN number

3082

Proper shipping name

ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (CONTAINS DIISOPROPYLNAPHTHALENE)

Hazard class

9

Packing group III
Hazchem code •3Z

IATA

Classified as Dangerous Goods by the criteria of the International Air Transport Association (IATA) Dangerous Goods Regulations for transport by air; DANGEROUS GOODS.

UN number 3082
UN proper shipping name ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (CONTAINS DIISOPROPYLNAPHTHALENE)
Transport hazard class(es) 9
Packing group III

IMDG

Classified as Dangerous Goods by the criteria of the International Maritime Dangerous Goods Code (IMDG Code) for transport by sea; DANGEROUS GOODS.

UN number 3082
UN proper shipping name ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (CONTAINS DIISOPROPYLNAPHTHALENE)
Transport hazard class(es) 9
Packing group III
IMDG EMS Fire F-A
IMDG EMS Spill S-F
Marine pollutant Yes

15. REGULATORY INFORMATION

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

National regulations

Australia

Classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG).

Environmentally Hazardous Substances meeting the descriptions of UN 3077 or UN 3082 are not subject to the provisions of the Australian Code for the Transport of Dangerous Goods by Road and Rail when transported by road or rail in: packagings that do not incorporate a receptacle exceeding 500 kg(L); or IBCs.

Classified as a hazardous chemical in accordance with the criteria of Safe Work Australia - Globally Harmonized System (GHS).

See section 8 for national exposure control parameters

Poisons Schedule (SUSMP) 6

Chemical name	National pollutant inventory
Diphenylmethane-4,4-diisocyanate - 101-68-8	10 tonne/yr Threshold category 1

International Inventories

AIIC All the constituents of this material are listed on the Australian Inventory of Industrial Chemicals.

Legend:

- Australian Inventory of Industrial Chemicals

International Regulations

The Montreal Protocol on Substances that Deplete the Ozone Layer Not applicable

The Stockholm Convention on Persistent Organic Pollutants Not applicable

The Rotterdam Convention Not applicable

16. OTHER INFORMATION

Reason(s) For Issue: Revised Primary SDS
Change to Product Name

Issuing Date: 27-Oct-2021

This Safety Data Sheet has been prepared by Ixom Operations Pty Ltd (Toxicology and SDS Services).

Revision Note:

The symbol (*) in the margin of this SDS indicates that this line has been revised.

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		

Key literature references and sources for data used to compile the SDS

EPA (Environmental Protection Agency)
Acute Exposure Guideline Level(s) (AEGL(s))
U.S. Environmental Protection Agency Federal Insecticide, Fungicide, and Rodenticide Act
U.S. Environmental Protection Agency High Production Volume Chemicals
Food Research Journal
Hazardous Substance Database
International Uniform Chemical Information Database (IUCLID)
Japan GHS Classification
Australian Industrial Chemicals Introduction Scheme (AICIS)
NIOSH (National Institute for Occupational Safety and Health)
National Library of Medicine's ChemID Plus (NLM CIP)
National Library of Medicine's PubMed database (NLM PUBMED)
National Toxicology Program (NTP)
New Zealand's Chemical Classification and Information Database (CCID)
Organization for Economic Co-operation and Development Environment, Health, and Safety Publications
Organization for Economic Co-operation and Development High Production Volume Chemicals Program
Organization for Economic Co-operation and Development Screening Information Data Set
RTECS (Registry of Toxic Effects of Chemical Substances)
World Health Organization

Disclaimer

This SDS summarises to our best knowledge at the date of issue, the chemical health and safety hazards of the material and general guidance on how to safely handle the material in the workplace. Since The Supplier cannot anticipate or control the conditions under which the product may be used, each user must, prior to usage, assess and control the risks arising from its use of the material.

If clarification or further information is needed, the user should contact their Supplier representative or The Supplier at the contact details on page 1.

The Supplier's responsibility for the material as sold is subject to the terms and conditions of sale, a copy of which is

available upon request.

End of Safety Data Sheet