SAFETY DATA SHEET

Section 1. Identification of the material and the supplier

Product:	**SabreGrip R74 PU Roof Insulation Adhesive**
Product Use:	Adhesive
Restriction of Use:	Refer to Section 15
New Zealand Supplier:	Sabre Adhesives Ltd
Address:	42 Cambridge Street South Levin, 5510, New Zealand
Telephone:	+64 (0)6 366 0007
Emergency No:	**0800 764 766 (National Poison Centre)**
Australian Supplier:	Sabre Adhesives Ltd
Address:	Level 6, 10 Herb Elliot Avenue, Sydney NSW, 2127
Telephone No:	+61 2 9098 8244
Emergency No:	**13 11 26 (National Poison Line)**
Date SDS Issued:	17 October 2024

Section 2. Hazards Identification

Australia:
Classified as Hazardous according to the Globally Harmonised System of Classification and labelling of Chemicals (GHS) including Work, Health and Safety regulations, Australia

New Zealand:
This substance is hazardous according to the EPA Hazardous Substances (Classification) Notice 2020

NZ - EPA Approval Code: Surface Coatings and Colourants (subsidiary) - HSR002670

Pictograms

SIGNAL WORD: DANGER

GHS Category	Hazard Code	Hazard Statement
Liquified Gas	H280	Contains gas under pressure may explode if heated.
Acute inhalation toxicity Cat. 4	H332	Harmful if inhaled.
Skin irritation Cat. 2	H315	Causes skin irritation.
Eye irritation Cat. 2	H319	Causes serious eye irritation.
Respiratory sensitisation Cat. 1	H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled.

Skin sensitisation Cat. 1	H317	May cause an allergic skin reaction.
Specific target organ toxicity – repeated exposure Cat. 2	H373	May cause damage to organs through prolonged or repeated exposure.
specific target organ toxicity – single exposure Cat. 3 respiratory tract irritation	H335	May cause respiratory irritation.

Prevention Code	Prevention Statement
P103	Read carefully and follow all instructions.
P260	Do not breathe dust, fumes, gas, mist, vapours or spray.
P264	Wash hands 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 clothing as detailed in SDS Section 8.
P285	In case of inadequate ventilation wear respiratory protection.

Response Code	Response Statement
P101	If medical advice is needed, have product container or label at hand.
P312	Call a POISON CENTER or doctor/physician if you feel unwell.
P302 + P352	IF ON SKIN: Wash with plenty of water.
P304 + P341	IF INHALED: If breathing is difficult, 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 do. Continue rinsing.
P333 + P313	If skin irritation or rash occurs: Get medical advice/attention.
P337 + P313	If eye irritation persists: Get medical advice/attention.
P342 + P311	If experiencing respiratory symptoms: Call a POISON CENTER or doctor/physician.
P362+P364	Take off contaminated clothing and wash before reuse.

Storage Code	Storage Statement
P403	Store in a well-ventilated place.
P405	Store locked up.
P403 + P233	Store in a well-ventilated place. Keep container tightly closed.
P410 + P403	Protect from sunlight. Store in a well-ventilated place.

Disposal Code	Disposal Statement
P501	Dispose of according to the local authorities

Section 3. Composition of hazardous Ingredients

Ingredients	Wt%	CAS NUMBER.
MDI oligomer	5-25	9016-87-9
4,4'-diphenylmethane diisocyanate (MDI)	5-25	101-68-8
2,4'-diphenylmethane diisocyanate	<10	5873-54-1
MDI homopolymer	<10	25686-28-6
Polypropylene glycol glyceryl ether	<10	25791-96-2
1,1,1,2-tetrafluoroethane	10-30	811-97-2

Section 4. First Aid Measures

Routes of Exposure:

If in Eyes — Gently rinse the affected eye(s) with clean, cool water for at least 15 minutes. Have the patient lie or sit down and tilt the head back. Hold the

	eyelid(s) open and pour water slowly over the eyeball(s) at the inner corners, letting the water run out of the outer corners. The patient may be in great pain and wish to keep the eyes closed. It is important that the material is rinsed from the eyes to prevent further damage. Ensure that the patient looks up, and side to side as the eye is rinsed in order to better reach all parts of the eye(s) Transport to hospital or doctor. Even when no pain persists and vision is good, a doctor should examine the eye as delayed damage may occur. If the patient cannot tolerate light, protect the eyes with a clean, loosely tied bandage. Ensure verbal communication and physical contact with the patient. DO NOT allow the patient to rub the eyes DO NOT allow the patient to tightly shut the eyes DO NOT introduce oil or ointment into the eye(s) without medical advice DO NOT use hot or tepid water.
If on Skin	Immediately remove all contaminated clothing, including footwear. Flush skin and hair with running water (and soap if available). Seek medical attention in event of irritation.
If Swallowed	Rinse mouth. 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. Seek medical assistance if needed.
If Inhaled	Remove person to fresh air. Remove contaminated clothing and loosen remaining clothing. Allow person to assume most comfortable position and keep warm. Keep at rest until fully recovered. Get medical advice if breathing becomes difficult.

Most important symptoms and effects, both acute and delayed

Symptoms:	
Inhalation	Harmful if inhaled. May cause allergy or asthma symptoms or breathing difficulties if inhaled. May cause respiratory irritation.
Ingestion	Not available.
Skin contact	Causes skin irritation. May cause an allergic skin reaction.
Eye contact	Causes serious eye irritation.
Chronic:	May cause damage to organs through prolonged or repeated exposure.
Notes to Doctor:	Treat symptomatically.

Section 5. Fire Fighting Measures

Hazard Type	None flammable. Contains low boiling substance: Closed containers may rupture due to pressure buildup under fire conditions. Vented gas is more dense than air and may collect in pits, basements.
Hazards from products	Moderate fire hazard when exposed to heat or flame. - When heated to high temperatures decomposes rapidly generating vapour which pressures and may then rupture containers with release of flammable and highly toxic isocyanate vapour. - Burns with acrid black smoke and poisonous fumes. - Due to reaction with water producing CO2-gas, a hazardous build-up of pressure could result if contaminated containers are re-sealed. Decomposition may produce toxic fumes of:

	carbon monoxide (CO) carbon dioxide (CO2) isocyanates hydrogen cyanid and minor amounts of nitrogen oxides (NOx) hydrogen fluoride other pyrolysis products typical of burning organic material.
Suitable Extinguishing media	DO NOT EXTINGUISH BURNING GAS UNLESS LEAK CAN BE STOPPED SAFELY: OTHERWISE: LEAVE GAS TO BURN. Use Water spray, fog , dry chemical, BCF, carbon dioxide or alcohol stable foam to extinguish. Do not use water jet.
Precautions for firefighters and special protective clothing	Positive pressure, self-contained breathing apparatus is required for fire-fighting of hazardous materials.
HAZCHEM CODE	**2ZE**

Section 6. Accidental Release Measures

Wear protective clothing as described in Section 8. Ventilate spillage area. Avoid contact with skin and eyes. Avoid breathing vapour and any contact with liquid or gas. Do not enter confined spaces where gas may be accumulated.

Prevent by any means available, spillage from entering drains and water-courses.

Stop leak only if safe to so do. Remove leaking cylinders to safe place. Release pressure under safe controlled conditions by opening valve. Do not exert excessive pressure on the valve; do not attempt to operate a damaged valve. Orientate cylinder so that the leak is gas, not liquid, to minimise rate of leakage. Keep area clear of personnel until gas has dispersed.
Dispose of as per Section 13.

Section 7. Handling and Storage

Handling:

- Read carefully and follow all instructions.
- Do not handle until all safety precautions have been read and understood.
- Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
- Avoid breathing fumes, vapours or spray.
- Wash hands thoroughly after handling.
- Use only outdoors or in a well-ventilated area.
- Wear protective clothing [as detailed in SDS Section 8].
- Do NOT cut, drill, grind, weld or perform similar operations on or near containers.
- DO NOT attempt repair work on lines, vessels under pressure.
- DO NOT transfer gas from one cylinder to another.
- Check regularly for spills or leaks.
- Keep valves tightly closed but do not apply extra leverage to hand wheels or cylinder keys.
- Never insert a pointed object (e.g hooks) into cylinder cap openings as a means to open cap or move cylinder. Such action can inadvertently turn the valve and gas a gas leak. Use an adjustable strap instead of wrench to free an over-tight or rusted cap.

Storage:

- Store away from incompatible materials listed in Section 10.

- Keep out of reach of children.
- Store locked up.
- Store in a well-ventilated place. Keep container tightly closed.
- Protect from sunlight. Store in a well-ventilated place.
- Keep in original container.
- Check that containers are clearly labelled and free from leaks.

Section 8 Exposure Controls / Personal Protection

Exposure Limit Values:
WORKPLACE EXPOSURE STANDARDS (provided for guidance only)

Substance		TWA ppm	TWA mg/m³	STEL ppm	STEL mg/m³
MDI	[101-68-9]	0.02	0.07	-	-
1,1,1,2-Tetrafluoroethane (HCF 134a)	[811-97-2]	1000	4200	-	-

Workplace Exposure Standard – Time Weighted Average (WES-TWA). The time-weighted average exposure standard designed to protect the worker from the effects of long-term exposure. Workplace Exposure Standard – Short-Term Exposure Limit (WESSTEL). The 15-minute average exposure standard. Applies to any 15- Minute period in the working day and is designed to protect the worker against adverse effects of irritation, chronic or irreversible tissue change, or narcosis that may increase the likelihood of accidents. The WES-STEL is not an alternative to the WES-TWA; both the short-term and time-weighted average exposures apply. Workplace Exposure Standards and Biological Exposure Indices NOV 2023 14TH EDITION.

Engineering Controls
Ensure good ventilation of the work station.

Personal Protection Equipment

Eyes	Tight-fitting safety goggles with face shield. Avoid wearing contact lenses.
Hands	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 watch-bands should be removed and destroyed. Isocyanate resistant materials include Teflon, Viton, nitrile rubber and some PVA gloves. Protective gloves and overalls should be worn as specified in the appropriate national standard. Contaminated garments should be removed promptly and should not be re-used until they have been decontaminated. NOTE: Natural rubber, neoprene, PVC can be affected by isocyanates When handling sealed and suitably insulated cylinders wear cloth or leather gloves. Insulated gloves: NOTE: Insulated gloves should be loose fitting so that may be removed quickly if liquid is spilled upon them. Insulated gloves are not made to permit hands to be placed in the liquid; they provide only short-term protection from accidental contact with the liquid.
Skin	Wear protective clothing and safety shoes.
Respiratory	Type A-P Filter of sufficient capacity. (AS/NZS 1716 & 1715, EN 143:2000 & 149:2001, ANSI Z88 or national equivalent)

Section 9 Physical and Chemical Properties

Appearance	Liquified Gas Canister - Coloured
Odour	Not available
Odour Threshold	Not available
pH	Not available
Boiling Point	330^0C
Melting Point	Not available
Freezing Point	Not available
Flash Point	$>200^0$C
Flammability	Non Flammable
Upper and Lower Explosive Limits	Not available
Vapour Pressure	Not available
Vapour Density	8.5 (air=1)
Relative Density	1.24
Solubility in water	Immiscible
Partition Coefficient:	Not available
Auto-ignition Temperature	$>600^0$C
Viscosity	1050@ 20^0C
VOC content	Not available

Section 10. Stability and Reactivity

Stability of Substance	Stable at normal conditions.
Conditions to Avoid	Refer to Section 7.
Incompatible Materials	Refer to Section 7.
Hazardous Decomposition Products	Refer to Section 5.

Section 11 Toxicological Information

Acute Effects:

Swallowed	Not applicable.
Dermal	Not applicable.
Inhalation	Harmful if inhaled.The material can cause respiratory irritation in some persons. The body's response to such irritation can cause further lung damage. Inhalation of vapours may cause drowsiness and dizziness. This may be accompanied by sleepiness, reduced alertness, loss of reflexes, lack of co-ordination, and vertigo. Exposure to fluorocarbons can produce non-specific flu-like symptoms such as chills, fever, weakness, muscle pain, headache, chest discomfort, sore throat and dry cough with rapid recovery. High concentrations can cause irregular heartbeats and a stepwise reduction in lung capacity. The vapour/mist may be highly irritating to the upper respiratory tract and lungs; the response may be severe enough to produce bronchitis and pulmonary oedema. Possible neurological symptoms arising from isocyanate exposure include headache, insomnia, euphoria, ataxia, anxiety neurosis, depression and paranoia. Gastrointestinal disturbances are characterised by nausea and vomiting. Pulmonary sensitisation may produce asthmatic reactions

	ranging from minor breathing difficulties to severe allergic attacks; this may occur following a single acute exposure or may develop without warning for several hours after exposure. Sensitized people can react to very low doses, and should not be allowed to work in situations allowing exposure to this material. Continued exposure of sensitised persons may lead to possible long term respiratory impairment. Inhalation hazard is increased at higher temperatures. Material is highly volatile and may quickly form a concentrated atmosphere in confined or unventilated areas. The vapour may displace and replace air in breathing zone, acting as a simple asphyxiant. This may happen with little warning of overexposure. Inhalation of aerosols (mists, fumes), generated by the material during the course of normal handling, may produce severely toxic effects. Relatively small amounts absorbed from the lungs may prove fatal. There is strong evidence to suggest that this material can cause, if inhaled once, very serious, irreversible damage of organs.
Eye	Causes serious irritation to eyes.
Skin	Causes skin irritation. May cause an allergic skin reaction.

Chronic Effects:

Carcinogenicity	Not applicable.
Reproductive Toxicity	Not applicable.
Germ Cell Mutagenicity	Not applicable.
Aspiration	Not applicable.
STOT/SE	Not applicable.
STOT/RE	May cause damage to organs through repeated or prolonged exposure (Respiratory), (Inhalation)

Individual component information:

Acute Toxicity:

Chemical Name	Oral – LD50	Dermal – LD50	Inhalation – LC50
MDI oligomer	43000 mg/kg (rat)	>9400 mg/kg (rabbit)	0.49 mg/L/4h (rat)
4,4'-diphenylmethane diisocyanate (MDI)	>2000 mg/kg (rat)	>6200 mg/kg (rabbit)	0.368mg/l/4hr (rat)
2,4'-diphenylmethane diisocyanate	>2000 mg/kg (rat)	>9400 mg/kg (rabbit)	0.368mg/l/4h (rat)
MDI homopolymer	>2000 mg/kg (rat)	>9400 mg/kg (rabbit)	0.368mg/l/4h (rat)
polypropylene glycol glyceryl ether	>2000 mg/kg (rat)	>2000mg/kg (rat)	>50 mg/L/4h (rat)
1,1,1,2-tetrafluoroethane	-	-	350453.102 ppm/4h (rat)

Section 12. Ecotoxicological Information

Not hazardous to the environment.

Persistence and degradability	No data available on product
Bioaccumulative	No data available on product

Mobility in soil	No data available on product
Other adverse effects	No data available on product

	Endpoint	Test Duration (hr)	Species	Value	Source
4,4'-diphenylmethane diisocyanate (MDI)	EC50	72h	Algae or other aquatic plants	>1640mg/l	2
	BCF	672h	Fish	61-150	7
	NOEC(ECx)	504h	Crustacia	≥10 mg/l	2
	LC50	96h	Fish	95.24-134.37mg/l	

	Endpoint	Test Duration (hr)	Species	Value	Source
2,4'-diphenylmethane diisocyanate	NOEC(ECx)	504h	Crustacia	>10mg/l	2
	EC50	72h	Algae or other aquatic plants	>1640mg/l	2
	LC50	96h	Fish	>1000mg/l	2

	Endpoint	Test Duration (hr)	Species	Value	Source
MDI homopolymer	NOEC(ECx)	504h	Crustacia	>1640mg/l	2
	EC50	72h	Algae or other aquatic plants	>10 mg/l	2
	LC50	96h	Fish	>1000 mg/l	2

	Endpoint	Test Duration (hr)	Species	Value
7polypropylene glycol glyceryl ether	BCF	1008h	Fish	0.2-2.2mg/l
	EC50	72h	Algae or other aquatic plants	>100mg/l
	EC50	48h	Crustacia	>100mg/l
	NOEC(ECx)	**504h**	**Crustacia**	**>10mg/l**
	LC50	**96h**	**Fish**	**>1000mg/l**

	Endpoint	Test Duration (hr)	Species	Value	Source
1,1,1,2-tetrafluoroethane	**NOEC(ECx)**	96h	Fish	300mg/l	
	EC50	72h	Algae or other aquatic plants	>114mg/l	2
	EC50	48h	**Crustacia**	980 mg/l	
	LC50	96h	Fish	450mg/l	
	EC50	**96h**	**Algae or other aquatic plants**	**142mg/l**	

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Legend: *Extracted from 1. IUCLID Toxicity Data 2. Europe ECHA Registered Substances – Ecotoxicological Information – Aquatic Toxicity 4. US EPA, Ecotox database - Aquatic Toxicity Data 5. ECETOC Aquatic Hazard Assessment Data 6. NITE (Japan) - Bioconcentration Data 7. METI (Japan) - Bioconcentration Data 8. Vendor Data*

Section 13. Disposal Considerations

Disposal Method:
Ensure containers are empty before discarding. Recycle where possible. Dispose as per Local Regulations.

Precautions and methods to avoid: Do not allow to enter waterways.

Section 14 Transport Information

This product is classified as a Dangerous Good for transport in Australia; ADG 7

This product is classified as a Dangerous Good for transport in NZ ; NZS 5433:2020 and SNZ HB 5433:2021

Road, Rail, Sea and Air Transport

UN No	3500
Class - Primary	2.2
Packing Group	Not applicable
Proper Shipping Name	**CHEMICAL UNDER PRESSURE, N.O.S.**
Marine Pollutant	No
Special Provisions	274, 362

Section 15 Regulatory Information

Australia:
Classified as Hazardous according to the Globally Harmonised System of Classification and labelling of Chemicals (GHS) including Work, Health and Safety regulations, Australia

Poison Schedule No: Not scheduled

New Zealand:
This substance is hazardous according to the EPA Hazardous Substances (Classification) Notice 2020

EPA Approval Code: Surface Coatings and Colourants (subsidiary) - HSR002670

Controls in New Zealand:
Trigger quantities for this substance:

HSW (HS) Regulations 2017 and EPA Notices	**Trigger Quantity**
Certified Handler	Not required
Location Certificate	Not required
Tracking Trigger Quantities	Not required
Signage Trigger Quantities	10 000kg
Emergency Response Plan	1000kg
Secondary Containment	1000kg
Restriction of Use	Only use for the intended purpose.

Section 16 Other Information

Glossary

EC_{50}	Median effective concentration.
EEL	Environmental Exposure Limit.
EPA	Environmental Protection Authority
HSNO	Hazardous Substances and New Organisms.
HSW	Health and Safety at Work.
LC_{50}	Lethal concentration that will kill 50% of the test organisms inhaling or ingesting it.
LD_{50}	Lethal dose to kill 50% of test animals/organisms.
LEL	Lower explosive level.
OSHA	American Occupational Safety and Health Administration.
TEL	Tolerable Exposure Limit.
TLV	Threshold Limit Value-an exposure limit set by responsible

	authority.
UEL	Upper Explosive Level
WES	Workplace Exposure Limit

References:
Australia:

1. Preparation of Safety Data Sheets for Hazardous Chemicals Code of Practice.
2. Standard for the Uniform Scheduling of Medicines and Poisons.
3. Australian Code for the Transport of Dangerous Goods by Road & Rail.
4. Model Work Health and Safety Regulations, Schedule 10: Prohibited carcinogens, restricted carcinogens and restricted hazardous chemicals.
5. Workplace exposure standards for airborne contaminants, Safe work Australia.
6. American Conference of Industrial Hygienists (ACGIH).
7. Globally Harmonised System of classification and labelling of chemicals.

New Zealand:

1. EPA Hazardous Substances (Safety Data Sheets) Notice 2017
2. Workplace Exposure Standards and Biological Exposure Indices APRIL 2022 edition.
3. Assigning a hazardous substance to a HSNO Approval (Aug 2013).
4. Transport of Dangerous goods on land NZS 5433:2020
5. HSW (Hazardous Substances) Regulations 2017

Disclaimer
This document has been prepared by TCC (NZ) Ltd and serves as the suppliers Safety Data Sheet ('SDS'). It is based on information concerning the product which has been provided to TCC (NZ) Ltd or obtained from third party sources 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. Further clarification regarding any aspect of the product should be obtained directly from the manufacturer. While TCC (NZ) have taken all due care to include accurate and up-to-date information in this SDS, it does not provide any warranty as to accuracy or completeness. As far as lawfully possible, TCC (NZ) Ltd accept 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 SDS

The information herein is given in good faith, but no warranty, express or implied is made.

Please contact the Australian Manufacturer or New Zealand distributor, if further information is required.

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