

1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

Product Name: **SILENT SEAL A - COMPONENT**

Recommended Use of the Chemical and Restrictions on Use A-component for a two component low pressure polyurethane foam system.

Supplier: Orica Australia Pty Ltd trading as Minova Australia
ABN: 99 004 117 828
Street Address: George Booth Drive,
Kurri Kurri, NSW 2327
Australia

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

Emergency Telephone: **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

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

This material is hazardous according to Safe Work Australia; HAZARDOUS CHEMICAL.

Classification of the chemical:

Gases under pressure - Compressed Gas
Acute Inhalation Toxicity - Category 4
Skin Irritation - Category 2
Skin Sensitisation - Category 1
Eye Irritation - Category 2A
Respiratory Sensitisation - Category 1
Carcinogenicity - Category 2
Specific target organ toxicity (single exposure) - Category 3
Specific target organ toxicity (repeated exposure) - Category 2

SIGNAL WORD: DANGER



Hazard Statement(s):

H280 Contains gas under pressure; may explode if heated.
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.

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Precautionary Statement(s):

Prevention:

P201 Obtain special instructions before use.
P202 Do not handle until all safety precautions have been read and understood.
P251 Pressurized container: Do not pierce or burn, even after use.
P260 Do not breathe fumes, mists, vapours, spray.
P262 Do not get in eyes, on skin, or on clothing.
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 gloves, protective clothing, eye and face protection.
P281 Use personal protective equipment as required.
P284 Wear respiratory protection.

Response:

P302+P352 IF ON SKIN: Wash with plenty of soap and water.
P333+P313 If skin irritation or rash occurs: Get medical advice/attention.
P304+P341 IF INHALED: If breathing is difficult, remove to fresh air and keep at rest in a position comfortable for breathing.
P342+P311 If experiencing respiratory symptoms: Call a POISON CENTER or doctor/physician.
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P337+P313 If eye irritation persists: Get medical advice/attention.
P308+P313 IF exposed or concerned: Get medical advice/attention.
P321 Specific treatment (see First Aid Measures on Safety Data Sheet).
P362 Take off contaminated clothing and wash before reuse.

Storage:

P405 Store locked up.
P410+P403 Protect from sunlight. Store in a well-ventilated place.

Disposal:

P501 Dispose of contents and container in accordance with local, regional, national, international regulations.

Poisons Schedule (SUSMP): None allocated.

3. COMPOSITION AND INFORMATION ON INGREDIENTS

Components	CAS Number	Proportion	Hazard Codes
Diphenylmethane-4,4-diisocyanate	101-68-8	30-60%	H315 H317 H319 H332 H334 H335 H351 H373
Isocyanic acid, polymethylene polyphenylene ester	9016-87-9	30-60%	H332 H319 H335 H315 H351 H334 H317 H373
Nitrogen gas	7727-37-9	<10%	-
1,1,1,2-Tetrafluoroethane	811-97-2	5-<10%	H280

4. FIRST AID MEASURES

For advice, contact a Poisons Information Centre (e.g. phone Australia 131 126; New Zealand 0800 764 766) or a doctor.

Inhalation:

Remove victim from area of exposure - avoid becoming a casualty. Remove contaminated clothing and loosen remaining clothing. Allow patient to assume most comfortable position and keep warm. Keep at rest until fully recovered. If patient finds breathing difficult and develops a bluish discoloration of the skin (which suggests a lack of oxygen in the blood - cyanosis), ensure airways are clear of any obstruction and have a qualified person give oxygen through a face mask. Apply artificial respiration if patient is not breathing. Seek immediate medical advice.

Skin Contact:

If skin or hair contact occurs, immediately remove any contaminated clothing and wash skin and hair thoroughly with running water. If swelling, redness, blistering or irritation occurs seek medical assistance.

Eye Contact:

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

Ingestion:

Rinse mouth with water. If swallowed, do NOT induce vomiting. Give a glass of water. Never give anything by the mouth to an unconscious patient. Seek medical assistance.

Indication of immediate medical attention and special treatment needed:

Treat symptomatically. Effects may be delayed.

Asthma-like symptoms may develop and may be immediate or delayed for several hours after exposure. Extreme asthmatic reactions can be life threatening. Following significant exposure the patient should be kept under medical surveillance for 24-48 hours for signs of respiratory distress.

Epinephrine and other sympathomimetic drugs should be avoided following exposure to high propellant concentrations as cardiac arrhythmias may result with possible subsequent cardiac arrest. The use of other drugs with less arrhythmogenic potential should be considered. If sympathomimetic drugs are administered, observe victim for the development of cardiac arrhythmias.

5. FIRE FIGHTING MEASURES

Suitable Extinguishing Media:

Fine water spray, normal foam, dry agent (carbon dioxide, dry chemical powder).

Hazchem or Emergency Action Code: 2ZE**Specific hazards arising from the chemical:**

Combustible material. In a fire or if heated, a pressure increase will occur and the container may burst. On burning will emit toxic fumes, including those of isocyanates, hydrogen cyanide, hydrogen fluoride, oxides of carbon and oxides of nitrogen.

Special protective equipment and precautions for fire-fighters:

If safe to do so, remove containers from path of fire. Keep people away from and upwind of fire. Fire fighters to wear self-contained breathing apparatus and suitable protective clothing if risk of exposure to vapour or products of combustion. Keep containers cool with water spray.

6. ACCIDENTAL RELEASE MEASURES

Emergency procedures/Environmental precautions:

Isolate spill or leak area immediately. Clear area of all unprotected personnel. Shut off all possible sources of ignition. Work up wind or increase ventilation. Do not allow container or product to get into drains, sewers, streams or ponds. If contamination of sewers or waterways has occurred advise local emergency services.

Personal precautions/Protective equipment/Methods and materials for containment and cleaning up:

Slippery when spilt. Avoid accidents, clean up immediately. Wear protective equipment to prevent skin and eye contact and breathing in vapours. Work up wind or increase ventilation. Contain - prevent run off into drains and waterways. Use absorbent (soil, sand or other inert material). Collect and place into approved, properly labelled open-head metal containers or drums for disposal. Allow container to vent for 72 hours to let carbon dioxide escape. Neutralise with decontaminant solution (Formulation 1: sodium bicarbonate 5-10%, liquid detergent 0.2-0.5%, water to 100%; OR Formulation 2: ammonium hydroxide or concentrated ammonia solution 3-8%, liquid detergent 0.2-0.5%, water to 100%). Use ten parts of solution for each part of the spill. Wait 15 minutes and repeat applications of decontaminant solution, followed by absorbent until the surface is decontaminated.

7. HANDLING AND STORAGE

Precautions for safe handling:

The product may be handled only by appropriately trained personnel. Read label before use. Avoid skin and eye contact and breathing in vapour, mists and aerosols. Use only in a well-ventilated area. Wear respiratory protection when spraying. Susceptible individuals with pre-existing respiratory conditions or prior allergic reactions to isocyanates must not be exposed. Wash thoroughly after handling. Do not puncture or incinerate. Contents under pressure.

Conditions for safe storage, including any incompatibilities:

Store in a cool, dry, well ventilated place and out of direct sunlight. Store away from incompatible materials described in Section 10. Store between 16°C and 32°C. Products stored below 16°C or above 32°C must be given adequate time to warm up/cool down. Protect from temperatures above 50°C. Protect from freezing. Protect containers from physical damage. Store containers in upright position. Keep containers closed when not in use - check regularly for leaks. Keep dry - reacts with water, may lead to drum rupture.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

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

Isocyanates, all (as -NCO): 8hr TWA = 0.02 mg/m³, 15 min STEL = 0.07 mg/m³, Sen
1,1,1,2-Tetrafluoroethane (HFC 134a): 8hr TWA = 4240 mg/m³ (1000 ppm)

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.

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Biological Exposure Indices: Isocyanates.

Appropriate engineering controls:

Ensure ventilation is adequate and that air concentrations of components are controlled below quoted Workplace Exposure Standards. Use with local exhaust ventilation or while wearing organic vapour/particulate respirator.

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 (PPE):

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.



Wear overalls, chemical goggles and impervious gloves. Use with adequate ventilation. If determined by a risk assessment an inhalation risk exists, wear an organic vapour/particulate respirator or an air supplied mask meeting the requirements of AS/NZS 1715 and AS/NZS 1716. Available information suggests that gloves made from the following material(s) should be suitable for intermittent contact, however, due to variations in glove construction and local conditions, a final assessment should be made by the user: nitrile-butadiene rubber, butyl rubber, polyethylene, neoprene, PVC. Always wash hands before smoking, eating, drinking or using the toilet. Wash contaminated clothing and other protective equipment before storage or re-use.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state:	Liquid
Colour:	Amber to Dark Brown
Odour:	Slight Musty
Solubility:	Immiscible with water. Reacts slowly with water.
Specific Gravity:	1.2 @ 25°C approx.
Relative Vapour Density (air=1):	Not available
Vapour Pressure (20 °C):	>345 kPa (contents under pressure); <1 mmHg at 40°C (liquid phase)
Flash Point (°C):	>199 (MDI)
Flammability Limits (%):	Not available
Autoignition Temperature (°C):	Not available
% Volatile by Weight:	Not available
Boiling Point/Range (°C):	208 (MDI)
Decomposition Point (°C):	Not available
pH:	Not applicable
Viscosity:	Not available
Evaporation Rate:	Not available

10. STABILITY AND REACTIVITY

Product Name: SILENT SEAL A - COMPONENT
Substance No: 000000052114

Issued: 15/02/2018
Version: 4

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Reactivity:	No information available.
Chemical stability:	Stable under normal conditions of use.
Possibility of hazardous reactions:	Reacts with moisture liberating carbon dioxide. Heating can cause expansion or decomposition of the material, which can lead to the containers exploding.
Conditions to avoid:	Avoid exposure to heat, sources of ignition, and open flame. Avoid exposure to moisture. Avoid temperatures below 16°C. Avoid temperatures above 32°C. Exposure to elevated temperatures can cause product to decompose.
Incompatible materials:	Incompatible with alcohols, amines, ammonia, strong bases, metal compounds and oxidising agents.
Hazardous decomposition products:	Isocyanates. Hydrogen cyanide. Hydrogen fluoride. Oxides of carbon. Oxides of nitrogen.

11. TOXICOLOGICAL INFORMATION

No adverse health effects expected if the product is handled in accordance with this Safety Data Sheet and the product label. Symptoms or effects that may arise if the product is mishandled and overexposure occurs are:

Ingestion:	Swallowing can result in nausea, vomiting, diarrhoea, and abdominal pain.
Eye contact:	An eye irritant. May cause temporary corneal injury.
Skin contact:	Contact with skin will result in irritation. A skin sensitiser. Repeated or prolonged skin contact may lead to allergic contact dermatitis.
Inhalation:	Material is irritant to the mucous membranes of the respiratory tract (airways). A respiratory sensitiser. Can cause possible allergic reactions, producing asthma-like symptoms. Symptoms may include irritation of the eyes, nose, throat and lungs, possibly dryness of the throat, tightness of the chest and difficulty in breathing. Onset of respiratory symptoms may be delayed for several hours after exposure. A hyper-reactive response may develop to even minimal concentrations of MDI in sensitised individuals. Repeated and/or prolonged exposure may cause productive cough, running nose, bronchopneumonia, pulmonary oedema and reduction of pulmonary function. Lung oedema may occur and these effects may be delayed. Breathing in high concentrations can produce central nervous system depression, which can lead to loss of co-ordination, impaired judgement and if exposure is prolonged, unconsciousness.

Acute toxicity:

Oral LD50 (rat): For MDI: >5,000 mg/kg
Dermal LD50 (rabbit): For MDI: >5,000 mg/kg
Inhalation LC50 (rat): For MDI: 490 mg/m³/4H

Skin corrosion/irritation:	Irritant.
Serious eye damage/irritation:	Moderate to strong eye irritant.
Respiratory or skin sensitisation:	A respiratory and skin sensitiser.

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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.

Mutagenicity: Animal genetic toxicity studies were predominantly negative.
Carcinogenicity: Suspected of causing cancer. This material has been classified by the International Agency for Research on Cancer (IARC) as a Group 3 agent. Group 3 - The agent is not classifiable as to its carcinogenicity to humans.

Reproductive toxicity: Not classified.
Specific Target Organ Toxicity (STOT) - single exposure: May cause respiratory irritation.
Specific Target Organ Toxicity (STOT) - repeated exposure: May cause damage to organs through prolonged or repeated exposure. (lungs) (central nervous system) (skin)
Aspiration hazard: No information available.

MDI/PMDI did not cause birth defects in laboratory animals; fetal effects occurred only at high doses which were toxic to the mother.

Lung tumors have been observed in laboratory animals exposed to respirable aerosol droplets of MDI/PMDI (6mg/m³) for their lifetime. Tumors occurred concurrently with respiratory irritation and lung injury. Current exposure guidelines are expected to protect against these effects.

12. ECOLOGICAL INFORMATION

Ecotoxicity Avoid contaminating waterways.

Persistence/degradability: The material is not readily biodegradable. In the aquatic and terrestrial environment, material reacts with water forming predominantly insoluble polyureas which appear to be stable. In the atmospheric environment, material is expected to have a short tropospheric half-life, based on data from similar diisocyanates.

Bioaccumulative potential: This product shows a low bioaccumulation potential.

Mobility in soil: Expected to have low mobility based on product's reactivity with water forming predominantly insoluble polyureas.

Aquatic toxicity: Low toxicity to aquatic organisms.
3hr EC50 (activated sludge, static, respiration inhibition): >100 mg/L
For a similar material: 72hr NOEC (Desmodesmus subspicatus - green algae, static, growth rate inhibition): 1,640 mg/L

48hr EC50 (Daphnia magna): For a similar material: >1,000 mg/L
96hr LC50 (fish): For a similar material: >1,000 mg/L (zebra fish)

13. DISPOSAL CONSIDERATIONS

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Disposal methods:

Refer to Waste Management Authority. Dispose of contents and container in accordance with local, regional, national, international regulations. Do not incinerate.

Wear personal protective equipment and in a well-ventilated area when handling.

1. Empty cylinders by dispensing the product into a waste container like a cardboard box or plastic bag. Depressurise the used cylinders using the dispensing unit with a new nozzle attached. Spray the product until one of the components/cylinders no longer sprays chemical.

2. Remove the nozzle and then continue to depressurise by dispensing the remaining product(s) into a waste container (a box lined with a plastic bag) that has adequate industrial liquid absorbing medium in the bottom. Dispense the residual chemicals until the pressure is down to a minimum or there are just large bubbles in the hose.

3. Close the cylinder valves completely, and then operate the dispensing unit again to empty and depressurise the hoses. Use a 9/16" wrench and remove the hoses from the cylinders. Use caution in case there is some residual chemical and/or pressure in the hoses.

4. Invert the cylinder and point away from face. Slowly open the cylinder over the waste container to catch any residual spray.

5. Return the cylinder to an upright position. Shake the container; there should not be any sloshing of liquid. Make sure to leave valves OPEN – do not close. DO NOT PUNCTURE.

Treat as hazardous material if product is still present in the cylinder after dispensing.

14. TRANSPORT INFORMATION

Road and Rail Transport

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



UN No: 3500
Transport Hazard Class: 2.2 Non-Flammable Non-Toxic Gas
Proper Shipping Name or Technical Name: CHEMICAL UNDER PRESSURE, N.O.S. (FLUORINATED HYDROCARBON, NITROGEN)
Hazchem or Emergency Action Code: 2ZE

Marine Transport

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

UN No: 3500
Transport Hazard Class: 2.2 Non-Flammable Non-Toxic Gas
Proper Shipping Name or Technical Name: CHEMICAL UNDER PRESSURE, N.O.S. (FLUORINATED HYDROCARBON, NITROGEN)
IMDG EMS Fire: F-C
IMDG EMS Spill: S-V

Air Transport

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

UN No: 3500
Transport Hazard Class: 2.2 Non-Flammable Non-Toxic Gas

Product Name: SILENT SEAL A - COMPONENT
Substance No: 000000052114

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**Proper Shipping Name or
Technical Name:**

CHEMICAL UNDER PRESSURE, N.O.S. (FLUORINATED HYDROCARBON,
NITROGEN)

15. REGULATORY INFORMATION

Classification:

This material is hazardous according to Safe Work Australia; HAZARDOUS CHEMICAL.

Classification of the chemical:

Gases under pressure - Compressed Gas
Acute Inhalation Toxicity - Category 4
Skin Irritation - Category 2
Skin Sensitisation - Category 1
Eye Irritation - Category 2A
Respiratory Sensitisation - Category 1
Carcinogenicity - Category 2
Specific target organ toxicity (single exposure) - Category 3
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Hazard Statement(s):

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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.

Poisons Schedule (SUSMP): None allocated.

All the constituents of this material are listed on the Australian Inventory of Chemical Substances (AICS).

16. OTHER INFORMATION

Supplier Safety Data Sheet; 12/ 2017.

This safety data sheet has been prepared by Ixom Operations Pty Ltd (Toxicology & SDS Services).

Reason(s) for Issue:

Revised Primary SDS
Change in company details
Updated Formulation
Change in First Aid Measures
Change in Exposure Controls
Change in Physical Properties
Update in Toxicological Information
Update in Ecological Information
Change in Disposal requirements
Change to Transport Information

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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 shipped is subject to the terms and conditions of sale, a copy of which is available upon request.