MENDHAM
CONSULTANTS
Safety, Risk and Reliability Engineers

Goterra Pty Ltd

SEPP 33 Assessment

Goterra
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Goterra Pty Ltd

SEPP 33 Assessment

Goterra

Prepared by

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Quality Management

Issue / Revision	Date	Remarks	Prepared By	Reviewed By	Signature
Issue 1 / Rev 0	19th Dec 2023		Frank Mendham PhD RPEQ	Hugo Mak BEng	

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Executive Summary

A SEPP 33 Screening Test assessment was undertaken for Goterra Pty Ltd (the Client) by Mendham Consultants (MC) to determine whether their development is considered potentially hazardous industry leading to the requirement to provide a Preliminary Hazard Analysis.

The SEPP 33 screening test guideline addresses the storage and transportation to and from site of dangerous goods.

Transportation of Dangerous Goods SEPP33 Screening Test Result:

The findings of the SEPP 33 Screening Test indicated that an insignificant volume of dangerous goods are transported to and from site. Other material involved in transport is considered non-hazardous (Refer attached SDS).

It is recommended that this development is not classified as potentially hazardous industry, as the results of the SEPP33 Transportation Threshold screening test indicates.

Storage of Dangerous Goods SEPP33 Screening Test Result:

SEPP33 Screening Tests were applied to the proposed dangerous goods storage quantities at the Goterra facility.

The SEPP 33 Screening Tests indicated that an insignificant volume of dangerous goods is used/stored on site.

It is recommended that this development is not classified as potentially hazardous industry, as the results of the SEPP33 Storage Threshold screening test indicates.

Preliminary Hazard Analysis (PHA) Requirement:

The results of the SEPP 33 Screening Tests indicate that a PHA is not required as the development is not potentially hazardous and the development should be permitted.

1.0 Background

1.1 Goterra

Goterra Pty Ltd proposes to develop a food organics waste processing facility at an existing warehouse in Wetherill Park, located 25km west of the Sydney CBD.

The facility will process up to 6,000T of food organics per annum and convert it to protein and fertiliser products for the agriculture industry.

The facility will consist of nine of Goterra's MIBS (Modular Infrastructure for Biological Services), which are a robotic environment for black soldier fly larvae to consume the food waste. The facility will include associated waste handling equipment, storage tanks for the waste, and processing equipment, including a microwave to convert black soldier fly larvae into cooked protein.

The facility will be serviced by road connections through Newton Rd to the Horseley Dr in Wetherill Park.

There will be limited hazardous goods stored on-site, in the form of cleaning and pest control equipment which will be held in suitable containers in accordance with Safety Data Sheet advice.

Figure 1 provides a graphical outline of the proposed facility.

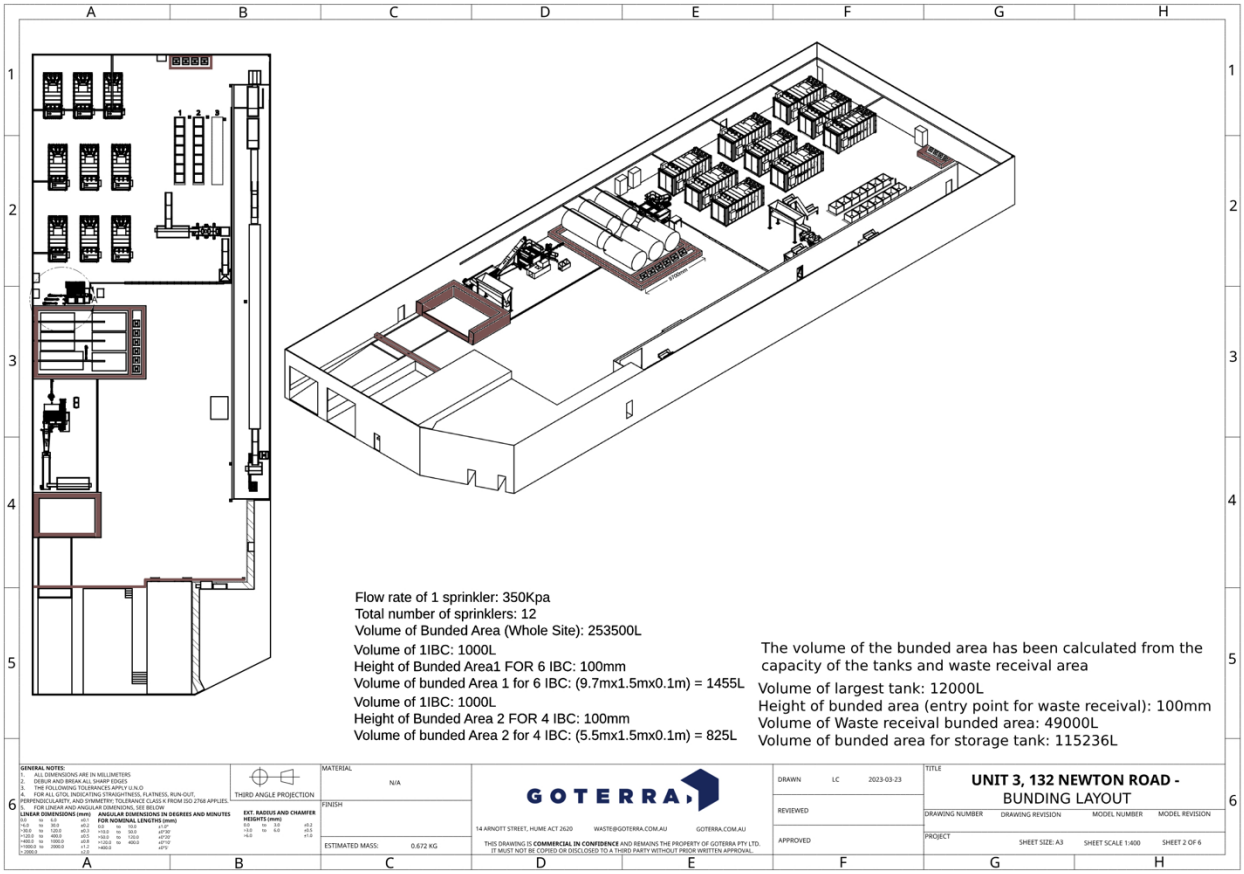


Figure 1: Proposed Goterra Facility

2.0 SEPP33 Requirements

Subject to the requirements of the State Environmental Planning Policy (Resilience and Hazards) 2021, the guideline document State Environmental Planning Policy No.33 (SEPP33) 'Hazardous and Offensive Development' [1] sets out to determine whether a development is potentially hazardous as follows: -

1. Amend the definitions of hazardous and offensive industries where used in environmental planning instruments; and
2. Render ineffective a provision of any environmental planning instrument that prohibits development for the purpose of a storage facility on the ground that the facility is hazardous or offensive if it is not a hazardous or offensive storage establishment as defined in the policy; and
3. Ensure that in determining whether a development is a hazardous or offensive industry, any measures proposed to be employed to reduce the impact of the development are taken into account; and
4. Ensure that in considering any application to carry out potentially hazardous or offensive development, the consent authority has sufficient information to assess whether the development is hazardous or offensive and to impose conditions to reduce or minimise any adverse impact.

2.1 Objectives

The objectives of the subject assessment are as follows: -

1. Implement a Screening Test and the potentially required Preliminary Hazard Analysis (PHA) in accordance with:
    a. Hazardous Industry Planning Advisory Paper (HIPAP) No.6 – Hazard Analysis [2]; and
    b. Assessment Guideline – Multi Level Risk Assessment [3] .
2. Assess the PHA results using the criteria in HIPAP No. 4 – Risk Criteria for Land Use Planning [4];
3. The demonstration of regulatory compliance with:
    a. Work Health and Safety Regulation (NSW) 2017 [5]; and
    b. NSW Planning and Assessment Regulation 1979 [6] .

2.2 Consent Authority Consideration

The Consent Authority must decide whether a SEPP33 [1] applies to a development proposal, however for the purposes of SEPP 33 [1], a hazardous storage establishment is included in the definition of potentially hazardous industry. Similarly, an offensive storage establishment is included in the definition of potentially offensive industry.

This means that a storage development is considered 'industry' for the purposes of applying the SEPP 33 tests, even if the development is non-industrial. An example may be a storage facility associated with the distribution of flammable, corrosive or toxic substances for retail or wholesale purposes.

SEPP 33 [1] will apply if a proposal for an industrial development requires consent, and it is either potentially hazardous industry or potentially offensive industry (or both). Figure 2 indicates the procedure for determining if SEPP 33 [1] applies, while Figure 3 outlines the associated assessment process for a typical Part 4 local development.

2.3 Work Scope

Mendham Consultants (MC) have been engaged by Goterra (the Client) to undertake a SEPP33 [1] assessment for the proposed development.

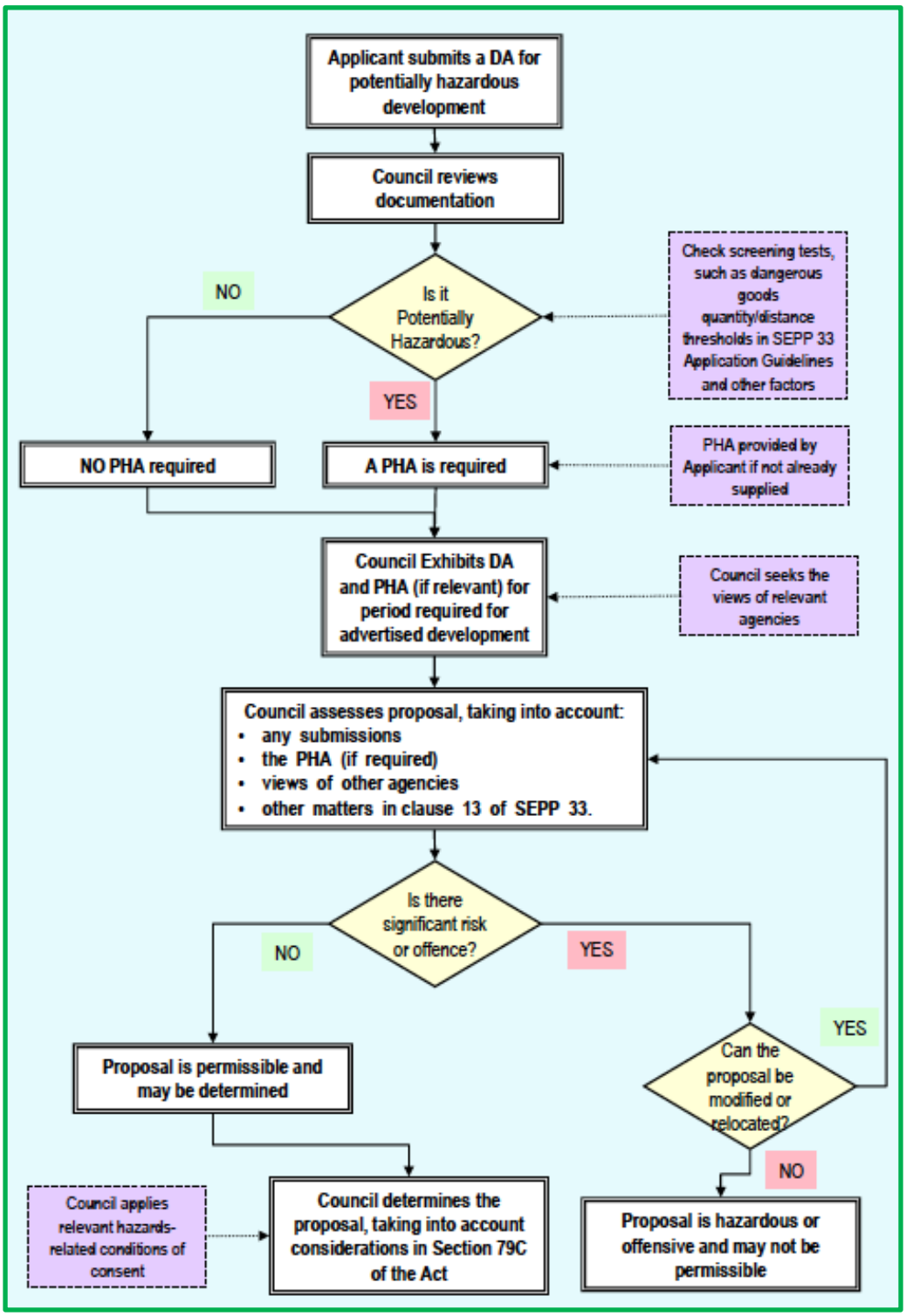


Figure 2: Procedure for Determining if SEPP33 Applies

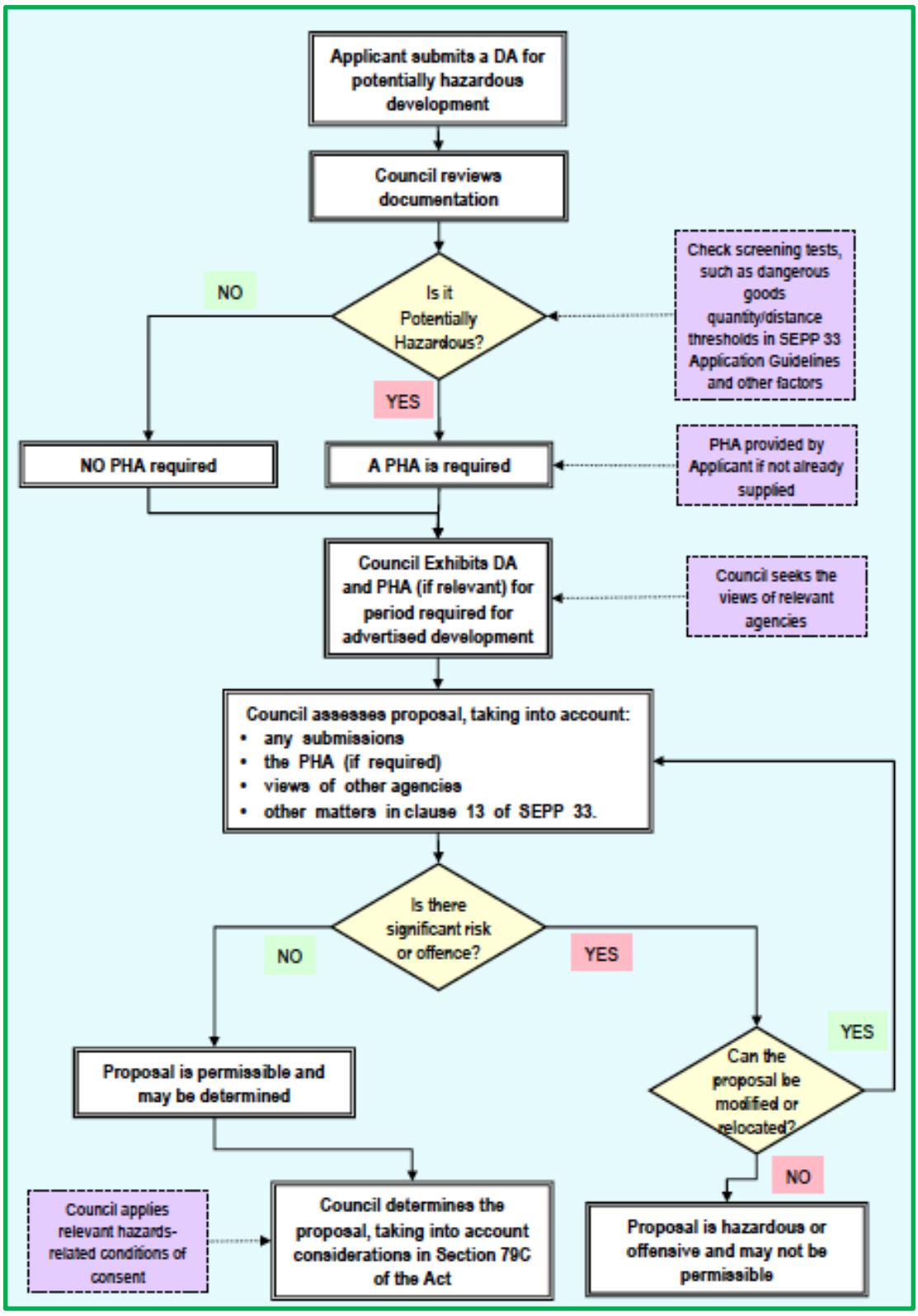


Figure 3: The associated assessment process for a typical Part 4 local development

3.0 SEPP33 SCREENING TEST

3.1 Background

The Screening Test step has been undertaken in accordance with the requirements of SEPP33 [1] to determine whether the proposed development is or is not, potentially hazardous.

The Screening Test required the following information: -

- A list of all the hazardous materials used in the proposed development and the quantity of each present;
- Dangerous goods classification for each material, including subsidiary class(es);
- The mode of storage used (that is, bulk or packages/containers) and the maximum quantity stored or held on site;
- The distance of the stored material from the site boundary for any of the materials in dangerous goods classes 1.1, 2.1 and 3; and for materials stored in underground tanks, the distance is measured from the above ground filling/dispensing point.
- The average number of annual and weekly road movements of hazardous material to and from the facility, and the typical quantity in each load.

3.2 DG Transportation Assessment

Dangerous Goods (Hazardous Chemicals) are not transported in Bulk, however, are transported as retail packages.

The following extract from the SEPP33 Guideline [1] details Transportation Screening Thresholds (Refer Table 2): -

Table 1: Transportation Screening Thresholds

	Vehicle Movements		**Minimum quantity***	
	Cumulative	Peak	**per load (tonne)**	
Class	Annual *or*	Weekly	Bulk	Packages
1	see note	see note	see note	
2.1	>500	>30	2	5
2.3	>100	>6	1	2
3PGI	>500	>30	1	1
3PGII	>750	>45	3	10
3PGIII	>1000	>60	10	no limit
4.1	>200	>12	1	2
4.2	>100	>3	2	5
4.3	>200	>12	5	10
5	>500	>30	2	5
6.1	all	all	1	3
6.2	see note	see note	see note	
7	see note	see note	see note	
8	>500	>30	2	5
9	>1000	>60	no limit	

3.2.1 Transported Dangerous Goods Screening Test

Table 2 Summarises actual Transported Dangerous.

Table 2: Transported Dangerous Goods Screening Test

Class	Minimum Quantity per Load (Tonne) Packages	Cumulative Annual	Peak Weekly	Approx. Vehicle Movements Per **Week**	Vehicle Movements Exceeding Minimum Quantity	Assessment Comments
2.1	0.0014	0.0168	N/A (one delivery per month by courier)	N/A (one delivery per month by courier	Nil	Small volumes of aerosol only transported per vehicle - Does not exceed SEPP33 Transportation Threshold
3PGII	0.000125	0.0015	N/A (one delivery per month by courier)	N/A (one delivery per month by courier	Nil	Small volumes transported per vehicle - Does not exceed SEPP33 Transportation Threshold
3PGIII	Nil	Nil	Nil	Nil	Nil	Not Applicable
4.1	Nil	Nil	Nil	Nil	Nil	Not Applicable
5	Nil	Nil	Nil	Nil	Nil	Not Applicable
8	0.002 (i.e. 20 litres)	0.240 (i.e. 240 litres)	N/A (one delivery per month by courier)	N/A (one delivery per month by courier	Nil	Small retail volumes transported per vehicle - Does not exceed SEPP33 Transportation Threshold

3.3 DG Storage Assessment

The SEPP33 [1] Storage Screening Test involved an assessment of hazardous chemicals proposed to be stored and their collation in relation to their dangerous goods classification for each material, including subsidiary risks.

The majority of dangerous goods screening test involves the assessment against a stipulated threshold quantity stored, however flammable and potentially explosive dangerous goods (Classes 1.1, 2.1 and 3) are assessed against a 'Quantity Stored versus Distance to Boundary' function.

Storage of dangerous goods at the proposed facility will be consistent with Safety Data Sheet requirements.

3.3.1 SEPP33 Screening Assessment Methods

The following extract from the SEPP33 Guideline [1] details Screening Threshold Assessment Methods for Stored Dangerous Goods (Refer Table 3):-

Table 3: SEPP 33 Stored Dangerous Goods Assessment Methods (Referenced to SEPP33 Figures and Graphs)

Table 1: Screening Method to be Used

Class	Method to Use/Minimum Quantity
1.1	Use graph at Figure 5 if greater than 100 kg
1.2-1.3	Table 3
2.1 — pressurised (excluding LPG)	Figure 6 graph if greater than 100 kg
2.1 — liquefied (pressure) (excluding LPG)	Figure 7 graph if greater than 500 kg
LPG (above ground)	table 3
LPG (underground)	table 3
2.3	table 3
3PGI	Figure 8 graph if greater than 2 tonne
3PGII	Figure 9 graph if greater than 5 tonne
3PGIII	Figure 9 graph if greater than 5 tonne
4	table 3
5	table 3
6	table 3
7	table 3
8	table 3

Note: *Classes 1.4, 1.5, 1.6, 2.2, 7 and 9 are excluded from the risk screening. Classes used are those referred to in the Dangerous Goods Code and are explained in appendix 6.*

If Table 1 indicates that a graph is to be used: If the quantity is below the minimum quantity in Table 1, then it is not potentially hazardous and there is no need to use the graph.

Using the appropriate graph, plot the group total quantity against the distance from the nearest boundary. If the point lies below the screening threshold line, the proposed development is potentially hazardous.

For class 3 materials only, if storage is underground, the capacity of the tank should be divided by five prior to assessing it against the screening threshold.

If Table 1 indicates that Table 3 is to be used: If the quantity is in excess of the quantity listed in Table 3, the development is potentially hazardous.

Repeat this procedure until all hazardous materials have been assessed.

Consider Transportation Issues

The proposed development may be potentially hazardous if the number of generated traffic movements (for significant quantities of hazardous materials entering or leaving the site) is above the annual or weekly cumulative vehicle movements shown in Table 2.

If the proposal is found to be potentially hazardous with respect to transportation, a route evaluation study should be completed in accordance with the Department of Planning's *HIPAP 11: Route Selection.*

3.3.2 SEPP33 Screening Assessment Threshold Quantities

Table 4 lists the General Screening Threshold Quantities for non-flammable / non-explosive dangerous goods. Note that where flammable and /or explosive dangerous goods are stored am assessment that compares the quantity stored with distance to the nearest boundary is required.

Table 4: General Screening Threshold Quantities

Table 3: General Screening Threshold Quantities

Class	Screening Threshold	Description
1.2	5 tonne	or are located within 100 m of a residential area
1.3	10 tonne	or are located within 100 m of a residential area
2.1	(LPG only — not including automotive retail outlets[1])	
	10 tonne or16 m^3	if stored above ground
	40 tonne or 64 m^3	if stored underground or mounded
2.3	5 tonne	anhydrous ammonia, kept in the same manner as for liquefied flammable gases and not kept for sale
	1 tonne	chlorine and sulfur dioxide stored as liquefied gas in containers <100 kg
	2.5 tonne	chlorine and sulphur dioxide stored as liquefied gas in containers >100 kg
	100 kg	liquefied gas kept in or on premises
	100 kg	other poisonous gases
4.1	5 tonne	
4.2	1 tonne	
4.3	1 tonne	
5.1	25 tonne	ammonium nitrate — high density fertiliser grade, kept on land zoned rural where rural industry is carried out, if the depot is at least 50 metres from the site boundary
	5 tonne	ammonium nitrate — elsewhere
	2.5 tonne	dry pool chlorine — if at a dedicated pool supply shop, in containers <30 kg
	1 tonne	dry pool chlorine — if at a dedicated pool supply shop, in containers >30 kg
	5 tonne	any other class 5.1
5.2	10 tonne	
6.1	0.5 tonne	packing group I
	2.5 tonne	packing groups II and III
6.2	0.5 tonne	includes clinical waste
7	all	should demonstrate compliance with Australian codes
8	5 tonne	packing group I
	25 tonne	packing group II
	50 tonne	packing group III

Note: *The classes used are those referred to in the Australian Dangerous Goods Code and are explained in Appendix 7.*

3.3.3 Stored Dangerous Goods Screening Test (Non Flammables)

Table 5 Summarises the proposed stored dangerous goods compared with the threshold quantities for the proposed Goterra development. (NOTE: Where Class 2.1 (non LPG e.g. Aerosols) and Class 3 exceed a minimum quantity threshold they must be separately assessed using Distance vs Quantity Stored - Graphs).

Table 5 SEPP33 - Proposed Stored Dangerous Goods - Threshold Assessment

Class	Screening Threshold (Tonnes)	Description	Quantity Stored (Tonnes)	Comments
2.1	10 (16m^3)	LPG Stored Above Ground	Nil	N/A
2.1	0.1	Pressurised gas excluding LPG	Nil	N/A
2.1	0.5	Liquefied (e.g. Aerosols) Refer to SEPP33 Graph 7 if exceeds Threshold	0.0014	Result: Below Screening Threshold
3 PGII	5	Refer to SEPP33 Graph 9 if exceeds Threshold	0.000125	Result: Below Screening Threshold
3 PGIII	5	Refer to SEPP33 Graph 9 if exceeds Threshold	Nil	N/A
4.1	5	-	Nil	N/A
5.1	5	Any other 5.1	Nil	N/A
8	25	PGII	Nil	N/A
8	50	PGIII	0.002	Below Screening Threshold

3.3.4 Stored Dangerous Goods Screening Test (Flammables)

Where hazardous chemicals of Class 2.1 (Pressurised excluding LPG), 2.1 (Liquefied Other – e.g. aerosols), or Class 3 Flammable liquids, the quantity must be plotted against distance from the nearest site boundary using the relevant Figure.

Figure 3 of this report includes the relevant graphs from SEPP33 [1]. Refer Figure 3.

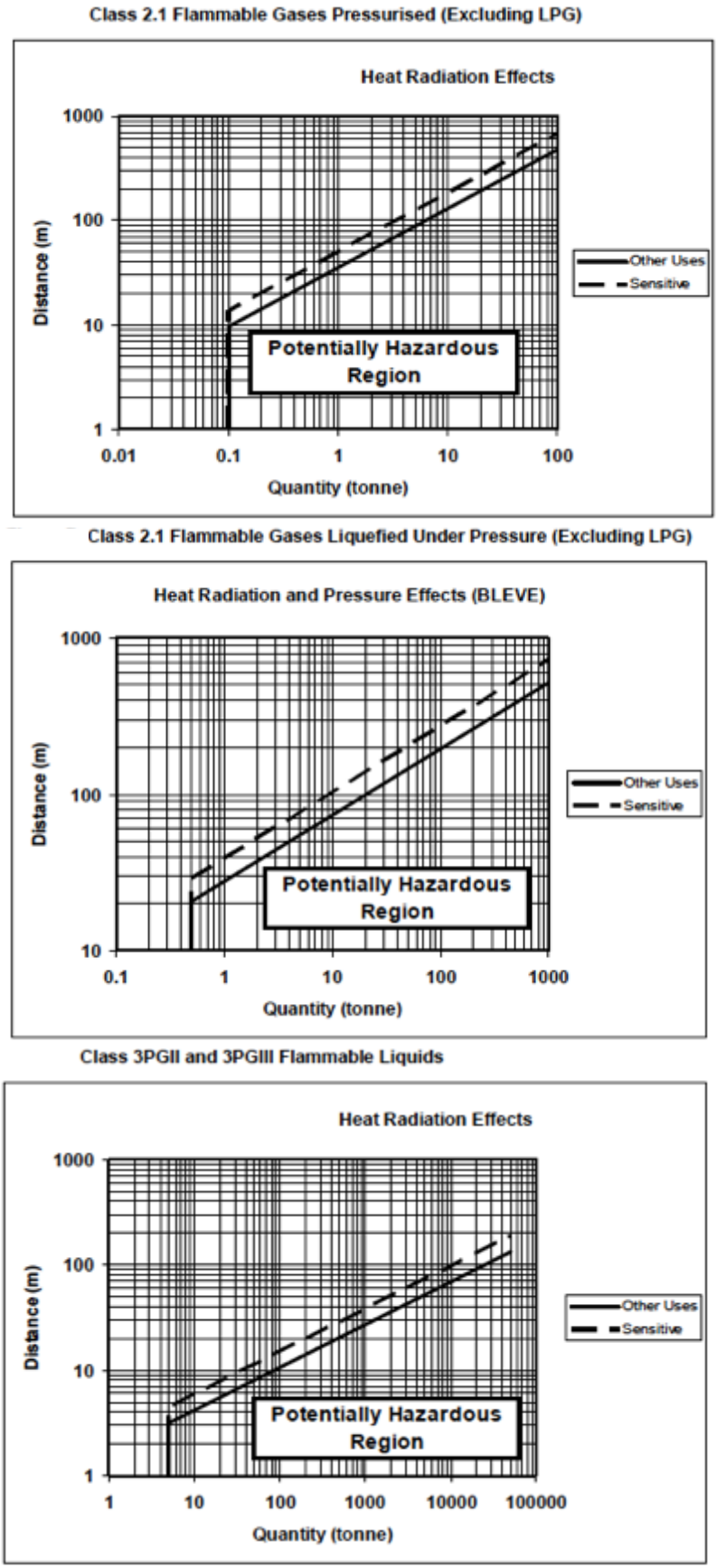


Figure 3: Applicable SEPP33 Graphs

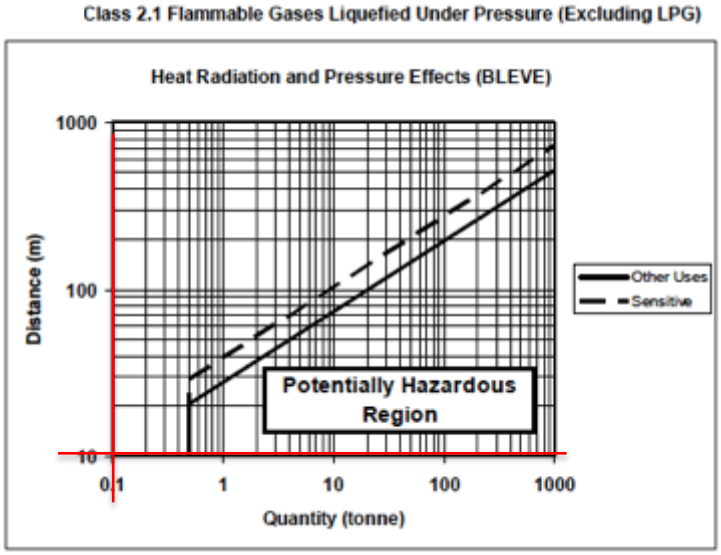
3.3.5 Assessment of Class 2.1 Liquified Gas (e.g. Aerosols)

The nearest boundary distance to the storage of Class 2.1 Liquified Gas is approximately 6m (Worst Case Option). [Refer Drawings]

The neighbouring use is industrial so the 'Sensitive' curve in the Class 2.1 Flammable Gases Pressurised (Excluding LPG) is disregarded, however the 'solid line' curve is applied.

The quantity of flammable substance stored is 0.0014 Tonnes Gross, so approximately 0.0007 Tonnes of LPG propellant Nett.

The 'Quantity versus Distance' curves intersects at approximately 0m for 0.0014 Tonnes, indicating that heat radiation effects from the proposed stored quantity at 6m are likely to be insignificant, so SEPP33 [1] does not apply.



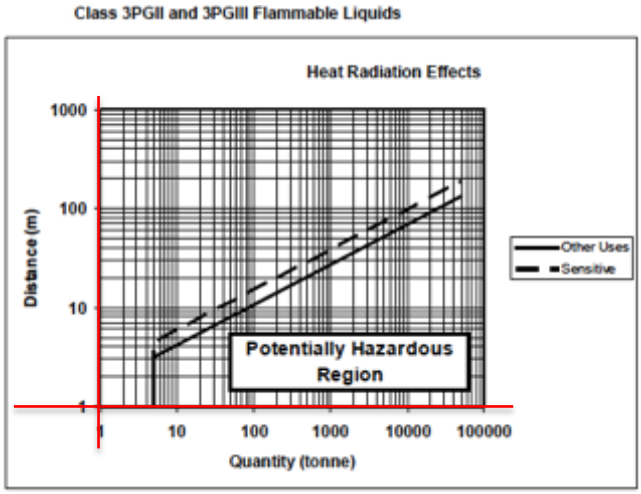
3.3.6 Assessment of Class 3 PGII and Class 3 PGIII Flammable Liquids (Stored together)

The nearest boundary distance to the storage of Class 3 PGII is 6m (Worst Case Option). [Refer Drawings]

The neighbouring use is industrial so the 'Sensitive' curve in the Class 3 PGII Flammable Liquids is disregarded, however the 'solid line' curve is applied.

The quantity of flammable substance stored is 0.000125 Tonnes of Class 3 PGII.

The Quantity versus Distance curves intersects at approximately 0m for 0.000125 Tonnes, indicating that heat radiation effects from the proposed stored quantity at 6m are insignificant and less than the screening threshold level, so SEPP33 does not apply.



3.4 SEPP 33 Screening Test Conclusions

3.4.1 DG Transportation Screening Test Conclusion

The findings of the SEPP 33 Screening Test indicated that an insignificant volume of dangerous goods are transported to and from site. Other material involved in transport is considered non-hazardous (Refer attached SDS).

It is recommended that this development is not classified as potentially hazardous industry, as the results of the SEPP33 Transportation Threshold screening test indicates.

3.4.2 DG Storage Screening Test Conclusion

SEPP33 Screening Tests were applied to the proposed dangerous goods storage quantities at the Goterra facility.

The SEPP 33 Screening Tests indicated that an insignificant volume of dangerous goods is used/stored on site.

It is recommended that this development is not classified as potentially hazardous industry, as the results of the SEPP33 Storage Threshold screening test indicates.

4.0 References

[1] State Environmental Planning Policy No.33 (SEPP33) 'Hazardous and Offensive Development', 2011 NSW Dept Planning, Sydney, NSW.

[2] Hazardous Industry Planning Advisory Paper (HIPAP) No.6 – Hazard Analysis, NSW Dept Planning, Sydney, NSW.

[3] Assessment Guideline – Multi Level Risk Assessment, NSW Dept Planning, Sydney, NSW.

[4] HIPAP No. 4 – Risk Criteria for Land Use Planning, 2011, NSW Dept Planning, Sydney, NSW.

[5] Work Health and Safety Regulation (NSW) 2017, SafeWork NSW, Sydney, NSW

[6] NSW Planning and Assessment Regulation 1979, NSW Government, Sydney NSW

6.0 Appendix 1: Safety Data Sheets

Safety Data Sheet for Insect Frass

SECTION 1: IDENTIFICATION	
PRODUCT NAME:	**Goterra Frass**
SDS NUMBER:	**N/A**
SYNONYMS/OTHER MEANS OF IDENTIFICATION:	**Black Soldier Fly Frass**
INTENDED USE:	**Fertilizer Ingredient, Soil Enricher**
CAS Number:	Product does not have a CAS or EC number.
MANUFACTURER: *(company name)*	**Goterra (Pty LTD)**
EMERGENCY HEALTH AND SAFETY NUMBER:	Michael Brewer
SDS INFORMATION:	PHONE: **+61 426613512**
	E-MAIL: **info@Goterra.au**
	URL: **https://goterra.au/**
SDS DATE OF PREPARATION:	**Dec 2022**

SECTION 2: HAZARD(S) IDENTIFICATION

CLASSIFICATION: ORGANIC MATERIALS AND CONTAINS LIVING MICROORGANISMS AND MINERALS.

LABEL ELEMENTS: N/A

SIGNAL WORD: N/A

HAZARD STATEMENT(S): MAY NOT BE INDUCED BY HUMANS AS A FOOD SOURCE.

HOLDING PERIOD OF 3 WEEKS ON ANY PASTURE APPLICATIONS FOR RUMINANTS

PRECAUTIONARY STATEMENT(S): INSECT FRASS HAS NO CHEMICAL INCLUSIONS IN THE MANUFACTURING PROCESS AND AS SUCH THE PRODUCT IS SUSCEPTIBLE TO MOISTURE INTAKE AND OVER EXTENDED PERIODS THIS COULD RESULT IN MOULD OCCURING ON THE PRODUCT.

EMERGENCY OVERVIEW: NO KNOWN EMERGENCY REQUIREMENTS FOR BOTH HUMAN OR ANIMALS

EXPLOSION HAZARD: INSECT FRASS IS GENERALLY CONSIDERED NOT HAZARDOUS. HAS NO KNOWN REACTIVE AGENTS.OXIDES OF CARBON AND NITROGEN, SMOKE AND POSSIBLE TOXIC FUMES

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

COMPONENT	CAS NO	CONCENTRATION
Organic Material	**(n/a)**	**N,P,K (4,1,2)**

SECTION 4: FIRST AID MEASURES

INHALATION: REMOVE PERSON FROM EXPOSURE. SEEK MEDICAL ATTENTION FOR ANY BREATHING DIFFICULTY. PROLONGED EXPOSURE PERIODS MAY HAVE IMMEDIATE OR DELAYED EFFECT TO IRRITATE, INFLAME OR SENSITISE THE NOSE, THROAT AND LUNGS, AND EXACERBATE PRE-EXISTING CONDITIONS SUCH AS ASTHMA AND BRONCHITIS

INGESTION: SWALLOWING THIS PRODUCT MAY CAUSE IMMEDIATE OR DELAYED ABDOMINAL DISCOMFORT AND POTENTIALLY INCREASE THE RISK OF GASTRO-INTESTINAL INFECTIONS.

RINSE THE MOUTH WITH WATER. IF SWALLOWED, DO NOT INDUCE VOMITING. GIVE A GLASS OF WATER TO DRINK. IF VOMITING OCCURS, GIVE FURTHER WATER. SEEK MEDICAL ADVICE.

SKIN CONTACT: WASH OFF WITH SOAP AND PLENTY OF WATER. IF SWELLING, REDNESS, BLISTERING OR IRRITATION OCCURS SEEK MEDICAL ASSISTANCE.

EYE CONTACT: FLUSH EYES WITH WATER. SEEK MEDICAL ATTENTION AS NEEDED.

SECTION 5: FIREFIGHTING MEASURES

HAZARDOUS COMBUSTION PRODUCTS: CARBON OXIDES, NITROGEN OXIDES.

SPECIAL FIREFIGHTING PROCEDURES: EXTINGUISH WITH WATER FOG, DRY CHEMICAL POWDERS OR FOAM. DO NOT USE STRONG STREAMS OF WATER OR DRY CHEMICAL IF DUST CAN BE DISPERSED INTO THE AIR. DUST PLACED IN SUSPENSION WITH AN IGNITION SOURCE PRESENT MAY FLASH OR EXPLODE.

UNUSUAL FIRE AND EXPLOSION HAZARDS: WEAR SELF-CONTAINED BREATHING APPARATUS FOR FIREFIGHTING IF NECESSARY.

SECTION 6: ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS :AVOID DUST FORMATION. AVOID BREATHING VAPOURS, MIST OR GAS. ENSURE ADEQUATE VENTILATION.

ENVIRONMENTAL:PICK UP AND ARRANGE DISPOSAL WITHOUT CREATING DUST. SWEEP UP AND SHOVED. KEEP IN SUITABLE, CLOSED CONTAINERS FOR DISPOSAL. IF CONTAMINATION OF SEWERS OR WATERWAYS HAS OCCURRED ADVISE LOCAL EMERGENCY SERVICES.

SECTION7: HANDLING AND STORAGE

PRODUCT SHOULD BE STORED IN COOL DRY PLACE. ONLY MOBILE IN SIGNIFICANT WATER AND WIND

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

RESPIRATORY PROTECTION: MAY CAUSE IRRITATION OF THE NASAL MEMBRANES OR THE UPPER RESPIRATORY TRACT.
VENTILATION: LOCAL EXHAUST: N/A

MECHANICAL (GENERAL): N/A IF NEEDED

INGESTION: SWALLOWING CAN CAUSE NAUSEA AND VOMITING AND AN IRRITANT TO THE ,GASTROINTESTINAL TRACT

PROTECTIVE GLOVES: USE OF PROTECTIVE GLOVES ARE PRESCRIBED DUE TO THE NATURAL CHEMICAL COMPOSITION OF THE PRODUCT. NO KNOWN ALLERGENS AFFECTING THE SKIN. WASH WITH SOAP AND WATER ONLY. SEEK MEDICAL ATTENTION IF SKIN IRRITATION OCCURS

EYE PROTECTION: SAFETY GLASSES / GOGGLES SUGGESTED IN DUSTY CONDITIONS

WORK/ HYGIENIC PRACTICES: GOOD PERSONAL HYGIENE PRACTICES SHOULD BE FOLLOWED. WASH HANDS AND FACE BEFORE EATING, DRINKING, ETC.
AVOID DUST ACCUMULATION AND CONTROL IGNITION SOURCES. WHERE APPROPRIATE, EMPLOY GROUNDING, VENTING, AND EXPLOSION RELIEF PROVISIONS IN ACCORDANCE WITH ACCEPTED ENGINEERING PRACTICES IN PROCESSES CAPABLE OF GENERATING DUST AND/OR STATIC ELECTRICITY. AVOID ACCUMULATION OF DUST ON SURFACES TO PREVENT SECONDARY DUST EXPLOSIONS. REFER TO APPLICABLE STANDARDS.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

FLASH POINT (METHOD): N/A
FLAMMABLE LIMITS: **LEL:** UNKNOWN **UEL:** UNKNOWN
AUTOIGNITION TEMPERATURE: UNKNOWN

APPEARANCE: A RICH BROWN HUMUS AND SOIL MATERIAL WITH SOME FINE PARTICLES AND DEAD INSECT LARVAE.
SOLID CONTENTS: 90 -100%
PH: 4.5 - 7.5
CHEMICAL COMPOSITION :

Goterra Black Soldier fly Frass					
Macro elements (%)		**Oligo elements (ppm)**		**General characteristics**	
N	4	CaO	2000-3000	OM	80-95%
P2O5	1	MgO	125-500	TOC	40-45
K2O	1.5	Fe	1900-2500	C/N	8-11
				Apparent Density	0,5 g/cm3
				Moisture content	35-40%
				Granulometry	<3mm

SECTION 10: STABILITY AND REACTIVITY

STABILITY: STABLE AT ROOM TEMPERATURE **:** **CONDITION TO AVOID:** N/A
STABLE: X
INCOMPATIBILITY (MATERIALS TO AVOID): NONE KNOWN
HAZARDOUS DECOMPOSITION OR BYPRODUCTS: NONE KNOWN

HAZARDOUS POLYMERIZATION: NOT KNOWN BUT MAY OCCUR**:** **CONDITION TO AVOID:** N/A **WILL NOT OCCUR:** X

SECTION 11: TOXICOLOGICAL INFORMATION

ROUTES OF ENTRY: **INHALATION:** UNLIKELY **SKIN:** X **EYES:** X **INGESTION:** X

CARCINOGENICITY: **NTP:** NO **ARC MONOGRAPHS:** NO **OSHA REGULATED:** NO

ACUTE: MAY BE MECHANICAL IRRITANT TO SKIN AND EYES.

CHRONIC: NO PROLONGED EFFECTS ARE KNOWN

SIGNS AND SYMPTOMS OF EXPOSURE: IRRITATION TO THE SKIN, EYES, NOSE OR THROAT MAY OCCUR. SOME PEOPLE MAY OCCASIONALLY EXPERIENCE COUGHING.

MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE: ALLERGIES AND RESPIRATORY AILMENTS.

SECTION 12: ECOLOGICAL INFORMATION: (NON-MANDATORY)

REGULATION RELATIVE TO MANURE MANAGEMENT TRANSPORT AND APPLICATION IS APPLIED HERE NOTING THERE IS NO CURRENT ECOLOGICAL RESTRICTIONS

SECTION 13: DISPOSAL CONSIDERATIONS: (NON-MANDATORY)

PURE ORGANIC MATTER AND CAN BE DISPOSED OF AT LANDFILL

SECTION 14: TRANSPORT INFORMATION: (NON-MANDATORY)

SECTION 15: REGULATORY INFORMATION: (NON-MANDATORY)

NON REGISTERED PRODUCT
REGULATION RELATIVE TO MANURE APPLICATION TO FARM LAND APPLIES. WHERE 3 WEEK WITHHOLDING AFTER APPLICATION ON PASTURE BEFORE RUMINANTS CAN GRAZE.

RECOMMEND 10 METRE BUFFER WHEN APPLYING CLOSE TO WATERWAYS

MANAGE RUNOFF AND LEACHING FROM STOCKPILED PRODUCT TO REDUCE CARRY OF THE ORGANIC MATERIAL INTO WATERWAYS.

SECTION 16: OTHER INFORMATION

Safety Data Sheet for Dried Black Soldier Fly Larvae

SECTION 1: IDENTIFICATION	
PRODUCT NAME:	**Insect Protein**
SDS NUMBER:	**N/A**
SYNONYMS/OTHER MEANS OF IDENTIFICATION:	**Dried Black Soldier Fly Larvae**
INTENDED USE:	FEED AND OTHER
MANUFACTURER: *(company name)*	**Goterra Pty Ltd**
EMERGENCY HEALTH AND SAFETY NUMBER:	**Michael Brewer**
SDS INFORMATION:	PHONE: **+61 426613512**
	E-MAIL: **info@Goterra.au**
	URL: **https://goterra.au/**
SDS DATE OF PREPARATION:	**Dec 2022**

SECTION 2: HAZARD(S) IDENTIFICATION

CLASSIFICATION: ORGANIC BIOMASS

LABEL ELEMENTS: N/A DUE TO FDA LABELING EXEMPTION

SIGNAL WORD: N/A DUE TO FDA LABELING EXEMPTION

HAZARD STATEMENT(S): MAY NOT BE INDUCED BY HUMANS AS A FOOD SOURCE. NO HARMFUL RESULTS HAVE SHOWN FROM THE INTAKE OF DRIED LARVAE IN HUMAN CONSUMPTION. THE PRODUCT IN ITS WHOLE DRIED FORM PRESENT NO EXPLOSIVE RISK.

PRECAUTIONARY STATEMENT(S): WHOLE DRIED LARVAE HAS NO CHEMICAL INCLUSIONS IN THE MANUFACTURING PROCESS AND AS SUCH THE PRODUCT IS SUSCEPTIBLE TO MOISTURE INTAKE AND OVER EXTENDED PERIODS THIS COULD RESULT IN MOULD OCCURING ON THE PRODUCT.
CHITIN INCLUSION. A POLYMERIZED SUGAR AND FUNDAMENTAL COMPONENT OF ARTHROPODS AND FUNGI, IS NOT COMMONLY DEEMED A POTENTIAL ALLERGEN BUT CAN CAUSE SENSITIZATION THROUGH FREQUENT EXPOSURE

EMERGENCY OVERVIEW: NO KNOWN EMERGENCY REQUIREMENTS FOR BOTH HUMAN OR ANIMALS. PHYSICAL CONTACT IF ALLERGIC TO CHITIN CAN CAUSE IRRITATION

EXPLOSION HAZARD: WHOLE DRIED LARVAE IS GENERALLY CONSIDERED NOT HAZARDOUS, BUT DUST GENERATED THROUGH
DOWNSTREAM ACTIVITIES THAT MAY REDUCE ITS PARTICLE SIZE (E.G., SHIPPING, HANDLING, TRANSFER TO BINS, ETC.) MAY CREATE A HAZARDOUS CONDITION. IF EXPOSED TO AN IGNITION SOURCE, FEED DUST MAY BURN. AIRBORNE DUST IN SUFFICIENT CONCENTRATIONS WHEN EXPOSED TO AN IGNITION SOURCE MAY FLASH OR, IN A CONFINED SITUATION, MAY FUEL AN EXPLOSION.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

COMPONENT	CAS RN	CONCENTRATION
WHOLE DRIED LARVAE	**(n/a)**	

SECTION 4: FIRST AID MEASURES

INHALATION: REMOVE PERSON FROM EXPOSURE. SEEK MEDICAL ATTENTION FOR ANY BREATHING DIFFICULTY.

INGESTION: IF SWALLOWED, GIVE SEVERAL GLASSES OF WATER TO DILUTE. SEEK MEDICAL ASSISTANCE IF ANY SIDE EFFECTS POST INGESTION.

SKIN CONTACT: WASH AFFECTED SKIN WITH SOAP AND WATER.

EYE CONTACT: FLUSH EYES WITH WATER. SEEK MEDICAL ATTENTION AS NEEDED.

SECTION 5: FIREFIGHTING MEASURES

HAZARDOUS COMBUSTION PRODUCTS: PRODUCT COULD SMOKE AROUND 180 DEGREES CELSIUS DUE TO INTERNAL OIL COMPOSITION

SPECIAL FIREFIGHTING PROCEDURES: EXTINGUISH WITH WATER FOG, DRY CHEMICAL POWDERS OR FOAM. DO NOT USE STRONG STREAMS OF WATER OR DRY CHEMICAL IF DUST CAN BE DISPERSED INTO THE AIR. DUST PLACED IN SUSPENSION WITH AN IGNITION SOURCE PRESENT MAY FLASH OR EXPLODE.

UNUSUAL FIRE AND EXPLOSION HAZARDS: EXPLOSION HAZARD MAY EXIST FOR COMBUSTIBLE DUSTS OF CERTAIN PARTICLE SIZE AND MOISTURE CONTENT WHEN SUSPENDED IN AIR AT CERTAIN CONCENTRATIONS AND SUBJECTED TO AN IGNITION SOURCE.

SECTION 6: ACCIDENTAL RELEASE MEASURES

CLEAN UP WITH SOFT BRISTLE BROOM(S) OR A VACUUM APPROVED FOR A CLASS II HAZARDOUS LOCATION. PARTICLES USUALLY FORMED IN LARGE FLAKES HOWEVER DUST DEPOSITS SHOULD BE MAINTAINED TO A MINIMUM ON SURFACES.AVOID DISPERSAL OF DUST IN THE AIR (I.E. CLEANING DUST SURFACES WITH COMPRESSED AIR IN THE PRESENCE OF IGNITION SOURCE SHOULD NOT BE ALLOWED)

SECTION7: HANDLING AND STORAGE

PRODUCT SHOULD BE STORED AT ROOM TEMPERATURE APPROX @ 24 Degrees C

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

RESPIRATORY PROTECTION: MAY CAUSE IRRITATION OF THE NASAL MEMBRANES OR THE UPPER RESPIRATORY TRACT IF DUST EXCEEDS NORMAL LIMITS.
VENTILATION: LOCAL EXHAUST: N/A IF NEEDED

MECHANICAL (GENERAL): N/A IF NEEDED

PROTECTIVE GLOVES: USE OF PROTECTIVE GLOVES ARE PRESCRIBED DUE TO THE OILY NATURE OF THE PRODUCT. NO KNOWN ALLERGENS AFFECTING THE SKIN. WASH WITH SOAP AND WATER ONLY. SEEK MEDICAL ATTENTION IF SKIN IRRITATION OCCURS

EYE PROTECTION: SAFETY GLASSES / GOGGLES SUGGESTED IN DUSTY CONDITIONS

WORK/ HYGIENIC PRACTICES: GOOD PERSONAL HYGIENE PRACTICES SHOULD BE FOLLOWED. WASH HANDS AND FACE BEFORE EATING, DRINKING, ETC.

AVOID DUST ACCUMULATION AND CONTROL IGNITION SOURCES. WHERE APPROPRIATE, EMPLOY GROUNDING, VENTING, AND EXPLOSION RELIEF PROVISIONS IN ACCORDANCE WITH ACCEPTED ENGINEERING PRACTICES IN PROCESSES CAPABLE OF GENERATING DUST AND/OR STATIC ELECTRICITY. AVOID ACCUMULATION OF DUST ON SURFACES TO PREVENT SECONDARY DUST EXPLOSIONS. REFER TO APPLICABLE STANDARDS.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

FLASH POINT (METHOD): N/A
FLAMMABLE LIMITS: **LEL:** UNKNOWN **UEL:** UNKNOWN
AUTOIGNITION TEMPERATURE: UNKNOWN

APPEARANCE: TAN TO DARK BROWN IN APPEARANCE WITH PERHAPS A SWEET / NUTTY ODOUR
SOLID CONTENTS: 90 -100%

SECTION 10: STABILITY AND REACTIVITY

STABILITY: STABLE AT ROOM TEMPERATURE **:** **CONDITION TO AVOID:** N/A
STABLE: X
INCOMPATIBILITY (MATERIALS TO AVOID): NONE KNOWN
HAZARDOUS DECOMPOSITION OR BYPRODUCTS: NONE KNOWN

HAZARDOUS POLYMERIZATION: NOT KNOWN BUT MAY OCCUR**:** **CONDITION TO AVOID:** N/A **WILL NOT OCCUR:** X

SECTION 11: TOXICOLOGICAL INFORMATION

ROUTES OF ENTRY: **INHALATION:** UNLIKELY **SKIN:** X **EYES:** X **INGESTION:** X

CARCINOGENICITY: **NTP:** NO **ARC MONOGRAPHS:** NO **OSHA REGULATED:** NO

ACUTE: MAY BE MECHANICAL IRRITANT TO SKIN AND EYES.

CHRONIC: NO PROLONGED EFFECTS ARE KNOWN

SIGNS AND SYMPTOMS OF EXPOSURE: IRRITATION TO THE SKIN, EYES, NOSE OR THROAT MAY OCCUR. SOME PEOPLE MAY OCCASIONALLY EXPERIENCE COUGHING.

MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE: ALLERGIES AND RESPIRATORY AILMENTS.

SECTION 12: ECOLOGICAL INFORMATION: (NON-MANDATORY)

SECTION 13: DISPOSAL CONSIDERATIONS: (NON-MANDATORY)

PURE ORGANIC MATTER AND CAN BE DISPOSED OF AT LANDFILL BUT PREFERRED DISPOSAL AS FERTILISER ENRICHMENT SUPPLEMENT

SECTION 14: TRANSPORT INFORMATION: (NON-MANDATORY)

SECTION 15: REGULATORY INFORMATION: (NON-MANDATORY)

Jurisdiction	Restricted Animal Material (RAM)	Prohibited Pig Feed (PPF)
National definitions	Restricted Animal Material is any material taken from a vertebrate animal, other than tallow, gelatine, milk products or oils.	Prohibited pig feed means material of mammalian origin, or any substance that has come in contact with this material unless otherwise specified.
QLD	vertebrate material unless otherwise specified – *Biosecurity Act 2014*	mammal or bird carcass unless otherwise specified (this is extended to poultry feed)– *Biosecurity Act 2014*
NSW	any part of a vertebrate or anything produced by a vertebrate unless otherwise specified - *Biosecurity Regulation 2017*	any part of a mammal or mammal product unless otherwise specified – *Biosecurity Regulation 2017*
VIC	any material, tissue or blood taken from an animal (other than a human), whether vertebrate or not unless otherwise specified – *Agricultural and Veterinary Chemicals (Control of Use)(Ruminant Feed) Regulations 2015*	any material originating from a mammal or that has been in direct contact with material originating from a mammal, to any pig unless otherwise specified - *Livestock Disease Control Act 1994*
TAS	an animal product, or meal made from an animal product, derived from a bird, mammal or fish unless otherwise specified - *Animal Health Act 1995*	any material of placental mammal origin unless otherwise specified - *Animal Health Regulations 2016*
SA	wholly or partly from a vertebrate unless otherwise specified - *Livestock Act 1997 and Livestock Regulations 2013*	material derived wholly or partly from a vertebrate unless otherwise specified - *South Australian Livestock Regulations 2013*
WA	any material that consists of or contains matter from an animal - *Biosecurity and Agriculture Management (Agriculture Standards) Regulations 2013*	contains any material that consists of or contains matter from a mammal - *Biosecurity and Agriculture Management (Agriculture Standards) Regulations 2013*
ACT	fishmeal, or meal derived from poultry tissue or mammalian tissue or meal of mammalian origin unless otherwise specified - *Animal Diseases Act 2005*	material of mammalian origin, or any substance that has come in contact with this material unless otherwise specified - *Animal Diseases Act 2005*
NT	material derived from a mammal, bird or fish but does not include the following unless otherwise specified - *Livestock Regulations 2015*	originating from a placental mammal or poultry (mammalian or poultry material) unless otherwise specified- *Livestock Regulations 2015*

SECTION 16: OTHER INFORMATION

DRIED LARVAE OF THE BLACK SOLDIER FLY, *HERMETIA ILLUCENS*, WITH OR WITHOUT MECHANICAL EXTRACTION OF PART OF THE OIL, THAT HAS BEEN RAISED ON A FEEDSTOCK COMPOSED EXCLUSIVELY OF APPROVED FEED MATERIALS.

Safety Data Sheet

1 – Product Identifier & Identity for the Chemical

Manufacturer: **WD-40 Company Australia Pty Ltd** **Address:** **41 Rawson Street (Level 2, Suite 23) Epping NSW, 2121, Australia** **Telephone:** **Information:** +61 2 9868 2200 **Emergency only:** 1800 862 115 **Poisons Information Centre:** **Australia:** 13 11 26 **New Zealand:** 0800 764 766 **New Zealand Contact Details:** **Name:** **Eproducts New Zealand Limited** **Address:** **7D Orbit Drive Albany New Zealand** **Telephone:** **Information:** 09 916 6750 **Emergency only:** 0800 425 459	**Product Name: WD-40 Specialist Fast Acting Citrus Degreaser** **Chemical Name:** Mixture **Product Use:** Cleaner and degreaser **Restriction on Use:** None Identified **SDS Date Of Preparation:** 30 June 2021 **This SDS applies to unit codes:** 21003

2 – Hazards Identification

Classification of the Hazardous Chemical (in accordance with WHS Regulation)

Health	Environmental	Physical
Eye Irritant Category 2 Skin Irritant Category 2 Skin Sensitization Category 1B	Aquatic Acute Toxicity Category 2 Aquatic Chronic Toxicity Category 2	Aerosol Category 1

Label Elements

Contains: 2-Butoxyethanol, D-limonene

Danger!
H222 Extremely flammable aerosol.
H229 Pressurized container: may burst if heated.
H315 Causes skin irritation.
H317 May cause an allergic skin reaction.
H319 Causes serious eye irritation.
H411 Toxic to aquatic life with long lasting effects.

Prevention
P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P211 Do not spray on an open flame or other ignition source.
P251 Do not pierce or burn, even after use.
P261 Avoid breathing mist or vapors.
P264 Wash thoroughly after handling.
P272 Contaminated work clothing should not be allowed out of the workplace.
P273 Avoid release to the environment.
P280 Wear protective gloves and eye protection.
Response
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 attention.
P302+P352 IF ON SKIN: Wash with plenty of soap and water.
P333+P313 If skin irritation or rash occurs: Get medical attention.
P362+P364 Take off contaminated clothing and wash before reuse
P391 Collect spillage.
Storage
P410+P412 Protect from sunlight. Do not expose to temperatures exceeding 50°C/122°F.
Disposal
P501 Dispose of contents and container in accordance with local and national regulations.

Other Hazards that do not Result in Classification: None known.

3 - Composition/Information on Ingredients

Ingredient	CAS #	Weight Percent	Substance Classification
Water	7732-18-5	70-80%	Not Hazardous
2- Butoxyethanol	111-76-2	<10%	Acute Tox. Cat 4 (H302) Acute Tox. Cat 4 (H312) Acute Tox. Cat 4 (H332) Skin Irrit. Cat 2 (H315) Eye Irrit. Cat 2 (H319)
D-limonene	5989-27-5	<10%	Flam. Liq. Cat 3 (H226) Skin Irrit. Cat 2 (H315) Skin Sens. Cat 1B (H317) Asp. Tox. Cat 1 (H304) Aquatic Acute Cat 1 (H400) Aquatic Chronic Cat 1 (H410)
Propellant (propane, n-butane)	74-98-6 / 106-97-8	<10%	Flam. Gas Cat 1 (H220) Press. Gas (H280)
Surfactant	Proprietary	<0.5%	Acute Tox. Cat 4 (H302) Eye Dam. Cat 1 (H318) Aquatic Acute Cat 2 (H401) Aquatic Chronic Cat 2 (H411)

See Section 16 for full text of GHS Classification and H phrases

4 – First Aid Measures

Ingestion (Swallowed): Rinse out mouth and give sips of water. Do not induce vomiting unless directed to do so by medical personnel. Call a Poisons Information Center (phone 13 11 26 from anywhere in Australia or 0800 764 766 in New Zealand).
Eye Contact: Flush thoroughly with water. Remove contact lenses if present after the first 5 minutes and continue flushing for several more minutes. Get medical attention if irritation persists.
Skin Contact: Wash with soap and water. If irritation develops or rash develops and persists, get medical attention.
Inhalation (Breathing): If irritation is experienced, move to fresh air. Get medical attention if irritation or other symptoms develop and persist.
Most Important Symptoms: May cause eye and skin irritation. Skin contact may cause an allergic skin reaction. If inhaled, may cause respiratory irritation with headache, dizziness, nausea and other symptoms of central nervous system depression. Ingestion of the liquid may cause gastrointestinal effects with irritation, nausea, vomiting, and diarrhea.
Indication of Immediate Medical Attention and Special Treatment, if Needed: Immediate medical attention is not normally required.

5 – Fire Fighting Measures

Suitable Extinguishing Media: Use water fog, dry chemical, carbon dioxide or foam. Cool fire exposed containers with water.
Specific Hazards Arising from the Chemical: Extremely flammable aerosol. Contents under pressure. Keep away from ignition source and open fire. Exposure of containers to extreme heat and flames can cause them to rupture often with violent force. A vapor and air mixture can create an explosion hazard in confined spaces.
Special Protective Equipment and Precautions for Fire-Fighters: Firefighters should always wear positive pressure self-contained breathing apparatus and full protective clothing. Use shielding to protect against bursting containers. Cool fire-exposed containers with water.

6 – Accidental Release Measures

Personal Precautions, Protective Equipment and Emergency Procedures: Eliminate all sources of ignition and ventilate area. Wear appropriate protective clothing (see Section 8).
Environmental Precautions: Avoid releases to the environment. Report spills to authorities as required.
Methods and Materials for Containment/Cleanup: Leaking cans should be placed in a plastic bag or open pail until the pressure has dissipated. Contain and collect liquid with an inert absorbent and place in a container for disposal. Clean spill area thoroughly.

7 – Handling and Storage

Precautions for Safe Handling: Avoid contact with eyes and skin. Avoid breathing vapors or aerosols. Intentional misuse by deliberately concentrating vapors and inhaling can be harmful or fatal. Use only with adequate ventilation. Keep away from heat, sparks, pilot lights, hot surfaces and open flames. Unplug electrical tools, motors and appliances before spraying or bringing the can near any source of electricity. Electricity can burn a hole in the can and cause contents to burst into flames. To avoid serious burn injury, do not let the can touch battery terminals, electrical connections on motors or appliances or any other source of electricity. Wash thoroughly with soap and water after handling. Keep containers closed when not in use. Keep out of the reach of children. Do not puncture, crush or incinerate containers, even when empty.
Conditions for Safe Storage, including any incompatibilities: Store in a cool, dry, ventilated area away from incompatible materials. Protect from physical damage. Do not store in direct sunlight, near open flames or above temperatures greater than 50°C.

8 – Exposure Controls /Personal Protection

Chemical	Occupational Exposure Limits	Biological Limit Value
Water	None Established	None Established

2- Butoxyethanol	20 ppm TWA, 50 ppm STEL AU OEL 25 ppm TWA NZ OEL 20 ppm TWA ACGIH TLV	Butoxyacetic acid (BAA) in urine, End of shift, 200 mg/g creatinine
D-limonene	5 ppm TWA, 20 ppm STEL (15 min average value) DFG MAK (skin)	None Established
Propane	Asphyxiant – See Chapter 10 of Safe Work Australia Exposure Standard NZ-WESes: Simple Asphyxiant-may present an explosion hazard	None Established
n-Butane	800 ppm TWA AU OEL 800 ppm TWA NZ OEL 1000 ppm STEL ACGIH TLV (as Butane, all isomers)	None Established
Surfactant	None Established	None Established

The Following Controls are Recommended for Normal Consumer Use of this Product
Appropriate Engineering Controls: Use in a well-ventilated area.
Personal Protection:
Eye Protection: Avoid eye contact. Always spray product away from your face.
Skin Protection: Avoid prolonged or repeated skin contact. Chemical resistant gloves recommended for operations where skin contact is likely.
Respiratory Protection: None needed for normal use with adequate ventilation.

For Bulk Processing or Workplace Use the Following Controls are Recommended
Appropriate Engineering Controls: Use adequate general and local exhaust ventilation to maintain exposure levels below that occupational exposure limits.
Personal Protection:
Eye Protection: Safety goggles recommended where eye contact is possible.
Skin Protection: Wear chemical resistant gloves.
Respiratory Protection: None required if ventilation is adequate. If the occupational exposure limits are exceeded, wear an approved respirator. Respirator selection and use should be based on contaminant type, form and concentration. Follow applicable regulations and good Industrial Hygiene practice.
Work/Hygiene Practices: Eye wash facilities should be available. Wash hands after handling.
Other Protective Equipment: None required.

9 – Physical and Chemical Properties

Appearance and Odor:	Aerosol spray. Light amber liquid with citrus odor.	Partition Coefficient of n-octanol/water:	Not determined
Odor Threshold:	Not determined	Auto-ignition temperature:	Not determined
pH:	Not determined	Decomposition Temperature:	Not determined
Melting/Freezing Point:	Not applicable	Viscosity:	Not determined
Boiling Point / Range:	100°C (212°F) (Water)	Specific Heat Value:	Not determined
Flash Point:	Not determined	Particle Size:	Not applicable
Evaporation Rate (Butyl Acetate = 1):	<1	VOC:	21%
Flammability (solid, gas):	Not applicable	Percent Volatile:	Not determined
Flammable Limits:	LEL 1.8% UEL 9.5%	Saturated Vapor Concentration:	Not determined

Vapor Pressure:	Not determined	Release of invisible flammable vapors and gases:	Not determined
Vapor Density (air = 1):	>1	Aerosol Protection Level (NFPA 30B):	1
Relative Density (Water = 1):	0.976	Solubility:	Miscible in water

10 – Stability and Reactivity

Reactivity: Non-reactive
Chemical Stability: Stable under normal storage conditions.
Possibility of Hazardous Reactions: Polymerization will not occur.
Conditions to Avoid: Avoid extreme heat, flames and other sources of ignition. Avoid physical damage to aerosol can.
Incompatible Materials: Strong oxidizers.
Hazardous Decomposition Products: Carbon monoxide and carbon dioxide.

11 – Toxicological Information

Health Hazards:
Ingestion: Swallowing is an unlikely route of exposure for an aerosol product. Swallowing large amounts may produce gastrointestinal irritation, nausea, vomiting and diarrhea.
Eye Contact: Liquid sprayed into eyes may cause irritation. May cause redness, stinging, swelling, and tearing.
Skin Contact: May cause skin irritation with redness, itching and burning of the skin. Prolonged and/or repeated contact may cause defatting with possible dermatitis. Repeated contact may result in an allergic skin reaction.
Inhalation: Mist or vapor can irritate the throat and lungs. High concentrations may cause nasal and respiratory irritation and central nervous system effects such as headache, dizziness and nausea. Intentional abuse may be harmful or fatal.

Chronic Exposure: None known.
Medical Conditions Aggravated by Exposure: Preexisting eye, skin and respiratory conditions may be aggravated by exposure.

Acute Toxicity Values:
Water: No toxicity data available
2- Butoxyethanol: Oral rat LD50: 470 mg/kg; Skin rabbit LD50: 400 mg/kg; Inhalation rat LC50: 450 ppm/4hr
D-limonene: Oral rat LD50: 4400 mg/kg; Skin rabbit LD50: >5000 mg/kg
Propellant: No toxicity data available
Surfactant: Oral rat LD50: 1900-5000 mg/kg, Skin rabbit LD50: >3000 mg/kg

Skin Corrosion/Irritation: No data available for mixture. Based on the ingredients, this product is classified as a skin irritant.
Serious Eye Damage/Irritation: No data available for mixture. Based on the ingredients, this product is classified as an eye irritant.
Respiratory or Skin Sensitization: This product is expected to cause skin sensitization.
Germ Cell Mutagenicity: None of the components have been found to be mutagenic.
Carcinogenicity: None of the components are listed as a carcinogen or suspected carcinogen by IARC, NTP, ACGIH, US OSHA or the EU CLP.
Reproductive Toxicity: None of the components are known to cause adverse reproductive effects.
Specific Target Organ Toxicity:
Single Exposure: No data available.
Repeated Exposure: No data available.
Aspiration Hazard: No data available. Based on the ingredients, this product is not expected to present an aspiration hazard.

12 – Ecological Information

Ecotoxicity:
2- Butoxyethanol: 96 hr LC50 Rainbow trout- 1464 mg/L; 48 hr EC50 Daphnia magna- 1800 mg/L
D-limonene: 48 hr LC50 Daphnia magna- 0.577 mg/L
Surfactant: 96 hr LC50 Fathead minnow- 4-8.9 mg/L, 48 hr EC50 Daphnia magna- 18-26 mg/L, 16 hr IC50 Bacteria (static test)- 5000 mg/L

This product has been classified as toxic to the aquatic environment with long lasting effects based on the components. Releases to the environment should be avoided.

Persistence and Degradability: No data available.
Bioaccumulative Potential: No data available.
Mobility in Soil: No data available.
Other Adverse Effects: None Known

13 - Disposal Considerations

Safe Handling and Disposal Method: Aerosol containers should not be punctured, compacted in home trash compactors or incinerated.
Disposal of Contaminated Packaging: Empty containers may be disposed of through normal waste management options.
Environmental Regulations: Dispose of all waste product, absorbents, and other materials in accordance with applicable Federal, state and local regulations.

14 – Transportation Information

IMDG Shipping Name: Aerosols
IMDG Hazard Class: 2.1
UN Number: UN1950
Marine Pollutant: No*

IATA Shipping Name: Aerosols, Flammable
IATA Hazard Class: 2.1
UN Number: UN1950

ADG Shipping Name: Aerosols
ADG Hazard Class: 2.1
UN Number: UN1950
Hazchem (Emergency Action) Code: 2YE (ADG7)

*Note: Inner packages with less than 5 liters of liquid/ 5 kg of solid are exempt from Marine Pollutant per IMDG Code 2.10.2.7 and ICAO Special Provision A197.

Special Precautions for User: WD-40 Company does not test aerosol cans to assure that they meet the pressure and other requirements for transport by air. We do not recommend that our aerosol products be transported by air.

15 – Regulatory Information

Montreal Protocol (Ozone Depleting Substances): None present
The Stockholm Convention (Persistent Organic Pollutants): None present
The Rotterdam Convention (Prior Informed Consent): Not applicable
Basel Convention: Not applicable
International Convention for the Prevention of Pollution from Ships (MARPOL): D-Limonene (as Dipentene) is listed.
Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP): Not applicable

Australian Inventory of Chemical Substances: All of the components of this product are listed on the AICS inventory.

New Zealand:
HSNO Approval Number: HSR002515
Considered a Hazardous Substance according to the criteria of the New Zealand Hazardous Substances New Organisms legislation. Classified as Dangerous Good for transport purposes.

HSNO Hazard Classes: 2.1.2A, 6.3A, 6.4A, 6.5B, 9.1D, 9.1B

New Zealand Inventory: All the ingredients comply with the HSNO regulations.

16 – Other Information

REVISION DATE: 30 June 2021 SUPERSEDES: 13 October 2020

Prepared By: Industrial Health & Safety Consultants, Inc.

Full Text of GHS Classification and H Phrases from Section 3:
Acute Tox. Cat 4 Acute Toxicity Category 4
Aq. Acute Cat 1 Aquatic Acute Toxicity Category 1
Aq. Acute Cat 2 Aquatic Acute Toxicity Category 2
Aq. Chronic Cat 1 Aquatic Chronic Toxicity Category 1
Aq. Chronic Cat 2 Aquatic Chronic Toxicity Category 2
Asp. Tox. Cat 1 Aspiration Toxicity Category 1
Eye Dam. Cat 1 Eye Damage Category 1
Eye Irrit. Cat 2 Eye Irritant Category 2
Flam. Gas Cat 1 Flammable Gas Category 1
Flam. Liq. Cat 3 Flammable Liquid Category 3
Skin Irrit. Cat 2 Skin Irritant Category 2
Skin Sens. Cat 1B Skin Sensitization Category 1B
Press. Gas Compressed Gas
H220 Extremely flammable gas.
H226 Flammable liquid and vapor.
H280 Contains gas under pressure; may explode if heated.
H302 Harmful if swallowed.
H304 May be fatal if swallowed and enters airways.
H312 Harmful in contact with skin.
H315 Causes skin irritation.
H317 May cause an allergic skin reaction.
H318 Causes serious eye damage.
H319 Causes serious eye irritation.
H332 Harmful if inhaled.
H400 Very toxic to aquatic life.
H401 Toxic to aquatic life.
H410 Very toxic to aquatic life with long lasting effects.
H411 Toxic to aquatic life with long lasting effects.

List of Abbreviations or Acronyms:
ACGIH American Conference of Industrial Hygienists
ADG Australian Dangerous Goods
AICS Australian Inventory of Chemical Substances
AU Australia
EC Effective Concentration
EU European Union
GHS Globally Harmonized System of Classification and Labelling of Chemicals

HSNO Hazardous Substances and New Organisms
IARC International Agency of Research on Cancer
IATA International Air Transport Association
IMDG International Maritime Dangerous Goods
LC Lethal Concentration
LD Lethal Dosage
LEL Lower Explosive Limit
NTP National Toxicology Program
NZ New Zealand
OEL Occupational Exposure Limits
PEL Permissible Exposure Limit
SDS Safety Data Sheet
STEL Short Term Exposure Limit
TWA Time-Weighted Average
UEL Upper Explosive Limit
US OSHA United States Occupational Safety and Health Administration
VOC Volatile Organic Compounds
WHS Work Health and Safety

REVIEWED BY: *I. Kowalski* TITLE: Manager Regulatory Affairs

This SDS complies with Australian guidelines for SDS. The foregoing information has been compiled from sources believed to be accurate but is not warranted to be. Recipients are advised to confirm in advance of need that data is correct. Standards change without notice. It is the responsibility of the recipient to insure that their personnel have been notified of any changes which may affect them. The data provided on this SDS are not meant to be used as specifications, only as guideline information as to the safe use of this product. User should refer to applicable laws before use.

1095300/No.0129904

Section 1 - Identification of The Material and Supplier

Watson-Marlow Pty Ltd (a Spirax-Sarco Engineering Company) **Phone: 02 8787 1400**
Unit 15, 19-26 Durian Place **Fax: 02 9729 0792**
Wetherill Park NSW 2164 AUSTRALIA

Chemical nature: Blend of glycerol, propylene glycol and other minor ingredients
Trade Name: **Lubricant/Coolant for Bredel Hose Pump "Food Grade"**
Product Use: Lubricating and cooling liquid
Creation Date: **April, 2018**
This version issued: **March, 2022** and is valid for 5 years from this date.
Poisons Information Centre: Phone 13 1126 from anywhere in Australia

Section 2 - Hazards Identification

Statement of Hazardous Nature

This product is classified as: Not classified as hazardous according to the criteria of SWA.

Not a Dangerous Good according to Australian Dangerous Goods (ADG) Code, IATA or IMDG/IMSBC criteria.

SUSMP Classification: None allocated.
ADG Classification: None allocated. Not a Dangerous Good according to Australian Dangerous Goods (ADG) Code, IATA or IMDG/IMSBC criteria.
UN Number: None allocated

GHS Signal word: NONE. Not hazardous.

PREVENTION

P262: Do not get in eyes, on skin, or on clothing.
P264: Wash contacted areas thoroughly after handling.
P281: Use personal protective equipment as required.

RESPONSE

P301+P330+P331: IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P370+P378: In case of fire, use carbon dioxide, dry chemical, foam, water fog.

STORAGE

P404: Store in a closed container.
P403+P235: Store in a well-ventilated place. Keep cool.

DISPOSAL

P501: If they can not be recycled, dispose of contents to an approved waste disposal plant and containers to landfill (see Section 13 of this SDS).

Emergency Overview

Physical Description & Colour: Clear green liquid
Odour: No odour.
Major Health Hazards: no significant risk factors have been found for this product.

Section 3 - Composition/Information on Ingredients

Ingredients	CAS No	Conc, %	TWA (mg/m^3)	STEL (mg/m^3)
Glycerine	56-81-5	>50	10 (mist)	not set
Propylene glycol	57-55-6	2.5-10	10	not set
Other non hazardous ingredients	secret	to 100	not set	not set

This is a commercial product whose exact ratio of components may vary slightly. Minor quantities of other non hazardous ingredients are also possible.

The SWA TWA exposure value is the average airborne concentration of a particular substance when calculated over a normal 8 hour working day for a 5 day working week. The STEL (Short Term Exposure Limit) is an exposure value that may be equalled (but should not be exceeded) for no longer than 15 minutes and should not be repeated more than 4 times per day. There should be at least 60 minutes between successive exposures at the STEL. The term "peak "is used when the TWA limit, because of the rapid action of the substance, should never be exceeded, even briefly.

Section 4 - First Aid Measures

General Information:

You should call The Poisons Information Centre if you feel that you may have been poisoned, burned or irritated by this product. The number is 13 1126 from anywhere in Australia (0800 764 766 in New Zealand) and is available at all times. Have this SDS with you when you call.

Inhalation: First aid is not generally required. If in doubt, contact a Poisons Information Centre or a doctor.
Skin Contact: Irritation is unlikely. However, if irritation does occur, flush with lukewarm, gently flowing water for 5 minutes or until chemical is removed.
Eye Contact: No effects expected. If irritation does occur, flush contaminated eye(s) with lukewarm, gently flowing water for 5 minutes or until the product is removed. Obtain medical advice if irritation becomes painful or lasts more than a few minutes. Take special care if exposed person is wearing contact lenses.
Ingestion: If product is swallowed or gets in mouth, do NOT induce vomiting; wash mouth with water and give some water to drink. If symptoms develop, or if in doubt contact a Poisons Information Centre or a doctor.

Section 5 - Fire Fighting Measures

Fire and Explosion Hazards: The major hazard in fires is usually inhalation of heated and toxic or oxygen deficient (or both), fire gases. There is no risk of an explosion from this product under normal circumstances if it is involved in a fire. Violent steam generation or eruption may occur upon application of direct water stream on hot liquids.
Fire decomposition products from this product may be toxic if inhaled. Take appropriate protective measures.
Extinguishing Media: In case of fire, use carbon dioxide, dry chemical, foam or water fog.
Fire Fighting: If a significant quantity of this product is involved in a fire, call the fire brigade.
Flammability Class: Not flammable (GHS); C2 combustible (AS 1940)

Section 6 - Accidental Release Measures

Accidental release: Minor spills do not normally need any special cleanup measures. In the event of a major spill, prevent spillage from entering drains or water courses. As a minimum, wear overalls, goggles and gloves. Suitable materials for protective clothing include butyl rubber. Eye/face protective equipment should comprise, as a minimum, protective glasses and, preferably, goggles. If there is a significant chance that vapours or mists are likely to build up in the cleanup area, we recommend that you use a respirator. Usually, no respirator is necessary when using this product. However, if you have any doubts consult the Australian Standard mentioned below (section 8).
Stop leak if safe to do so, and contain spill. Absorb onto sand, vermiculite or other suitable absorbent material. If spill is too large or if absorbent material is not available, try to create a dike to stop material spreading or going into drains or waterways. Sweep up and shovel or collect recoverable product into labelled containers for recycling or salvage, and dispose of promptly. Recycle containers wherever possible after careful cleaning. After spills, wash area preventing runoff from entering drains. If a significant quantity of material enters drains, advise emergency services. This material may be suitable for approved landfill. Ensure legality of disposal by consulting regulations prior to disposal. Thoroughly launder protective clothing before storage or re-use. Advise laundry of nature of contamination when sending contaminated clothing to laundry.

Section 7 - Handling and Storage

Handling: Keep exposure to this product to a minimum, and minimise the quantities kept in work areas. Check Section 8 of this SDS for details of personal protective measures, and make sure that those measures are followed. The measures detailed below under "Storage" should be followed during handling in order to minimise risks to persons using the product in the workplace. Also, avoid contact or contamination of product with incompatible materials listed in Section 10.
Storage: Store packages of this product in a cool place. Make sure that containers of this product are kept tightly closed. Make sure that the product does not come into contact with substances listed under "Incompatibilities" in Section 10. Some liquid preparations settle or separate on standing and may require stirring before use. Check packaging - there may be further storage instructions on the label.

Section 8 - Exposure Controls and Personal Protection

The following Australian Standards will provide general advice regarding safety clothing and equipment:

Respiratory equipment: **AS/NZS 1715**, Protective Gloves: **AS 2161**, Occupational Protective Clothing: AS/NZS 4501 set 2008, Industrial Eye Protection: **AS1336** and **AS/NZS 1337**, Occupational Protective Footwear: **AS/NZS2210**.

SWA Exposure Limits	**TWA (mg/m^3)**	**STEL (mg/m^3)**
Glycerine	10 (mist)	not set
Propylene glycol	10	not set

No special equipment is usually needed when occasionally handling small quantities. The following instructions are for bulk handling or where regular exposure in an occupational setting occurs without proper containment systems.

Ventilation: This product should only be used in a well ventilated area. If natural ventilation is inadequate, use of a fan is suggested.
Eye Protection: Eye protection is not normally necessary when this product is being used. However, if in doubt, wear suitable protective glasses or goggles.
Skin Protection: The information at hand indicates that this product is not harmful and that normally no special skin protection is necessary. However, we suggest that you routinely avoid contact with all chemical products and that you wear suitable gloves (preferably elbow-length) when lengthy skin contact is likely.
Protective Material Types: We suggest that protective clothing be made from the following materials: butyl rubber.
Respirator: Usually, no respirator is necessary when using this product. However, if you have any doubts consult the Australian Standard mentioned above.

Section 9 - Physical and Chemical Properties:

Physical Description & colour:	Clear green liquid
Odour:	No odour.
Boiling Point:	260°C at 100kPa
Flash point:	>100°C
Upper Flammability Limit:	11.3% v/v
Lower Flammability Limit:	2.6% v/v
Autoignition temperature:	~370°C
Freezing/Melting Point:	-30°C
Volatiles:	No specific data. Expected to be low at 100°C.
Vapour Pressure:	Negligible at normal ambient temperatures.
Vapour Density:	No data.
Specific Gravity:	~1.245 at 20°C
Water Solubility:	Miscible.
pH:	Neutral
Volatility:	No data.
Odour Threshold:	No data.
Evaporation Rate:	No data.
Coeff Oil/water Distribution:	No data
Particle Characteristics:	Not applicable for liquids.

Section 10 – Stability and Reactivity

Reactivity: This product is unlikely to react or decompose under normal storage conditions. However, if you have any doubts, contact the supplier for advice on shelf life properties.
Conditions to Avoid: This product should be kept in a cool place, preferably below 30°C. Keep containers tightly closed.
Incompatibilities: oxidising agents.
Fire Decomposition: Combustion forms carbon dioxide, and if incomplete, carbon monoxide and possibly smoke. Water is also formed. Carbon monoxide poisoning produces headache, weakness, nausea, dizziness, confusion, dimness of vision, disturbance of judgment, and unconsciousness followed by coma and death.
Polymerisation: This product will not undergo polymerisation reactions.

Section 11 - Toxicological Information

Local Effects:
Target Organs: There is no data to hand indicating any particular target organs.

Classification of Hazardous Ingredients

No ingredient mentioned in the HCIS Database is present in this product at hazardous concentrations.

Potential Health Effects

Inhalation:
Short Term Exposure: Available data indicates that this product is not harmful. In addition product is unlikely to cause any discomfort or irritation.
Long Term Exposure: No data for health effects associated with long term inhalation.

Skin Contact:

Short Term Exposure: Available data indicates that this product is not harmful. It should present no hazards in normal use. However product may be mildly irritating, but is unlikely to cause anything more than mild discomfort which should disappear once contact ceases.
Long Term Exposure: No data for health effects associated with long term skin exposure.

Eye Contact:

Short Term Exposure: This product may be mildly irritating to eyes, but is unlikely to cause anything more than mild discomfort which should disappear once product is removed.
Long Term Exposure: No data for health effects associated with long term eye exposure.

Ingestion:

Short Term Exposure: Significant oral exposure is considered to be unlikely. Available data shows that this product is not harmful. However, this product may be mildly irritating to mucous membranes but is unlikely to cause anything more than mild transient discomfort.
Long Term Exposure: No data for health effects associated with long term ingestion.

Carcinogen Status:

SWA: No significant ingredient is classified as carcinogenic by SWA.
NTP: No significant ingredient is classified as carcinogenic by NTP.
IARC: No significant ingredient is classified as carcinogenic by IARC.

Section 12 - Ecological Information

Insufficient data to be sure of status.

Section 13 - Disposal Considerations

Disposal: This product may be recycled if unused, or if it has not been contaminated so as to make it unsuitable for its intended use. If it has been contaminated, it may be possible to reclaim the product by filtration, distillation or some other means. If neither of these options is suitable in-house, consider controlled incineration, or contact a specialist waste disposal company.

Section 14 - Transport Information

UN Number: This product is not classified as a Dangerous Good by ADG, IATA or IMDG/IMSBC criteria. No special transport conditions are necessary unless required by other regulations.

Section 15 - Regulatory Information

AIIC: All of the significant ingredients in this formulation are compliant with AICIS regulations.

Section 16 - Other Information

This SDS contains only safety-related information. For other data see product literature.

THIS SDS SUMMARISES OUR BEST KNOWLEDGE OF THE HEALTH AND SAFETY HAZARD INFORMATION OF THE PRODUCT AND HOW TO SAFELY HANDLE AND USE THE PRODUCT IN THE WORKPLACE. EACH USER MUST REVIEW THIS SDS IN THE CONTEXT OF HOW THE PRODUCT WILL BE HANDLED AND USED IN THE WORKPLACE.

IF CLARIFICATION OR FURTHER INFORMATION IS NEEDED TO ENSURE THAT AN APPROPRIATE RISK ASSESSMENT CAN BE MADE, THE USER SHOULD CONTACT THIS COMPANY SO WE CAN ATTEMPT TO OBTAIN ADDITIONAL INFORMATION FROM OUR SUPPLIERS

OUR RESPONSIBILITY FOR PRODUCTS SOLD IS SUBJECT TO OUR STANDARD TERMS AND CONDITIONS, A COPY OF WHICH IS SENT TO OUR CUSTOMERS AND IS ALSO AVAILABLE ON REQUEST.

Please read all labels carefully before using product.

This SDS is prepared in accord with the SWA document “Preparation of Safety Data Sheets for Hazardous Chemicals - Code of Practice” (July 2020) and GHS Revision 7

http://www.kilford.com.au/ Phone (02)8321 8866

Global Pumps

Safety data sheet
Flex-Lube

Edition: November 2020

1. IDENTIFICATION

Product name	Flex-Lube
Uses	Food grade pump lubricant and coolant
Chemical family	No data available
Chemical formula	C3H8O3
Chemical name	1,2,3-Propanetriol (glycerine)

Company Identification

PRODUCER / SUPPLIER	Global Pumps 12 Selgar Avenue Tonsley South Australia 5042
Tel number	+61 (8) 8275 8000
Fax number	+61 (8) 8275 8099
Email	sales@globalpumps.com.au

Emergency contact details

For emergencies only; DO NOT contact these companies for general product advice.

Organisation	Location	Telephone
Poisons Information Centre	Westmead NSW	1800 251 525 131 126
Chemcall	Springwood QLD	1800 127 406

2. HAZARD IDENTIFICATION

Poisons Schedule (Aust)	Not scheduled
Globally Harmonised System	
Hazard classification	NOT hazardous according to the criteria of the Globally Harmonised System of Classification and Labelling of Chemicals (GHS)
Signal word	None

National Transport Commission (Australia)

Australian Code for the Transport of Dangerous Goods by Road & Rail (ADG Code)

Dangerous goods classification	NOT Dangerous Goods according to the criteria of the Australian Code for the Transport of Dangerous Goods by Road & Rail (ADG Code)

3. COMPOSITION / INFORMATION ON INGREDIENTS

Ingredients

Chemical entity	Formula	CAS number	Proportion
1,2,3-Propanetriol	C3H8O3	56-81-5	<=100%

4. FIRST AID MEASURES

Description of necessary measures according to routes of exposure

Swallowed	IF SWALLOWED: Rinse mouth, then drink a glass of water. Do not induce vomiting. Get medical advice/attention if you feel unwell.
Eye	IF IN EYES: Immediately flush eyes with running water for several minutes, holding eyelids open and occasionally lifting the upper and lower lids. Remove contact lenses if present and easy to do. Continue rinsing for at least 15 minutes. If eye irritation persists, get medical advice/attention.
Skin	IF ON SKIN: Wash with plenty of soap and water. Take off contaminated clothing and wash before reuse. If skin irritation occurs, get medical advice/attention.
Inhaled	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. If respiratory symptoms persist, get medical advice/attention. Apply resuscitation if victim is not breathing - Administer oxygen if breathing is difficult.
Advice to Doctor	Treat symptomatically and supportively.
Medical conditions aggravated by exposure	No information available.

5. FIRE FIGHTING MEASURES

General measures	If safe to do so, move undamaged containers from fire area. Cool containers with water spray until well after fire is out.
Flammability conditions	Combustible liquid; May burn but does not ignite readily.
Extinguishing media	Use dry chemical, Carbon dioxide (CO2), alcohol-resistant foam or water spray for extinction - Do not use water jets.
Fire and explosion hazard	Containers may explode when heated. *Oil soaked rags can cause spontaneous combustion if not handled properly. Before disposal, wash rags with soap and water and dry in a well-ventilated area.
Hazardous products of combustion	Fire may produce irritating, toxic and/or corrosive fumes, including oxides of carbon.
Special fire fighting instructions	Contain runoff from fire control or dilution water - Runoff may pollute waterways.
Personal protective equipment	Wear self-contained breathing apparatus (SCBA) and chemical splash suit. SCBA and structural firefighter's uniform may provide limited protection.
Flash point	>176 °C
Lower explosion limit	No data available
Upper explosion limit	No data available
Auto ignition temperature	No data available
Hazchem code	No data available

6. ACCIDENTAL RELEASE MEASURES

General response procedure	Ensure adequate ventilation. ELIMINATE all ignition sources. Do not touch or walk through spilled material - Greasy nature will result in a slippery surface. Avoid breathing vapours and contact with eyes, skin and clothing.
Clean-up procedures	Recover large spills for salvage or disposal. Absorb with earth, sand or other non-combustible material and transfer to a suitable container for disposal (see SECTION 13).
Containment	Stop leak if safe to do so - Prevent entry into waterways, drains or confined areas.
Decontamination	Wash hard surfaces with detergent to remove remaining oil film.
Environmental precautionary measures	Prevent entry into drains and waterways.
Evacuation criteria	Spill or leak area should be isolated immediately. Keep unauthorised personnel away.
Personal precautionary measures	Use personal protective equipment as required (see SECTION 8).

7. HANDLING AND STORAGE

Handling	Safety showers and eyewash facilities should be provided within the immediate work area for emergency use. Ensure adequate ventilation. Handle in accordance with good industrial hygiene and safety practice. Avoid breathing vapours and contact with eyes, skin and clothing. Do not ingest. Use personal protective equipment as required (see SECTION 8).
Storage	Store in a cool, dry and well-ventilated place, out of direct sunlight. Keep container tightly closed. Protect against physical damage. Protect from moisture (hygroscopic). Keep away from heat and sources of ignition - No smoking. Keep away from incompatible materials (see SECTION 10).
Container	Keep in the original container.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

General	For Glycerin mist (CAS No. 56-81-5): - Safe Work Australia Exposure Standard: TWA = 10 mg/m3. - New Zealand Workplace Exposure Standard: TWA = 10 mg/m3.
Exposure limits	No data available
Biological limits	No information available.
Engineering measures	A system of local and/or general exhaust is recommended to keep employee exposures as low as possible. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area.
Personal protection equipment	- Respiratory protection: In case of inadequate ventilation, wear respiratory protection. Recommended: Organic vapour/particulate filter respirator (refer to AS/NZS 1715 & 1716). - Eye / face protection: Wear appropriate eye protection to avoid eye contact. Recommended: Safety glasses or goggles. - Hand protection: Handle with gloves. Recommended: Impervious gloves. - Skin/body protection: Wear appropriate personal protective clothing to avoid skin contact. Recommended: Overalls, safety shoes.
Special hazards precautions	Vapour heavier than air - prevent concentration in hollows or sumps. Do NOT enter confined spaces where vapour may have collected.
Work hygiene practices	Do not eat, drink or smoke when using this product. 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
Appearance	Viscous liquid
Odour	Mild, musty or odourless
Colour	Blue. Colourless may be supplied to special order
pH	6-8
Vapour pressure	<0.01 mmHg (@ 50 °C)
Relative vapour density	3.17 Air = 1
Boiling point	>130 °C
Melting point	No data available
Freezing point	<2 °C
Solubility	Soluble in water
Specific gravity	1.22-1.24
Flash point	>176 °C
Auto ignition temp	No data available
Evaporation rate	>1 (Butyl acetate = 1)
Bulk density	No data available
Corrosion rate	No data available
Density	1245 kg/m^3 (approx.)
Specific heat	No data available

Molecular weight	No data available
Net propellant weight	No data available
Octanol water coefficient	No data available
Particle size	No data available
Partition coefficient	No data available
Saturated vapour concentration	No data available
Vapour temperature	No data available
Viscosity	700 mPas @ 20 °C
Volatile percent	No data available
VOC volume	No data available
Additional characteristics	No information available
Potential for dust explosion	Not applicable
Fast or intensely burning characteristics	No information available
Flame propagation or burning rate of solid materials	No information available
Non-flammables that could contribute unusual hazards to a fire	Oil soaked rags can cause spontaneous combustion if not handled properly. Before disposal, wash rags with soap and water and dry in a well-ventilated area.
Properties that may initiate or contribute to fire intensity	Combustible liquid; May burn but does not ignite readily.
Reactions that release gases or vapours	Fire / decomposition may produce irritating, toxic and / or corrosive fumes, including oxides of carbon.
Release of invisible flammable vapours and gases	No information available

10. STABILITY AND REACTIVITY

General information	May react violently with acetic anhydride, calcium oxides, chromium oxides and alkali metal hydride.
Chemical stability	This product is stable. Able to polymerise above 149 °C
Conditions to avoid	Keep away from heat and sources of ignition.
Materials to avoid	Incompatible / reactive with strong oxidisers and strong acids.
Hazardous decomposition products	Fire / decomposition may produce irritating, toxic and/or corrosive fumes, including oxides of carbon.
Hazardous polymerisation	Hazardous polymerisation will not occur.

11. TOXICOLOGICAL INFORMATION

General information	Information on possible routes of exposure: - Ingestion: No adverse effects expected; large amounts may cause gastrointestinal irritation, nausea and vomiting. - Eye contact: May cause eye irritation. - Skin contact: Repeated or prolonged contact may have a degreasing action on the skin and may lead to irritant contact dermatitis. - Inhalation: Mist / vapours may cause respiratory tract irritation (mucous membranes), headache. Chronic effects: No information available.
Carcinogen category	None

12. ECOLOGICAL INFORMATION

Ecotoxicity	Not expected to be harmful to aquatic organisms.
Persistence / degradability	Material is organic by nature and would be expected to breakdown readily in the environment.
Mobility	No information available
Environmental fate	Don't allow spilled material to flow into drainage systems or wastewater treatment systems - High BOD; Large spills into waterways could promote eutrophication and fish kills.
Bioaccumulation potential	No information available.

13. DISPOSAL CONSIDERATIONS

General information	Dispose of contents / container in accordance with local / regional / national regulations.
Special precautions for land fill	No information available

14. TRANSPORT INFORMATION

Land transport (Australia)
ADG Code

Proper shipping name	Glycerine-based liquid
Class	C2 Combustible Liquids – Flash point >93 °C, closed cup, not excluded flammable
Subsidiary risk(s)	No data available
UN number	No data available
Hazchem	No data available
Pack group	No data available
Special provision	No data available
Comments	NON-DANGEROUS GOODS: Not regulated for LAND transport

Sea transport
IMDG Code

Proper shipping name	Glycerine-based liquid
Class	No data available
Subsidiary risk(s)	No data available
UN number	No data available
Hazchem	No data available
Pack group	No data available
Special provision	No data available
EMS	No data available
Marine pollutant	No
Comments	NON-DANGEROUS GOODS: Not regulated for SEA transport

Air transport
IATA DGR

Proper shipping name	Glycerine-based liquid
Class	No data available
Subsidiary risk(s)	No data available
UN number	No data available
Hazchem	No data available
Pack group	No data available
Special provision	No data available
Comments	NON-DANGEROUS GOODS: Not regulated for SEA transport

National Transport Commission (Australia)
Australian Code for the Transport of Dangerous Goods by Road & Rail (ADG Code)

Dangerous Goods Classification	NOT Dangerous Goods according to the criteria of the Australian Code for the Transport of Dangerous Goods by Road & Rail (ADG Code)

15. REGULATORY INFORMATION

General information	No data available
Poisons Schedule (Aust)	Not scheduled

16. OTHER INFORMATION

Employees of Global Pumps have not experienced any harmful effect during normal handling and production

Revision	1
Revision date	4 November 2020
Reason for issue	Updated SDS

Global Pump Group Pty Ltd

For more information
or to request a quote

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12 Selgar Avenue
Tonsley SA 5042

20-218

SAFETY DATA SHEET	**ACCORDING TO REGULATION:** Section 274 of the Work Health and Safety Act	**DATE OF ISSUE:** January 2020	**PREPARED BY:** CAR

DITRAC® ALL-WEATHER BLOX RODENTICIDE

SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Product Identifier: DITRAC® ALL-WEATHER BLOX RODENTICIDE
Australian Registration Number: 49867
Relevant identified uses: Anticoagulant Rodenticide - Ready to use
Uses advised against: Use only for the purpose described above

MANUFACTURER:	**IMPORTER:**	**EMERGENCY PHONE NUMBERS:**
Bell Laboratories, Inc. 3699 Kinsman Blvd. Madison, WI 53704, USA email: registration@belllabs.com	Bell Australia Pty Ltd Ground Floor 430 Little Collins Street Melbourne VIC 3000 Business Number: (03) 8375 8843, available 24/7	Poisonings: 131 126 Poisons Information Centre In a transport emergency dial 000, Police or Fire Brigade For specialist advice in an emergency only, call (02) 9037 2994 (24 hours)

SECTION 2. HAZARDS IDENTIFICATION

THIS PRODUCT IS CLASSIFIED AS: NOT HAZARDOUS ACCORDING TO THE CRITERIA OF SWA.
NOT A DANGEROUS GOOD ACCORDING TO AUSTRALIAN DANGEROUS GOODS (ADG) CODE, IATA OR IMDG/IMSBC CRITERIA.
SUSMP Classification: S6
ADG Classification: None allocated. Not a Dangerous Good according to Australian Dangerous Goods (ADG) Code, IATA or IMDG/IMSBC criteria.
UN Number: None allocated

GHS Signal word: WARNING

HAZARD STATEMENT:
H373: May cause damage to organs through prolonged or repeated exposure.
PREVENTION
P102: Keep out of reach of children.
P264: Wash contacted areas thoroughly after handling.
P270: Do not eat, drink or smoke when using this product.
P273: Avoid release to the environment.
RESPONSE
P313: Get medical attention/advice
P321: Treatment with Vitamin K, which is antidotal, is almost always successful
P337: If eye irritation persists: seek medical attention
P353: Rinse skin or shower with water.
P301+P330+P331: IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P370+P378: Not combustible. Use extinguishing media suited to burning materials.
STORAGE
P402+P404: Store in a dry place. Store in a closed container.
DISPOSAL
P501: Dispose of small quantities and empty containers by wrapping with paper and putting in garbage. For larger quantities, if recycling or reclaiming is not possible, use a commercial waste disposal service.
Major Health Hazards: Ingestion of Brodifacoum is initially asymptomatic, and may continue as such even with prolonged alterations in prothrombin time. No gastrointestinal tract or other symptom occurs. Coagulation disturbances may become evident a few days after ingestion, and may be detected only by laboratory studies. In severe poisoning, gum-bleeding, epistaxis, petechiae, ecchymoses, haematomata, blood in urine and faeces, and genital haemorrhage may occur. Internal bleeding and cerebral haemorrhage may complicate the patient's prognosis. This product is a cumulative poison. Minor exposures over a period of time may lead to serious health problems.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Component	CAS No.	% By weight
Brodifacoum [3-[3-(4'-Bromo-[1,1'-biphenyl]-4-yl)-1,2,3,4-tetrahydro-1-naphthalenyl]-4-hydroxy-2H-1-benzopyran-2-one]	56073-10-0	0.005%
Inert and Non-Hazardous Ingredients (Unlisted components are non-hazardous)	Proprietary	99.995%

SECTION 4. FIRST AID MEASURES

Description of first aid measures

Poisons Information Centre (for exposure or poisoning) contact a doctor or phone Australia 13 1126, available 24/7.

Ingestion: Call physician or emergency number immediately. Have this SDS with you when you call. Have person sip a glass of water if able to swallow. Do not induce vomiting unless instructed by physician.

Inhalation: Not applicable**.**

Eye contact: Hold eye open and rinse slowly with water for 15 – 20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. If irritation develops, obtain medical assistance.

Skin contact: Take off contaminated clothing. Rinse skin immediately with plenty of water for 15 - 20 minutes. If irritation develops, obtain medical assistance.

Most important symptoms and effects, both acute and delayed

Ingestion of excessive quantities may cause nausea, vomiting, loss of appetite, extreme thirst, lethargy, diarrhea, bleeding.

Advice to physician: If ingested, administer Vitamin K_1 intramuscularly or orally as indicated for bishydroxycoumarin overdoses. Repeat as necessary as based upon monitoring of prothrombin times.

Advice to Veterinarian: For animals ingesting bait and/or showing poisoning signs (bleeding or elevated prothrombin times), give Vitamin K_1. If needed, check prothrombin times every 3 days until values return to normal (up to 30 days). In severe cases, blood transfusions may be needed.

SECTION 5. FIRE-FIGHTING MEASURES

Extinguishing media

Suitable Extinguishing Media: water, foam or inert gas.

Unsuitable Extinguishing Media: None known.

Special hazards arising from the mixture: High temperature decomposition or burning in air can result in the formation of toxic gases, which may include carbon monoxide and traces of bromine and hydrogen bromide.

Advice for firefighters: Wear protective clothing and self-contained breathing apparatus.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures: Gloves should be worn when handling the bait. Collect spillage without creating dust.

Environmental precautions: Do not allow bait to enter drains or water courses. Where there is contamination of streams, rivers or lakes contact the appropriate environment agency.

Methods and materials for containment and cleaning up

For Containment: Sweep up spilled material immediately. Place in properly labeled container for disposal or re-use.

For Cleaning Up: Wash contaminated surfaces with detergent. Dispose of all wastes in accordance with all local, regional and national regulations.

Reference to other sections: Refer to Sections 7, 8 & 13 for further details of personal precautions, personal protective equipment and disposal considerations.

SECTION 7. HANDLING AND STORAGE

Precautions for safe handling: Do not handle the product near food, animal foodstuffs or drinking water. Keep out of reach of children. Do not use near heat sources, open flame, or hot surfaces. As soon as possible, wash hands thoroughly after applying bait and before eating, drinking, chewing gum, using tobacco, or using the toilet.

Conditions for safe storage, including any incompatibilities: This product is a Scheduled Poison. Observe all relevant regulations regarding sale, transport and storage of this schedule of poison. Protect this product from light. Store in the closed original container in a dry, cool, well-ventilated area out of direct sunlight. Make sure that the product does not come into contact with substances listed under "Incompatibilities" in Section 10. Check packaging - there may be further storage instructions on the label.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Established Limits

Component	OSHA	ACGIH	Other Limits
Brodifacoum	Not Established	Not Established	Not Established

The following Australian Standards will provide general advice regarding safety clothing and equipment:
Respiratory equipment: **AS/NZS 1715**, Protective Gloves: **AS 2161**, Occupational Protective Clothing: AS/NZS 4501 set 2008, Industrial Eye Protection: **AS1336** and **AS/NZS 1337**, Occupational Protective Footwear: **AS/NZS2210**No special equipment is usually needed when occasionally handling small quantities. The following instructions are for bulk handling or where regular exposure in an occupational setting occurs without proper containment systems.
Ventilation: No special ventilation requirements are normally necessary for this product. However make sure that the work environment remains clean and that dusts are minimised.
Eye Protection: Eye protection such as protective glasses or goggles is recommended when this product is being used.
Skin Protection: The information at hand indicates that this product is not harmful and that normally no special skin protection is necessary. However, we suggest that you routinely avoid contact with all chemical products and that you wear suitable gloves when skin contact is likely.
Protective Material Types: We suggest that protective clothing be made from the following materials: rubber.
Respirator: If there is a significant chance that dusts are likely to build up in the area where this product is being used, we recommend that you use a suitable dust mask.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Appearance/Color:	Red wax block
Odor:	Sweet grain-like
Odor Threshold:	No data
pH:	No data
Melting point:	No data
Boiling point:	No data
Flash point:	No data
Evaporation rate:	No data
Flammability:	No data
Upper/lower flammability or explosive limits:	No data
Vapor Pressure:	No data
Vapor Density:	No data
Relative Density:	1.13 g/mL @ 20°C
Solubility (water):	No data
Solubility (solvents):	No data
Partition coefficient: n-octanol/water:	No data
Auto-ignition temperature:	No data
Decomposition temperature:	No data
Viscosity:	No data

SECTION 10. STABILITY AND REACTIVITY

Reactivity: Stable when stored in original container in a cool, dry location.
Chemical stability: Stable when stored in original container in a cool, dry location.
Possibility of hazardous reactions: Refer to Hazardous decomposition products
Conditions to avoid: Avoid extreme temperatures (below 0°C or above 40°C).
Incompatible materials: Avoid strongly alkaline materials.
Hazardous decomposition products: High temperature decomposition or burning in air can result in the formation of toxic gases, which may include carbon monoxide and traces of bromine and hydrogen bromide.

SECTION 11. TOXICOLOGICAL INFORMATION

Information on toxicological effects
Acute Toxicity
LD50, oral (ingestion): >5001 mg/kg (rats) (Brodifacoum rat LD50 oral: 0.490 mg/kg bw).
LD50, dermal (skin contact): > 5001 mg/kg (rats) (Brodifacoum rabbit LD50 dermal: 4.185 mg/kg bw).
LC50, inhalation: Product is a wax block and therefore exposure by inhalation is not relevant.
Skin corrosion/irritation: Not irritating to skin.
Serious eye damage/Irritation: Not irritating to eyes.

Respiratory or skin sensitization: Dermal sensitization: Not a Sensitizer (Guinea pig maximization test).
Germ cell mutagenicity: Contains no components known to have a mutagenetic effect.
Carcinogenicity: Contains no components known to have a carcinogenetic effect**.**

Components	NTP	IARC	OSHA
Brodifacoum	Not listed	Not listed	Not listed

Reproductive Toxicity: No data
Aspiration Hazard: Not applicable. Product is a wax block.
Target Organ Effects: Reduced blood clotting ability. .

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity Effects: This product is extremely toxic to fish, birds and other wildlife. Dogs and predatory and scavenging mammals and birds might be poisoned if they feed upon animals that have eaten this bait. Do not apply this product directly to water or to areas where surface water is present or to intertidal areas below the mean high water mark. Runoff also may be hazardous to aquatic organisms in water adjacent to treated areas. Do not contaminate water when disposing of equipment wash water or rinsate.
Persistence and degradability: Product is inherently biodegradable.
Bioaccumulative potential: Not determined. Brodifacoum water solubility is extremely low (< 0.1mg/l).
Mobility in Soil: Not determined. Mobility of brodifacoum in soil is considered to be limited.
Other adverse effects: None

SECTION 13. DISPOSAL CONSIDERATIONS

Do not contaminate water, food or feed by storage or disposal.
Disposal: Dispose of small quantities and empty containers by wrapping with paper and putting in garbage. For larger quantities, if recycling or reclaiming is not possible, use a commercial waste disposal service.

SECTION 14. TRANSPORT INFORMATION

UN Number: This product is not classified as a Dangerous Good by ADG, IATA or IMDG/IMSBC criteria. No special transport conditions are necessary unless required by other regulations.

SECTION 15. REGULATORY INFORMATION

AICS: All of the significant ingredients in this formulation are compliant with NICNAS regulations.

SECTION 16. OTHER INFORMATION

This SDS contains only safety-related information. For other data see product literature.
Acronyms:
ADG Code: Australian Code for the Transport of Dangerous Goods by Road and Rail (7th edition)
AICS: Australian Inventory of Chemical Substances
SWA: Safe Work Australia, formerly ASCC and NOHSC
CAS number: Chemical Abstracts Service Registry Number
Hazchem Code: Emergency action code of numbers and letters that provide information to emergency services especially firefighters
IARC: International Agency for Research on Cancer
OSHA: Occupational Health and Safety Administration (USA
NFPA: National Fire Protection Agency (USA)
HMIS: Hazardous Materials Identification System (USA
NOS: Not otherwise specified
NTP: National Toxicology Program (USA)
R-Phrase: Risk Phrase
SUSMP: Standard for the Uniform Scheduling of Medicines & Poisons
UN Number: United Nations Number

NFPA	Health: 1 (caution)	Flammability: 1 (slight)	Reactivity: 0 (stable)	Specific Hazard: None
HMIS	Health: 2 (moderate)	Flammability: 1 (slight)	Reactivity: 0 (minimal)	Protective Equipment: B

Disclaimer: The information provided in this Safety Data Sheet has been obtained from sources believed to be reliable. Bell Laboratories, Inc. provides no warranties; either expressed or implied, and assumes no responsibility for the accuracy or completeness of the data contained herein. This information is offered for your consideration and investigation. The user is responsible to ensure that they have all current data, including the approved product label, relevant to their particular use.

SAFETY DATA SHEET

Section 1 - Identification of The Material and Supplier

Sydney Solvents Pty Ltd Unit 3,
10 Production Place
Jamisontown NSW 2750

Phone: 02 4722 5060 (office hours)
Fax: 02 4722 5070
Email: sales@sydneysolvents.com.au

Chemical nature: Water solution of chlorinating compound (sodium hypochlorite).

Trade Name: **12.5% Bleach**

Product Use: Bleaching reagent. May be used in dairy, food and beverage industries for sanitising processing equipment.

Creation Date: **March, 2006**

This version issued: **February, 2019** and is valid for 5 years from this date.

Poisons Information Centre: Phone 13 1126 from anywhere in Australia

Section 2 - Hazards Identification

Statement of Hazardous Nature

This product is classified as: C, Corrosive. Hazardous according to the criteria of SWA Australia.

Dangerous according to Australian Dangerous Goods (ADG) Code, IATA and IMDG/IMSBC criteria.

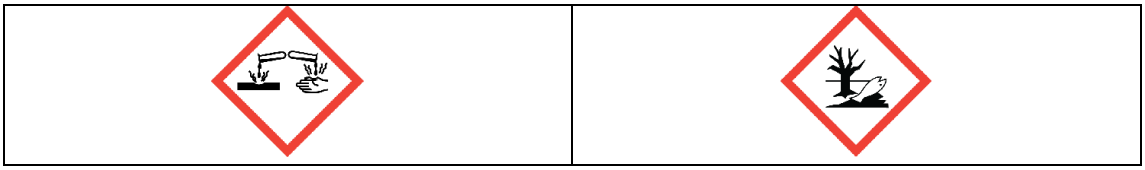
Risk Phrases: R31, R34, R50. Contact with acids liberates toxic gas (chlorine). Causes burns. Very toxic to aquatic organisms.

Safety Phrases: S26, S28, S29, S45, S50, S61, S24/25, S36/37/39. In case of contact with eyes, rinse immediately with plenty of water and contact a doctor or Poisons Information Centre. After contact with skin, wash immediately with plenty of water. Do not empty into drains. In case of accident or if you feel unwell, contact a doctor or Poisons Information Centre immediately (show the label where possible). Do not mix with acids. Avoid release to the environment. Refer to special instructions/Safety Data Sheets. Avoid contact with skin and eyes. Wear suitable protective clothing, gloves and eye/face protection.

SUSMP Classification: S5

ADG Classification: Class 8: Corrosive Substances.

UN Number: 1791, HYPOCHLORITE SOLUTION



GHS Signal word: DANGER.

HAZARD STATEMENT:

AUH031: Contact with acids liberates toxic chlorine gas.
H314: Causes severe skin burns and eye damage.
H400: Very toxic to aquatic life.

PREVENTION

P102: Keep out of reach of children.
P260: Do not breathe fumes, mists, vapours or spray.
P262: Do not get in eyes, on skin, or on clothing.
P264: Wash contacted areas thoroughly after handling.
P273: Avoid release to the environment.
P281: Use personal protective equipment as required.

RESPONSE

P310: Immediately call a POISON CENTER or doctor/physician.
P337: If eye irritation persists: seek medical attention.
P363: Wash contaminated clothing before reuse.
P301+P330+P331: IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P303+P361+P353: IF ON SKIN (or hair): Remove immediately all contaminated clothing. Rinse skin with water.
P304+P340: IF INHALED: Remove victim 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.

P370+P378: Not combustible. Use extinguishing media suited to burning materials.

STORAGE

P410: Protect from sunlight.
P402+P404: Store in a dry place. Store in a closed container.

DISPOSAL

P501: If no in-house recycle or reclaim resources are suitable for this product, contact a specialist waste disposal company (see Section 13 of this SDS).

Emergency Overview

Physical Description & Colour: Pale yellow-green liquid.
Odour: Slight chlorine odour.
Major Health Hazards: causes burns, may cause serious damage to eyes.

Potential Health Effects

Inhalation

Short Term Exposure: Product may be mildly irritating, although unlikely to cause anything more than mild transient discomfort unless liquid is inhaled. If that occurs, it is likely to cause intense pain and corrosion of nasal passages. Damage may be permanent if exposure is extensive, or if prompt treatment does not take place.
Long Term Exposure: No data for health effects associated with long term inhalation.

Skin Contact:

Short Term Exposure: Product is corrosive to the skin. Capable of causing moderate to severe burns with ulceration. Can penetrate to deeper layers of skin, resulting in third degree burns. If exposure is extensive, corrosion will continue until product is removed or neutralised. Severity depends on concentration and duration of exposure. Burns may not be immediately painful; the onset of pain may be minutes to hours.
Long Term Exposure: No data for health effects associated with long term skin exposure.

Eye Contact:

Short Term Exposure: Product is corrosive to eyes. It will cause severe pain, and corrosion of the eye and surrounding facial tissues. Unless exposure is quickly treated, permanent blindness and facial scarring is likely.
Long Term Exposure: No data for health effects associated with long term eye exposure.

Ingestion:

Short Term Exposure: Significant oral exposure is considered to be unlikely. This product is likely to cause headache and gastric disturbance such as nausea and vomiting if ingested. This product is corrosive to the gastrointestinal tract. Capable of causing moderate to severe burns with ulceration. Can penetrate to deeper layers of skin, resulting in third degree burns. Corrosion will continue until product is removed or neutralised. Severity depends on concentration and duration of exposure.
Long Term Exposure: No data for health effects associated with long term ingestion.

Carcinogen Status:

SWA: No significant ingredient is classified as carcinogenic by SWA.
NTP: No significant ingredient is classified as carcinogenic by NTP.
IARC: No significant ingredient is classified as carcinogenic by IARC.

Section 3 - Composition/Information on Ingredients

Ingredients	CAS No	Conc,%	TWA (mg/m^3)	STEL (mg/m^3)
Sodium hypochlorite	7681-52-9	13	not set	not set
Sodium hydroxide	1310-73-2	<1	2	peak
Water	7732-18-5	to 100	not set	not set

This is a commercial product whose exact ratio of components may vary slightly. Minor quantities of other non hazardous ingredients are also possible.

The TWA exposure value is the average airborne concentration of a particular substance when calculated over a normal 8 hour working day for a 5 day working week. The STEL (Short Term Exposure Limit) is an exposure value that may be equalled (but should not be exceeded) for no longer than 15 minutes and should not be repeated more than 4 times per day. There should be at least 60 minutes between successive exposures at the STEL. The term "peak "is used when the TWA limit, because of the rapid action of the substance, should never be exceeded, even briefly.

Section 4 - First Aid Measures

General Information:

You should call The Poisons Information Centre if you feel that you may have been poisoned, burned or irritated by this product. The number is 13 1126 from anywhere in Australia (0800 764 766 in New Zealand) and is available at all times. Have this SDS with you when you call.

Inhalation: No first aid measures normally required. However, if inhalation has occurred, and irritation has developed, remove to fresh air and observe until recovered. If irritation becomes painful or persists more than about 30 minutes, seek medical advice. If liquid is inhaled, seek urgent medical advice.
Skin Contact: Flush contaminated area with lukewarm, gently flowing water for at least 40 minutes, by the clock. DO NOT INTERRUPT FLUSHING. If necessary, keep emergency vehicle waiting (show paramedics this SDS and take their advice). Under running water, remove contaminated clothing, shoes and leather goods (eg watchbands and belts). Strongly basic ingredients tend to penetrate the skin and so need longer rinsing than other substances. If irritation persists, repeat flushing. Seek medical attention.
Eye Contact: Immediately flush the contaminated eye(s) with lukewarm, gently flowing water for at least 20-30 minutes, by the clock, while holding the eyelid(s) open. Neutral saline solution may be used as soon as it is available. DO NOT INTERRUPT FLUSHING. If necessary, keep emergency vehicle waiting (show paramedics this SDS and take their advice). Take care not to rinse contaminated water into the unaffected eye or onto face. If irritation persists, repeat flushing. Call a Poisons Information Centre or a doctor urgently. Take special care if exposed person is wearing contact lenses.
Ingestion: If swallowed, do NOT induce vomiting; rinse mouth thoroughly with water and contact a Poisons Information Centre. Urgent hospital treatment is likely to be needed. Give activated charcoal if instructed.

Section 5 - Fire Fighting Measures

Fire and Explosion Hazards: There is no risk of an explosion from this product under normal circumstances if it is involved in a fire.
This product is likely to decompose only after heating to dryness, followed by further strong heating.
Fire decomposition products from this product may be toxic if inhaled. Take appropriate protective measures.
Extinguishing Media: Water fog or fine spray is the preferred medium for large fires. Try to contain spills, minimise spillage entering drains or water courses.
Fire Fighting: If a significant quantity of this product is involved in a fire, call the fire brigade. There is little danger of a violent reaction or explosion if significant quantities of this product are involved in a fire. Recommended personal protective equipment is liquid-tight chemical protective clothing and breathing apparatus.

Flash point:	Does not burn.
Upper Flammability Limit:	Does not burn.
Lower Flammability Limit:	Does not burn.
Autoignition temperature:	Not applicable - does not burn.
Flammability Class:	Does not burn.

Section 6 - Accidental Release Measures

Accidental release: In the event of a major spill, prevent spillage from entering drains or water courses. Evacuate the spill area and deny entry to unnecessary and unprotected personnel. Wear full protective chemically resistant clothing including eye/face protection, gauntlets and self contained breathing apparatus. See below under Personal Protection regarding Australian Standards relating to personal protective equipment. Suitable materials for protective clothing include rubber, PVC. Eye/face protective equipment should comprise as a minimum, protective goggles. If there is a significant chance that vapours or mists are likely to build up in the cleanup area, we recommend that you use a respirator. It should be fitted with a type B1 cartridge, suitable for acid gases (unlike sodium hypochlorite, chlorine is an acidic gas). Otherwise, not normally necessary.
Stop leak if safe to do so, and contain spill. Absorb onto sand, vermiculite or other suitable absorbent material. If spill is too large or if absorbent material is not available, try to create a dike to stop material spreading or going into drains or waterways. Because of the corrosiveness of this product, special personal care should be taken in any cleanup operation. Sweep up and shovel or collect recoverable product into labelled containers for recycling or salvage, and dispose of promptly. Recycle containers wherever possible after careful cleaning. After spills, wash area preventing runoff from entering drains. If a significant quantity of material enters drains, advise emergency services.
Contaminated area may be neutralised by washing with weak or dilute acid. Vinegar, citrus juice and most soft drinks may be suitable. This material may be suitable for approved landfill. Ensure legality of disposal by consulting regulations prior to disposal. Thoroughly launder protective clothing before storage or re-use. Advise laundry of nature of contamination when sending contaminated clothing to laundry.

Section 7 - Handling and Storage

Handling: Keep exposure to this product to a minimum, and minimise the quantities kept in work areas. Check Section 8 of this SDS for details of personal protective measures, and make sure that those measures are followed. The measures detailed below under "Storage" should be followed during handling in order to minimise risks to

persons using the product in the workplace. Also, avoid contact or contamination of product with incompatible materials listed in Section 10.

Storage: This product is a Scheduled Poison. Observe all relevant regulations regarding sale, transport and storage of this schedule of poison. Store in a cool, well ventilated area. Check containers periodically for corrosion and leaks. Containers should be kept closed in order to minimise contamination. Make sure that the product does not come into contact with substances listed under "Incompatibilities" in Section 10. If you keep more than 10000kg or L of Dangerous Goods of Packaging Group III, you may be required to license the premises or notify your Dangerous Goods authority. If you have any doubts, we suggest you contact your Dangerous Goods authority in order to clarify your obligations. Check packaging - there may be further storage instructions on the label.

Section 8 - Exposure Controls and Personal Protection

The following Australian Standards will provide general advice regarding safety clothing and equipment:

Respiratory equipment: **AS/NZS 1715**, Protective Gloves: **AS 2161**, Occupational Protective Clothing: AS/NZS 4501 set 2008, Industrial Eye Protection: **AS1336** and **AS/NZS 1337**, Occupational Protective Footwear: **AS/NZS2210**.

SWA Exposure Limits	**TWA (mg/m^3)**	**STEL (mg/m^3)**
Sodium hydroxide	2	peak

No special equipment is usually needed when occasionally handling small quantities. The following instructions are for bulk handling or where regular exposure in an occupational setting occurs without proper containment systems.

Ventilation: No special ventilation requirements are normally necessary for this product. However make sure that the work environment remains clean and that vapours and mists are minimised.

Eye Protection: Your eyes must be completely protected from this product by splash resistant goggles with face shield. All surrounding skin areas must be covered. Emergency eye wash facilities must also be available in an area close to where this product is being used.

Skin Protection: Because of the dangerous nature of this product, make sure that all skin areas are completely covered by impermeable gloves, overalls, hair covering, apron and face shield. See below for suitable material types.

Protective Material Types: We suggest that protective clothing be made from the following materials: rubber, PVC.

Respirator: Usually, no respirator is necessary when using this product. However, if you have any doubts consult the Australian Standard mentioned above. Otherwise, not normally necessary.

Eyebaths or eyewash stations and safety deluge showers should be provided near to where this product is being used.

Section 9 - Physical and Chemical Properties:

Physical Description & colour:	Pale yellow-green liquid.
Odour:	Slight chlorine odour.
Boiling Point:	Approximately 100°C at 100kPa.
Freezing/Melting Point:	Approximately 0°C.
Volatiles:	Water component.
Vapour Pressure:	2.37 kPa at 20°C (water vapour pressure).
Vapour Density:	No data.
Specific Gravity:	1.2
Water Solubility:	Completely soluble in water.
pH:	Corrosive. pH 12.5(1% in water)
Volatility:	No data.
Odour Threshold:	No data.
Evaporation Rate:	No data.
Coeff Oil/water Distribution:	No data
Autoignition temp:	Not applicable - does not burn.

Section 10 - Stability and Reactivity

Reactivity: Most strong alkalis and bases react with inorganic and organic acids to form salts. They can also react with some metals liberating hydrogen gas. These reactions may be rapid and sometimes liberate much heat.

Conditions to Avoid: This product should be kept in a cool place, preferably below 30°C. Keep containers tightly closed. Protect this product from light.

Incompatibilities: acids, zinc, tin, aluminium and their alloys. Other materials reactive with strong alkalies.

Fire Decomposition: This product is likely to decompose only after heating to dryness, followed by further strong heating. Chlorine gas, other compounds of chlorine, sodium compounds. Small quantities only.

Polymerisation: This product will not undergo polymerisation reactions.

Section 11 - Toxicological Information

Local Effects:
Target Organs: eyes, skin

Classification of Hazardous Ingredients

Ingredient	Risk Phrases
Sodium Hypochlorite	Conc>=10%(*): C; R34; R31. * Available chlorine

Section 12 - Ecological Information

Very toxic to aquatic organisms. Salts, acids and bases are typically diluted and neutralised when released to the environment in small quantities and so long term environmental effects are unlikely.

Section 13 - Disposal Considerations

Disposal: This product may be recycled if unused, or if it has not been contaminated so as to make it unsuitable for its intended use. If it has been contaminated, it may be possible to reclaim the product by some means. If neither of these options is suitable in-house, contact a specialist waste disposal company.

Section 14 - Transport Information

UN Number: 1791, HYPOCHLORITE SOLUTION
Hazchem Code: 2X
Special Provisions: 223
Limited quantities: ADG 7 specifies a Limited Quantity value of 5 L for this class of product.
Dangerous Goods Class: Class 8, Corrosive Substances.
Packaging Group: III
Packaging Method: P001, IBC03, LP01

Class 8 Corrosive Substances shall not be loaded in the same vehicle or packed in the same freight container with Classes 1 (Explosives), 4.3 (Dangerous When Wet Substances), 5.1 (Oxidising Agents), 5.2 (Organic Peroxides), 6 (Toxic Substances where the Toxic Substances are cyanides and the Corrosives are acids), 7 (Radioactive Substances), Foodstuffs and foodstuff empties. They may however be loaded in the same vehicle or packed in the same freight container with Classes 2.1 (Flammable Gases), 2.2 (Non-Flammable, Non-Toxic Gases), 2.3 (Poisonous Gases), 3 (Flammable liquids), 4.1 (Flammable Solids), 4.2 (Spontaneously Combustible Substances), 6 (Toxic Substances except where the Toxic Substances are cyanides and the Corrosives are acids) and 9 (Miscellaneous Dangerous Goods).

Section 15 - Regulatory Information

AICS: All of the significant ingredients in this formulation are compliant with NICNAS regulations.
The following ingredients: Sodium hypochlorite (a chlorinating agent), sodium hydroxide are mentioned in the SUSMP.

Section 16 - Other Information

This SDS contains only safety-related information. For other data see product literature.

Acronyms:

ADG Code	Australian Code for the Transport of Dangerous Goods by Road and Rail, 7th Edition
AICS	Australian Inventory of Chemical Substances
CAS Number	Chemical Abstracts Service Registry Number
Hazchem Code	Emergency action code of numbers and letters that provide information to emergency services especially firefighters
IARC	International Agency for Research on Cancer
SWA	Safe Work Australia, formerly ASCC and NOHSC
NOS	Not otherwise specified
NTP	National Toxicology Program (USA)
R-Phrase	Risk Phrase
SUSMP	Standard for the Uniform Scheduling of Medicines & Poisons
UN Number	United Nations Number

THIS SDS SUMMARISES OUR BEST KNOWLEDGE OF THE HEALTH AND SAFETY HAZARD INFORMATION OF THE PRODUCT AND HOW TO SAFELY HANDLE AND USE THE PRODUCT IN THE WORKPLACE. EACH USER MUST REVIEW THIS SDS IN THE CONTEXT OF HOW THE PRODUCT WILL BE HANDLED AND USED IN THE WORKPLACE.

IF CLARIFICATION OR FURTHER INFORMATION IS NEEDED TO ENSURE THAT AN APPROPRIATE RISK ASSESSMENT CAN BE MADE, THE USER SHOULD CONTACT THIS COMPANY SO WE CAN ATTEMPT TO OBTAIN ADDITIONAL INFORMATION FROM OUR SUPPLIERS

OUR RESPONSIBILITY FOR PRODUCTS SOLD IS SUBJECT TO OUR STANDARD TERMS AND CONDITIONS, A COPY OF WHICH IS SENT TO OUR CUSTOMERS AND IS ALSO AVAILABLE ON REQUEST.

Please read all labels carefully before using product.

This SDS is prepared in accord with the SWA document “Preparation of Safety Data Sheets for Hazardous Chemicals - Code of Practice” (December 2011)

http://www.kilford.com.au/ Phone (02)9251 4532

TYPE P GREEN SOLVENT CEMENT
RLA Polymers Pty Ltd

Chemwatch Hazard Alert Code: **3**

Chemwatch: **5226-44**
Version No: **4.1.11.9**
Safety Data Sheet according to WHS Regulations (Hazardous Chemicals) Amendment 2020 and ADG requirements

Issue Date: **03/08/2021**
Print Date: **03/08/2021**
S.GHS.AUS.EN

SECTION 1 Identification of the substance / mixture and of the company / undertaking

Product Identifier

Product name	TYPE P GREEN SOLVENT CEMENT
Chemical Name	Not Applicable
Synonyms	Not Available
Proper shipping name	ADHESIVES containing flammable liquid
Chemical formula	Not Applicable
Other means of identification	Not Available

Relevant identified uses of the substance or mixture and uses advised against

Relevant identified uses	Type P Solvent Cement for pressure joints in PVC-U Pipes and Fittings. Use according to manufacturer's directions.

Details of the supplier of the safety data sheet

Registered company name	**RLA Polymers Pty Ltd**
Address	215 Colchester Road Kilsyth VIC 3137 Australia
Telephone	+61 3 9728 1644
Fax	+61 3 9728 6009
Website	www.rlagroup.com.au
Email	sales@rlagroup.com.au

Emergency telephone number

Association / Organisation	**RLA Polymers Pty Ltd**
Emergency telephone numbers	**+61 3 9728 1644 (RLA Group Technical Manager) business hours**
Other emergency telephone numbers	**132766 (Security Monitoring Service)**

SECTION 2 Hazards identification

Classification of the substance or mixture

Poisons Schedule	S5
Classification [1]	Flammable Liquid Category 2, Acute Toxicity (Oral) Category 4, Aspiration Hazard Category 1, Acute Toxicity (Dermal) Category 4, Eye Irritation Category 2A, Acute Toxicity (Inhalation) Category 4, Specific target organ toxicity - single exposure Category 3 (respiratory tract irritation), Specific target organ toxicity - single exposure Category 3 (narcotic effects), Carcinogenicity Category 2, Reproductive Toxicity Category 1B
Legend:	*1. Classified by Chemwatch; 2. Classification drawn from HCIS; 3. Classification drawn from Regulation (EU) No 1272/2008 - Annex VI*

Label elements

Hazard pictogram(s)	
Signal word	**Danger**

Hazard statement(s)

AUH019	May form explosive peroxides.
AUH066	Repeated exposure may cause skin dryness and cracking.
H225	Highly flammable liquid and vapour.
H302	Harmful if swallowed.

Page 1 continued...

H304	May be fatal if swallowed and enters airways.
H312	Harmful in contact with skin.
H319	Causes serious eye irritation.
H332	Harmful if inhaled.
H335	May cause respiratory irritation.
H336	May cause drowsiness or dizziness.
H351	Suspected of causing cancer.
H360	May damage fertility or the unborn child.

Precautionary statement(s) Prevention

P201	Obtain special instructions before use.
P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P271	Use only outdoors or in a well-ventilated area.
P280	Wear protective gloves, protective clothing, eye protection and face protection.

Precautionary statement(s) Response

P301+P310	IF SWALLOWED: Immediately call a POISON CENTER/doctor/physician/first aider.
P308+P313	IF exposed or concerned: Get medical advice/ attention.
P331	Do NOT induce vomiting.
P370+P378	In case of fire: Use alcohol resistant foam or normal protein foam to extinguish.

Precautionary statement(s) Storage

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

Precautionary statement(s) Disposal

P501	Dispose of contents/container to authorised hazardous or special waste collection point in accordance with any local regulation.

SECTION 3 Composition / information on ingredients

Substances

See section below for composition of Mixtures

Mixtures

CAS No	%[weight]	Name
78-93-3	10-30	methyl ethyl ketone
108-94-1	10-30	cyclohexanone
109-99-9	10-30	tetrahydrofuran
872-50-4	<5	N-methyl-2-pyrrolidone
Not Available	balance	Ingredients determined not to be hazardous
Legend:	*1. Classified by Chemwatch; 2. Classification drawn from HCIS; 3. Classification drawn from Regulation (EU) No 1272/2008 - Annex VI; 4. Classification drawn from C&L; * EU IOELVs available*	

SECTION 4 First aid measures

Description of first aid measures

Eye Contact	If this product comes in contact with the eyes: ▸ Wash out immediately with fresh running water. ▸ Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids. ▸ Seek medical attention without delay; if pain persists or recurs seek medical attention. ▸ Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.
Skin Contact	If skin contact occurs: ▸ 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.
Inhalation	▸ If fumes or combustion products are inhaled remove from contaminated area. ▸ Lay patient down. Keep warm and rested. ▸ Prostheses such as false teeth, which may block airway, should be removed, where possible, prior to initiating first aid procedures. ▸ Apply artificial respiration if not breathing, preferably with a demand valve resuscitator, bag-valve mask device, or pocket mask as trained. Perform CPR if necessary. ▸ Transport to hospital, or doctor, without delay.
Ingestion	▸ If swallowed do **NOT** induce vomiting. ▸ If vomiting occurs, lean patient forward or place on left side (head-down position, if possible) to maintain open airway and prevent aspiration. ▸ Observe the patient carefully. ▸ Never give liquid to a person showing signs of being sleepy or with reduced awareness; i.e. becoming unconscious. ▸ Give water to rinse out mouth, then provide liquid slowly and as much as casualty can comfortably drink. ▸ Seek medical advice.

Continued...

	▸ Avoid giving milk or oils. ▸ Avoid giving alcohol. ▸ If spontaneous vomiting appears imminent or occurs, hold patient's head down, lower than their hips to help avoid possible aspiration of vomitus.

Indication of any immediate medical attention and special treatment needed

Any material aspirated during vomiting may produce lung injury. Therefore emesis should not be induced mechanically or pharmacologically. Mechanical means should be used if it is considered necessary to evacuate the stomach contents; these include gastric lavage after endotracheal intubation. If spontaneous vomiting has occurred after ingestion, the patient should be monitored for difficult breathing, as adverse effects of aspiration into the lungs may be delayed up to 48 hours.
Treat symptomatically.
for simple ketones:

BASIC TREATMENT

- Establish a patent airway with suction where necessary.
- Watch for signs of respiratory insufficiency and assist ventilation as necessary.
- Administer oxygen by non-rebreather mask at 10 to 15 l/min.
- Monitor and treat, where necessary, for pulmonary oedema .
- Monitor and treat, where necessary, for shock.
- **DO NOT** use emetics. Where ingestion is suspected rinse mouth and give up to 200 ml water (5mL/kg recommended) for dilution where patient is able to swallow, has a strong gag reflex and does not drool.
- Give activated charcoal.

ADVANCED TREATMENT

- Consider orotracheal or nasotracheal intubation for airway control in unconscious patient or where respiratory arrest has occurred.
- Consider intubation at first sign of upper airway obstruction resulting from oedema.
- Positive-pressure ventilation using a bag-valve mask might be of use.
- Monitor and treat, where necessary, for arrhythmias.
- Start an IV D5W TKO. If signs of hypovolaemia are present use lactated Ringers solution. Fluid overload might create complications.
- Drug therapy should be considered for pulmonary oedema.
- Hypotension with signs of hypovolaemia requires the cautious administration of fluids. Fluid overload might create complications.
- Treat seizures with diazepam.
- Proparacaine hydrochloride should be used to assist eye irrigation.

EMERGENCY DEPARTMENT

- Laboratory analysis of complete blood count, serum electrolytes, BUN, creatinine, glucose, urinalysis, baseline for serum aminotransferases (ALT and AST), calcium, phosphorus and magnesium, may assist in establishing a treatment regime. Other useful analyses include anion and osmolar gaps, arterial blood gases (ABGs), chest radiographs and electrocardiograph.
- Positive end-expiratory pressure (PEEP)-assisted ventilation may be required for acute parenchymal injury or adult respiratory distress syndrome.
- Consult a toxicologist as necessary.

BRONSTEIN, A.C. and CURRANCE, P.L.
EMERGENCY CARE FOR HAZARDOUS MATERIALS EXPOSURE: 2nd Ed. 1994

SECTION 5 Firefighting measures

Extinguishing media

- Alcohol stable foam.
- Dry chemical powder.
- BCF (where regulations permit).
- Carbon dioxide.

Special hazards arising from the substrate or mixture

Fire Incompatibility	▸ Avoid contamination with oxidising agents i.e. nitrates, oxidising acids, chlorine bleaches, pool chlorine etc. as ignition may result

Advice for firefighters

Fire Fighting	▸ Alert Fire Brigade and tell them location and nature of hazard. ▸ May be violently or explosively reactive. ▸ Wear breathing apparatus plus protective gloves in the event of a fire. ▸ Prevent, by any means available, spillage from entering drains or water course.
Fire/Explosion Hazard	▸ Liquid and vapour are highly flammable. ▸ Severe fire hazard when exposed to heat, flame and/or oxidisers. ▸ Vapour may travel a considerable distance to source of ignition. ▸ Heating may cause expansion or decomposition leading to violent rupture of containers. Combustion products include: carbon dioxide (CO_2) nitrogen oxides (NOx) other pyrolysis products typical of burning organic material. **WARNING**: Long standing in contact with air and light may result in the formation of potentially explosive peroxides.
HAZCHEM	•3YE

SECTION 6 Accidental release measures

Personal precautions, protective equipment and emergency procedures

See section 8

Environmental precautions

See section 12

Continued...

Methods and material for containment and cleaning up

Minor Spills	▸ Remove all ignition sources. ▸ Clean up all spills immediately. ▸ Avoid breathing vapours and contact with skin and eyes. ▸ Control personal contact with the substance, by using protective equipment.
Major Spills	▸ Clear area of personnel and move upwind. ▸ Alert Fire Brigade and tell them location and nature of hazard. ▸ May be violently or explosively reactive. ▸ Wear breathing apparatus plus protective gloves.

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

SECTION 7 Handling and storage

Precautions for safe handling

Safe handling	▸ Containers, even those that have been emptied, may contain explosive vapours. ▸ Do NOT cut, drill, grind, weld or perform similar operations on or near containers. ▸ May form explosive peroxides on standing or following concentration by distillation. ▸ Review of stocks and testing for peroxide content by given tested procedures at 3-monthly intervals is recommended, together with safe disposal of peroxidic samples. [Peroxide-containing residues can often be rendered innocuous by pouring into an excess of sodium carbonate solution] ▸ **DO NOT** allow clothing wet with material to stay in contact with skin ▸ Avoid all personal contact, including inhalation. ▸ Wear protective clothing when risk of exposure occurs. ▸ Use in a well-ventilated area. ▸ Prevent concentration in hollows and sumps.
Other information	▸ Store in original containers in approved flame-proof area. ▸ No smoking, naked lights, heat or ignition sources. ▸ **DO NOT** store in pits, depressions, basements or areas where vapours may be trapped. ▸ Keep containers securely sealed.

Conditions for safe storage, including any incompatibilities

Suitable container	▸ Packing as supplied by manufacturer. ▸ Plastic containers may only be used if approved for flammable liquid. ▸ Check that containers are clearly labelled and free from leaks. ▸ For low viscosity materials (i) : Drums and jerry cans must be of the non-removable head type. (ii) : Where a can is to be used as an inner package, the can must have a screwed enclosure. ▸ For materials with a viscosity of at least 2680 cSt. (23 deg. C) ▸ For manufactured product having a viscosity of at least 250 cSt.
Storage incompatibility	▸ Avoid strong acids, bases. ▸ Avoid reaction with oxidising agents

SECTION 8 Exposure controls / personal protection

Control parameters

Occupational Exposure Limits (OEL)

INGREDIENT DATA

Source	Ingredient	Material name	TWA	STEL	Peak	Notes
Australia Exposure Standards	methyl ethyl ketone	Methyl ethyl ketone (MEK)	150 ppm / 445 mg/m3	890 mg/m3 / 300 ppm	Not Available	Not Available
Australia Exposure Standards	cyclohexanone	Cyclohexanone	25 ppm / 100 mg/m3	Not Available	Not Available	Not Available
Australia Exposure Standards	tetrahydrofuran	Tetrahydrofuran	100 ppm / 295 mg/m3	Not Available	Not Available	Not Available
Australia Exposure Standards	N-methyl-2-pyrrolidone	1-Methyl-2-pyrrolidone	25 ppm / 103 mg/m3	309 mg/m3 / 75 ppm	Not Available	Not Available

Emergency Limits

Ingredient	TEEL-1	TEEL-2	TEEL-3
methyl ethyl ketone	Not Available	Not Available	Not Available
cyclohexanone	60 ppm	830 ppm	5000* ppm
tetrahydrofuran	Not Available	Not Available	Not Available
N-methyl-2-pyrrolidone	30 ppm	32 ppm	190 ppm

Ingredient	Original IDLH	Revised IDLH
methyl ethyl ketone	3,000 ppm	Not Available
cyclohexanone	700 ppm	Not Available
tetrahydrofuran	2,000 ppm	Not Available
N-methyl-2-pyrrolidone	Not Available	Not Available

Exposure controls

Appropriate engineering controls	Engineering controls are used to remove a hazard or place a barrier between the worker and the hazard. Well-designed engineering controls can be highly effective in protecting workers and will typically be independent of worker interactions to provide this high level of protection. The basic types of engineering controls are: Process controls which involve changing the way a job activity or process is done to reduce the risk. Enclosure and/or isolation of emission source which keeps a selected hazard "physically" away from the worker and ventilation that strategically

Continued...

	"adds" and "removes" air in the work environment.
Personal protection	
Eye and face protection	▸ Safety glasses with side shields. ▸ Chemical goggles. ▸ Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of lenses or restrictions on use, should be created for each workplace or task.
Skin protection	See Hand protection below
Hands/feet protection	▸ Wear chemical protective gloves, e.g. PVC. ▸ Wear safety footwear or safety gumboots, e.g. Rubber The selection of suitable gloves does not only depend on the material, but also on further marks of quality which vary from manufacturer to manufacturer. Where the chemical is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application. The exact break through time for substances has to be obtained from the manufacturer of the protective gloves and has to be observed when making a final choice. Personal hygiene is a key element of effective hand care.
Body protection	See Other protection below
Other protection	▸ Overalls. ▸ PVC Apron. ▸ PVC protective suit may be required if exposure severe. ▸ Eyewash unit. ▸ Some plastic personal protective equipment (PPE) (e.g. gloves, aprons, overshoes) are not recommended as they may produce static electricity. ▸ For large scale or continuous use wear tight-weave non-static clothing (no metallic fasteners, cuffs or pockets). ▸ Non sparking safety or conductive footwear should be considered. Conductive footwear describes a boot or shoe with a sole made from a conductive compound chemically bound to the bottom components, for permanent control to electrically ground the foot an shall dissipate static electricity from the body to reduce the possibility of ignition of volatile compounds.

Recommended material(s)

GLOVE SELECTION INDEX

Glove selection is based on a modified presentation of the:
***"*Forsberg Clothing Performance Index".**
The effect(s) of the following substance(s) are taken into account in the ***computer-generated*** selection:
TYPE P GREEN SOLVENT CEMENT

Material	CPI
PE/EVAL/PE	A
BUTYL	C
BUTYL/NEOPRENE	C
CPE	C
HYPALON	C
NATURAL RUBBER	C
NATURAL+NEOPRENE	C
NEOPRENE	C
NEOPRENE/NATURAL	C
NITRILE	C
NITRILE+PVC	C
PVA	C
PVC	C
SARANEX-23	C
TEFLON	C
VITON/CHLOROBUTYL	C
VITON/NEOPRENE	C

* CPI - Chemwatch Performance Index
A: Best Selection
B: Satisfactory; may degrade after 4 hours continuous immersion
C: Poor to Dangerous Choice for other than short term immersion
NOTE: As a series of factors will influence the actual performance of the glove, a final selection must be based on detailed observation. -
* Where the glove is to be used on a short term, casual or infrequent basis, factors such as "feel" or convenience (e.g. disposability), may dictate a choice of gloves which might otherwise be unsuitable following long-term or frequent use. A qualified practitioner should be consulted.

Respiratory protection

Type AK Filter of sufficient capacity. (AS/NZS 1716 & 1715, EN 143:2000 & 149:2001, ANSI Z88 or national equivalent)

Where the concentration of gas/particulates in the breathing zone, approaches or exceeds the "Exposure Standard" (or ES), respiratory protection is required. Degree of protection varies with both face-piece and Class of filter; the nature of protection varies with Type of filter.

Required Minimum Protection Factor	Half-Face Respirator	Full-Face Respirator	Powered Air Respirator
up to 5 x ES	AK-AUS / Class 1	-	AK-PAPR-AUS / Class 1
up to 25 x ES	Air-line*	AK-2	AK-PAPR-2
up to 50 x ES	-	AK-3	-
50+ x ES	-	Air-line**	-

^ - Full-face
A(All classes) = Organic vapours, B AUS or B1 = Acid gasses, B2 = Acid gas or hydrogen cyanide(HCN), B3 = Acid gas or hydrogen cyanide(HCN), E = Sulfur dioxide(SO2), G = Agricultural chemicals, K = Ammonia(NH3), Hg = Mercury, NO = Oxides of nitrogen, MB = Methyl bromide, AX = Low boiling point organic compounds(below 65 degC)

- Cartridge respirators should never be used for emergency ingress or in areas of unknown vapour concentrations or oxygen content.
- The wearer must be warned to leave the contaminated area immediately on detecting any odours through the respirator. The odour may indicate that the mask is not functioning properly, that the vapour concentration is too high, or that the mask is not properly fitted. Because of these limitations, only restricted use of cartridge respirators is considered appropriate.
- Cartridge performance is affected by humidity. Cartridges should be changed after 2 hr of continuous use unless it is determined that the humidity is less than 75%, in which case, cartridges can be used for 4 hr. Used cartridges should be discarded daily, regardless of the length of time used

SECTION 9 Physical and chemical properties

Information on basic physical and chemical properties

Appearance	Green viscous highly flammable liquid with a characteristic odour of MEK; does not mix with water.

Continued...

Physical state	Liquid	**Relative density (Water = 1)**	Not Available
Odour	Not Available	**Partition coefficient n-octanol / water**	Not Available
Odour threshold	Not Available	**Auto-ignition temperature (°C)**	321
pH (as supplied)	Not Applicable	**Decomposition temperature**	Not Available
Melting point / freezing point (°C)	Not Available	**Viscosity (cSt)**	Not Available
Initial boiling point and boiling range (°C)	Not Available	**Molecular weight (g/mol)**	Not Applicable
Flash point (°C)	-16	**Taste**	Not Available
Evaporation rate	Not Available	**Explosive properties**	Not Available
Flammability	HIGHLY FLAMMABLE.	**Oxidising properties**	Not Available
Upper Explosive Limit (%)	2	**Surface Tension (dyn/cm or mN/m)**	Not Available
Lower Explosive Limit (%)	11.8	**Volatile Component (%vol)**	Not Available
Vapour pressure (kPa)	Not Available	**Gas group**	Not Available
Solubility in water	Immiscible	**pH as a solution (%)**	Not Applicable
Vapour density (Air = 1)	Not Available	**VOC g/L**	Not Available

SECTION 10 Stability and reactivity

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

SECTION 11 Toxicological information

Information on toxicological effects

Inhaled	Inhalation of vapours or aerosols (mists, fumes), generated by the material during the course of normal handling, may be harmful. 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.
Ingestion	Accidental ingestion of the material may be harmful; animal experiments indicate that ingestion of less than 150 gram may be fatal or may produce serious damage to the health of the individual. Swallowing of the liquid may cause aspiration into the lungs with the risk of chemical pneumonitis; serious consequences may result. (ICSC13733)
Skin Contact	Skin contact with the material may be harmful; systemic effects may result following absorption. Repeated exposure may cause skin cracking, flaking or drying following normal handling and use. Open cuts, abraded or irritated skin should not be exposed to this material Entry into the blood-stream, through, for example, cuts, abrasions or lesions, may produce systemic injury with harmful effects. Examine the skin prior to the use of the material and ensure that any external damage is suitably protected. The material may cause severe inflammation of the skin either following direct contact or after a delay of some time. Repeated exposure can cause contact dermatitis which is characterised by redness, swelling and blistering.
Eye	There is evidence that material may produce eye irritation in some persons and produce eye damage 24 hours or more after instillation. Severe inflammation may be expected with pain.
Chronic	Long-term exposure to respiratory irritants may result in airways disease, involving difficulty breathing and related whole-body problems. Ample evidence exists, from results in experimentation, that developmental disorders are directly caused by human exposure to the material. Prolonged or repeated skin contact may cause drying with cracking, irritation and possible dermatitis following. There has been some concern that this material can cause cancer or mutations but there is not enough data to make an assessment. Substance accumulation, in the human body, may occur and may cause some concern following repeated or long-term occupational exposure. In animal testing, N-methyl-2-pyrrolidone (NMP) has not been shown to cause cancer. There is no evidence of it being toxic to the kidney. In animals, reproductive effects have been reported, and very high doses are toxic to the embryo. Long term cyclohexanone exposure may cause liver and kidney changes. Clouding of the eye lens and cataract development may occur. Animal testing shows that methyl ethyl ketone may have slight effects on the nervous system, liver, kidney and respiratory system; there may also be developmental effects and an increase in birth defects. However, there is limited information available on the long-term effects of methyl ethyl ketone in humans, and no information is available on whether it causes developmental or reproductive toxicity or cancer. It is generally considered to have low toxicity, but it is often used in combination with other solvents, and the toxic effects of the mixture may be greater than with either solvent alone. Combinations of n-hexane or methyl n-butyl ketone with methyl ethyl ketone may increase the rate of peripheral neuropathy, a progressive disorder of the nerves of the extremities. Repeated exposure to tetrahydrofuran (THF) and related compounds has been associated with liver inflammation and fatty degeneration of the liver. Animal testing suggests that this group of compounds can cause liver damage, irritation of the skin and airway, metabolic imbalance, gynaecological disturbance, damage to the adrenal glands and may increase the rate of cancer. Cyclic ethers can cause cancers, especially of the liver. Chronic solvent inhalation exposures may result in nervous system impairment and liver and blood changes. [PATTYS]

TYPE P GREEN SOLVENT CEMENT	**TOXICITY**	**IRRITATION**

Continued...

	Not Available	Not Available
methyl ethyl ketone	**TOXICITY**	**IRRITATION**
	Dermal (rabbit) LD50: ~6400-8000 mg/kg[2]	Eye (human): 350 ppm -irritant
	Inhalation(Mouse) LC50; 32 mg/L4h[2]	Eye (rabbit): 80 mg - irritant
	Oral(Rat) LD50; 2054 mg/kg[1]	Skin (rabbit): 402 mg/24 hr - mild
		Skin (rabbit):13.78mg/24 hr open
cyclohexanone	**TOXICITY**	**IRRITATION**
	Dermal (rabbit) LD50: >794<3160 mg/kg[1]	Eye (human): 75 ppm
	Inhalation(Rat) LC50; >6.2 mg/l4h[2]	Eye (rabbit): 0.25 mg/24h SEVERE
	Oral(Rat) LD50; ~1.62 mg/kg[2]	Eye (rabbit): 4.74 mg SEVERE
		Skin (rabbit): 500 mg(open) mild
tetrahydrofuran	**TOXICITY**	**IRRITATION**
	dermal (rat) LD50: >2000 mg/kg[1]	Eye: adverse effect observed (irritating)[1]
	Inhalation(Rat) LC50; 45 mg/l4h[2]	Skin: no adverse effect observed (not irritating)[1]
	Oral(Rat) LD50; 1.65 mg/kg[1]	
N-methyl-2-pyrrolidone	**TOXICITY**	**IRRITATION**
	Dermal (rabbit) LD50: 2000-4000 mg/kg[2]	Eye (rabbit): 100 mg - moderate
	Inhalation(Rat) LC50; 3.1-8.8 mg/l4h[2]	
	Oral(Rabbit) LD50; ~3500 mg/kg[2]	
Legend:	*1. Value obtained from Europe ECHA Registered Substances - Acute toxicity 2.* Value obtained from manufacturer's SDS. Unless otherwise specified data extracted from RTECS - Register of Toxic Effect of chemical Substances*	

METHYL ETHYL KETONE	Methyl ethyl ketone is considered to have a low order of toxicity; however, methyl ethyl ketone is often used in combination with other solvents and the mixture may have greater toxicity than either solvent alone. Combinations of n-hexane with methyl ethyl ketone, and also methyl n-butyl ketone with methyl ethyl ketone may result in an increased in peripheral neuropathy, a progressive disorder of the nerves of the extremities. Combinations with chloroform also show an increase in toxicity.
CYCLOHEXANONE	Cyclohexanone irritates the eye and the skin. Signs of CNS depression and weight loss have been noted at higher doses. Other features of toxicity include mottling of the lungs and degenerative changes in the liver and kidney. It is not considered to cause cancers, but it may reversibly reduce fertility. The substance is classified by IARC as Group 3: **NOT** classifiable as to its carcinogenicity to humans. Evidence of carcinogenicity may be inadequate or limited in animal testing.
TETRAHYDROFURAN	The material may cause severe skin irritation after prolonged or repeated exposure and may produce on contact skin redness, swelling, the production of vesicles, scaling and thickening of the skin. Repeated exposures may produce severe ulceration. Oral (human) LDLo: 50 mg/kg* [CCINFO]* Nil reported
N-METHYL-2-PYRROLIDONE	For N-methyl-2-pyrrolidone (NMP): Acute toxicity: Animal testing shows NMP is quickly absorbed after inhalation, swallowing and administration on skin, distributed throughout the body, and eliminated mostly by hydroxylation to polar compounds, which are excreted in the urine. In animal testing NMP has a low potential for skin irritation and a moderate potential for eye irritation. Repeated daily doses of high amounts on the skin have caused severe, painful bleeding and eschar formation. In general, animal testing suggests NMP has low acute toxicity. A substance (or part of a group of chemical substances) of very high concern (SVHC) - or product containing an SVHC: It is proposed that use within the European Union be subject to authorisation under the REACH Regulation.Indeed, listing of a substance as an SVHC by the European Chemicals Agency (ECHA) is the first step in the procedure for authorisation or restriction of use of a chemical. The criteria are given in article 57 of the REACH Regulation. A substance may be proposed as an SVHC if it meets one or more of the following criteria: ▸ it is carcinogenic *; ▸ it is mutagenic *; ▸ it is toxic for reproduction *; ▸ it is persistent, bioaccumulative and toxic (PBT substances); ▸ it is very persistent and very bioaccumulative (vPvB substances); ▸ there is "scientific evidence of probable serious effects to human health or the environment which give rise to an equivalent level of concern"; such substances are identified on a case-by-case basis. * Collectively described as CMR substances The "equivalent concern" criterion is significant because it is this classification which allows substances which are, for example, neurotoxic, endocrine-disrupting or otherwise present an unanticipated environmental health risk to be regulated under REACH] Simply because a substance meets one or more of the criteria does not necessarily mean that it will be proposed as an SVHC. Many such substances are already subject to restrictions on their use within the European Union, such as those in Annex XVII of the REACH Regulation SVHCs are substances for which the current restrictions on use (where these exist) might be insufficient. There are three priority groups for assessment: ▸ PBT substances and vPvB substances; ▸ substances which are widely dispersed during use; ▸ substances which are used in large quantities.
METHYL ETHYL KETONE & TETRAHYDROFURAN & N-METHYL-2-PYRROLIDONE	Asthma-like symptoms may continue for months or even years after exposure to the material ends. This may be due to a non-allergic condition known as reactive airways dysfunction syndrome (RADS) which can occur after exposure to high levels of highly irritating compound. Main criteria for diagnosing RADS include the absence of previous airways disease in a non-atopic individual, with sudden onset of persistent asthma-like symptoms within minutes to hours of a documented exposure to the irritant. Other criteria for diagnosis of RADS include a reversible airflow pattern on lung function tests, moderate to severe bronchial hyperreactivity on methacholine challenge testing, and the lack of minimal lymphocytic inflammation, without eosinophilia.

Continued...

METHYL ETHYL KETONE & CYCLOHEXANONE	The material may cause skin irritation after prolonged or repeated exposure and may produce on contact skin redness, swelling, the production of vesicles, scaling and thickening of the skin.
CYCLOHEXANONE & TETRAHYDROFURAN	The material may produce severe irritation to the eye causing pronounced inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis.

Acute Toxicity	✔	**Carcinogenicity**	✔
Skin Irritation/Corrosion	✘	**Reproductivity**	✔
Serious Eye Damage/Irritation	✔	**STOT - Single Exposure**	✔
Respiratory or Skin sensitisation	✘	**STOT - Repeated Exposure**	✘
Mutagenicity	✘	**Aspiration Hazard**	✔

Legend: ✘ *– Data either not available or does not fill the criteria for classification*
✔ *– Data available to make classification*

SECTION 12 Ecological information

Toxicity

TYPE P GREEN SOLVENT CEMENT

Endpoint	Test Duration (hr)	Species	Value	Source
Not Available	Not Available	Not Available	Not Available	Not Available

methyl ethyl ketone

Endpoint	Test Duration (hr)	Species	Value	Source
NOEC(ECx)	48h	Crustacea	68mg/l	2
EC50	72h	Algae or other aquatic plants	1972mg/l	2
LC50	96h	Fish	>324mg/L	4
EC50	48h	Crustacea	308mg/l	2
EC50	96h	Algae or other aquatic plants	>500mg/l	4

cyclohexanone

Endpoint	Test Duration (hr)	Species	Value	Source
EC50	72h	Algae or other aquatic plants	17.7-85.6mg/l	4
LC50	96h	Fish	527-732mg/l	2
EC50	48h	Crustacea	>100mg/l	2
EC10(ECx)	72h	Algae or other aquatic plants	0.4-7.93mg/l	4

tetrahydrofuran

Endpoint	Test Duration (hr)	Species	Value	Source
LC50	96h	Fish	2160mg/l	2
NOEC(ECx)	24h	Fish	>=5mg/l	1

N-methyl-2-pyrrolidone

Endpoint	Test Duration (hr)	Species	Value	Source
NOEC(ECx)	504h	Crustacea	12.5mg/l	2
EC50	72h	Algae or other aquatic plants	>500mg/l	1
LC50	96h	Fish	464mg/l	1
EC50	48h	Crustacea	ca.4897mg/l	1

Legend: *Extracted from 1. IUCLID Toxicity Data 2. Europe ECHA Registered Substances - Ecotoxicological Information - Aquatic Toxicity 3. EPIWIN Suite V3.12 (QSAR) - Aquatic Toxicity Data (Estimated) 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*

DO NOT discharge into sewer or waterways.

Persistence and degradability

Ingredient	Persistence: Water/Soil	Persistence: Air
methyl ethyl ketone	LOW (Half-life = 14 days)	LOW (Half-life = 26.75 days)
cyclohexanone	LOW	LOW
tetrahydrofuran	LOW	LOW
N-methyl-2-pyrrolidone	LOW	LOW

Bioaccumulative potential

Ingredient	Bioaccumulation
methyl ethyl ketone	LOW (LogKOW = 0.29)
cyclohexanone	LOW (BCF = 2.45)
tetrahydrofuran	LOW (LogKOW = 0.46)
N-methyl-2-pyrrolidone	LOW (BCF = 0.16)

Mobility in soil

Ingredient	Mobility

Continued...

Ingredient	Mobility
methyl ethyl ketone	MEDIUM (KOC = 3.827)
cyclohexanone	LOW (KOC = 15.15)
tetrahydrofuran	LOW (KOC = 4.881)
N-methyl-2-pyrrolidone	LOW (KOC = 20.94)

SECTION 13 Disposal considerations

Waste treatment methods

Product / Packaging disposal	▸ Containers may still present a chemical hazard/ danger when empty. ▸ Return to supplier for reuse/ recycling if possible. Otherwise: ▸ If container can not be cleaned sufficiently well to ensure that residuals do not remain or if the container cannot be used to store the same product, then puncture containers, to prevent re-use, and bury at an authorised landfill. ▸ Where possible retain label warnings and SDS and observe all notices pertaining to the product. Legislation addressing waste disposal requirements may differ by country, state and/ or territory. Each user must refer to laws operating in their area. In some areas, certain wastes must be tracked. A Hierarchy of Controls seems to be common - the user should investigate: ▸ Reduction ▸ Reuse ▸ Recycling ▸ Disposal (if all else fails) This material may be recycled if unused, or if it has not been contaminated so as to make it unsuitable for its intended use. ▸ **DO NOT** allow wash water from cleaning or process equipment to enter drains. ▸ It may be necessary to collect all wash water for treatment before disposal. ▸ In all cases disposal to sewer may be subject to local laws and regulations and these should be considered first. ▸ Where in doubt contact the responsible authority. ▸ Recycle wherever possible. ▸ Consult manufacturer for recycling options or consult local or regional waste management authority for disposal if no suitable treatment or disposal facility can be identified. ▸ Dispose of by: burial in a land-fill specifically licensed to accept chemical and / or pharmaceutical wastes or Incineration in a licensed apparatus (after admixture with suitable combustible material). ▸ Decontaminate empty containers.

SECTION 14 Transport information

Labels Required

	
Marine Pollutant	NO
HAZCHEM	•3YE

Land transport (ADG)

UN number	1133
UN proper shipping name	ADHESIVES containing flammable liquid
Transport hazard class(es)	Class: 3 Subrisk: Not Applicable
Packing group	II
Environmental hazard	Not Applicable
Special precautions for user	Special provisions: Not Applicable Limited quantity: 5 L

Air transport (ICAO-IATA / DGR)

UN number	1133
UN proper shipping name	Adhesives containing flammable liquid
Transport hazard class(es)	ICAO/IATA Class: 3 ICAO / IATA Subrisk: Not Applicable ERG Code: 3L
Packing group	II
Environmental hazard	Not Applicable
Special precautions for user	Special provisions: A3 Cargo Only Packing Instructions: 364

Continued...

Cargo Only Maximum Qty / Pack	60 L
Passenger and Cargo Packing Instructions	353
Passenger and Cargo Maximum Qty / Pack	5 L
Passenger and Cargo Limited Quantity Packing Instructions	Y341
Passenger and Cargo Limited Maximum Qty / Pack	1 L

Sea transport (IMDG-Code / GGVSee)

UN number	1133
UN proper shipping name	ADHESIVES containing flammable liquid
Transport hazard class(es)	IMDG Class: 3 IMDG Subrisk: Not Applicable
Packing group	II
Environmental hazard	Not Applicable
Special precautions for user	EMS Number: F-E , S-D Special provisions: Not Applicable Limited Quantities: 5 L

Transport in bulk according to Annex II of MARPOL and the IBC code

Not Applicable

Transport in bulk in accordance with MARPOL Annex V and the IMSBC Code

Product name	Group
methyl ethyl ketone	Not Available
cyclohexanone	Not Available
tetrahydrofuran	Not Available
N-methyl-2-pyrrolidone	Not Available

Transport in bulk in accordance with the ICG Code

Product name	Ship Type
methyl ethyl ketone	Not Available
cyclohexanone	Not Available
tetrahydrofuran	Not Available
N-methyl-2-pyrrolidone	Not Available

SECTION 15 Regulatory information

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

methyl ethyl ketone is found on the following regulatory lists

Australia Hazardous Chemical Information System (HCIS) - Hazardous Chemicals
Australian Inventory of Industrial Chemicals (AIIC)
Australia Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP) - Schedule 5

cyclohexanone is found on the following regulatory lists

Australia Hazardous Chemical Information System (HCIS) - Hazardous Chemicals
International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs
Australian Inventory of Industrial Chemicals (AIIC)

tetrahydrofuran is found on the following regulatory lists

Australia Hazardous Chemical Information System (HCIS) - Hazardous Chemicals
International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs
Australian Inventory of Industrial Chemicals (AIIC)
Chemical Footprint Project - Chemicals of High Concern List
International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs - Group 2B: Possibly carcinogenic to humans

N-methyl-2-pyrrolidone is found on the following regulatory lists

Australia Hazardous Chemical Information System (HCIS) - Hazardous Chemicals
Australian Inventory of Industrial Chemicals (AIIC)
Australia Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP) - Schedule 5
Chemical Footprint Project - Chemicals of High Concern List
Australia Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP) - Schedule 6

National Inventory Status

National Inventory	Status
Australia - AIIC / Australia Non-Industrial Use	Yes
Canada - DSL	Yes
Canada - NDSL	No (methyl ethyl ketone; cyclohexanone; tetrahydrofuran; N-methyl-2-pyrrolidone)

Continued...

National Inventory	Status
China - IECSC	Yes
Europe - EINEC / ELINCS / NLP	Yes
Japan - ENCS	Yes
Korea - KECI	Yes
New Zealand - NZIoC	Yes
Philippines - PICCS	Yes
USA - TSCA	Yes
Taiwan - TCSI	Yes
Mexico - INSQ	Yes
Vietnam - NCI	Yes
Russia - FBEPH	Yes
Legend:	*Yes = All CAS declared ingredients are on the inventory* *No = One or more of the CAS listed ingredients are not on the inventory and are not exempt from listing(see specific ingredients in brackets)*

SECTION 16 Other information

Revision Date	03/08/2021
Initial Date	03/10/2016

SDS Version Summary

Version	Date of Update	Sections Updated
3.1.1.1	01/11/2019	One-off system update. NOTE: This may or may not change the GHS classification
3.1.2.1	26/04/2021	Regulation Change
3.1.3.1	03/05/2021	Regulation Change
3.1.4.1	06/05/2021	Regulation Change
3.1.5.1	10/05/2021	Regulation Change
3.1.5.2	30/05/2021	Template Change
3.1.5.3	04/06/2021	Template Change
3.1.5.4	05/06/2021	Template Change
3.1.6.4	07/06/2021	Regulation Change
3.1.6.5	09/06/2021	Template Change
3.1.6.6	11/06/2021	Template Change
3.1.6.7	15/06/2021	Template Change
3.1.7.7	17/06/2021	Regulation Change
3.1.8.7	21/06/2021	Regulation Change
3.1.8.8	05/07/2021	Template Change
3.1.9.8	14/07/2021	Regulation Change
3.1.10.8	19/07/2021	Regulation Change
3.1.10.9	01/08/2021	Template Change
3.1.11.9	02/08/2021	Regulation Change
4.1.11.9	03/08/2021	Classification, Physical Properties

Other information

Classification of the preparation and its individual components has drawn on official and authoritative sources as well as independent review by the Chemwatch Classification committee using available literature references.

The SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings. Risks may be determined by reference to Exposures Scenarios. Scale of use, frequency of use and current or available engineering controls must be considered.

Definitions and abbreviations

PC—TWA: Permissible Concentration-Time Weighted Average
PC—STEL: Permissible Concentration-Short Term Exposure Limit
IARC: International Agency for Research on Cancer
ACGIH: American Conference of Governmental Industrial Hygienists
STEL: Short Term Exposure Limit
TEEL: Temporary Emergency Exposure Limit。
IDLH: Immediately Dangerous to Life or Health Concentrations
ES: Exposure Standard
OSF: Odour Safety Factor
NOAEL :No Observed Adverse Effect Level
LOAEL: Lowest Observed Adverse Effect Level
TLV: Threshold Limit Value
LOD: Limit Of Detection
OTV: Odour Threshold Value
BCF: BioConcentration Factors
BEI: Biological Exposure Index
AIIC: Australian Inventory of Industrial Chemicals

Continued...

DSL: Domestic Substances List
NDSL: Non-Domestic Substances List
IECSC: Inventory of Existing Chemical Substance in China
EINECS: European INventory of Existing Commercial chemical Substances
ELINCS: European List of Notified Chemical Substances
NLP: No-Longer Polymers
ENCS: Existing and New Chemical Substances Inventory
KECI: Korea Existing Chemicals Inventory
NZIoC: New Zealand Inventory of Chemicals
PICCS: Philippine Inventory of Chemicals and Chemical Substances
TSCA: Toxic Substances Control Act
TCSI: Taiwan Chemical Substance Inventory
INSQ: Inventario Nacional de Sustancias Químicas
NCI: National Chemical Inventory
FBEPH: Russian Register of Potentially Hazardous Chemical and Biological Substances

Safety Data Sheet
according to WHS Regulations

Printing date 19.01.2018 Revision: 19.01.2018

1 Identification

Product Name: ENSNARE PRO 50 SC

Other Means of Identification: Mixture
APVMA Number: 83224/107760

Recommended Use of the Chemical and Restriction on Use: Insecticide

Details of Manufacturer or Importer:
Sundew Solutions Pty Ltd
Unit 11, 4 Dunlop Court
Bayswater VIC 3153

Phone Number: 1800 786 339

Emergency telephone number: 1800 786 339

2 Hazard(s) Identification

Hazardous Nature:
Classified as Hazardous according to the Globally Harmonised System of Classification and Labelling of Chemicals (GHS) and Safe Work Australia criteria.
Not classified as Dangerous Goods according to the Australian Code for the Transport of Dangerous Goods by Road and Rail. (7th edition)


health hazard

STOT RE 2	H373	May cause damage to the heart, the blood and the nervous system through prolonged or repeated exposure.

Acute Toxicity (Oral) 4	H302	Harmful if swallowed.
Skin Sensitisation 1	H317	May cause an allergic skin reaction.
Aquatic Acute 2	H401	Toxic to aquatic life.

Signal Word Warning

Hazard Statements
H302 Harmful if swallowed.
H317 May cause an allergic skin reaction.
H373 May cause damage to the heart, the blood and the nervous system through prolonged or repeated exposure.
H401 Toxic to aquatic life.

Precautionary Statements
P260 Do not breathe dust/fume/gas/mist/vapours/spray.
P264 Wash hands thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P272 Contaminated work clothing should not be allowed out of the workplace.
P273 Avoid release to the environment.
P280 Wear protective gloves.
P301+P312 IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell.
P302+P352 IF ON SKIN: Wash with plenty of water.
P314 Get medical advice/attention if you feel unwell.
P321 Specific treatment (see on this label).

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Product Name: ENSNARE PRO 50 SC

(Contd. of page 1)

P330 Rinse mouth.
P333+P313 If skin irritation or rash occurs: Get medical advice/attention.
P362+P364 Take off contaminated clothing and wash it before reuse.
P501 Dispose of contents/container in accordance with local/regional/national regulations.

3 Composition and Information on Ingredients

Chemical Characterization: Mixtures
Description: Mixture of substances listed below with nonhazardous additions.

Hazardous Components:		
57-55-6	1,2-Propanediol	<10%
173584-44-6	Indoxacarb (ISO) Acute Toxicity (Oral) 3, H301; STOT RE 1, H372; Aquatic Acute 1, H400; Aquatic Chronic 1, H410; Acute Toxicity (Inhalation) 4, H332; Skin Sensitisation 1B, H317	5%
2634-33-5	1,2-benzisothiazol-3(2H)-one Serious Eye Damage/Irritation 1, H318; Aquatic Acute 1, H400; Acute Toxicity (Oral) 4, H302; Skin Corrosion/Irritation 2, H315; Skin Sensitisation 1, H317	0.03%

4 First Aid Measures

Inhalation:
If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Seek medical attention if breathing problems develop.

Skin Contact:
In case of skin contact, immediately remove contaminated clothing and wash affected areas with water and soap. DO NOT scrub the skin. Seek medical attention if symptoms occur.

Eye Contact:
In case of eye contact, hold eyelids open and rinse with water for at least 15 minutes. Remove contact lenses, if present and easy to do. DO NOT allow the victim to rub their eyes or keep their eyes closed. Seek medical attention if symptoms occur.

Ingestion:
If swallowed, do not induce vomiting. Immediately rinse mouth with water. Never give anything by mouth to an unconscious person. If not breathing, give artificial respiration. Seek immediate medical attention.

Symptoms Caused by Exposure:
Inhalation: May cause respiratory discomfort. Inhalation of high concentrations may cause effects similar to ingestion.
Skin Contact: May cause mechanical skin irritation. May cause an allergic skin reaction.
Eye Contact: May cause transient eye irritation.
Ingestion: Harmful if swallowed. May cause headache, dizziness, weakness and nausea.

5 Fire Fighting Measures

Suitable Extinguishing Media:
Water fog, foam, dry chemical or carbon dioxide. Do not use full water jet as it may spread the fire of cause a violent steam eruption.

Specific Hazards Arising from the Chemical:
Hazardous combustion products include oxides of carbon and nitrogen, hydrogen fluorides and acrid smoke.
Product is not flammable, but may burn if heated.
Containers close to fire should be removed if safe to do so. Use water spray to cool fire exposed containers.

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Product Name: ENSNARE PRO 50 SC

(Contd. of page 2)

Special Protective Equipment and Precautions for Fire Fighters:
When fighting a major fire wear self-contained breathing apparatus and protective equipment.

6 Accidental Release Measures

Personal Precautions, Protective Equipment and Emergency Procedures:
Wear approved respiratory protection, chemical resistant gloves, protective clothing and safety boots. Evacuate all non-essential personnel from affected area. Do not breathe vapours. Ensure adequate ventilation. Extinguish all sources of ignition. Avoid sparks and open flames. No smoking.

Environmental Precautions:
In the event of a major spill, prevent spillage from entering drains or water courses.

Methods and Materials for Containment and Cleaning Up:
Stop leak if safe to do so. Place leaking containers in a containment vessel or bunded area. Is possible recover the spilt material by pumping, or otherwise absorb the spill with sand, earth, vermiculite or some other absorbent material. Collect the spilled material and place into a suitable container for disposal.

7 Handling and Storage

Precautions for Safe Handling:
Use of safe work practices are recommended to avoid eye or skin contact and inhalation of vapours. Use only outdoors or in a well-ventilated area.
Food, beverages and tobacco products should not be stored or consumed where this material is in use. Always wash hands before smoking, eating, drinking or using the toilet. Wash contaminated clothing and other protective equipment before storage or re-use. Contaminated work clothing must not be allowed out of the workplace. Provide eyewash fountains and safety showers in close proximity to points of potential exposure.

Conditions for Safe Storage:
Store in a cool, dry and well ventilated area. Keep in original container tightly closed when not in use. Protect containers from physical damage to prevent leaks. Protect from heat, sparks, open flames, hot surfaces and direct sunlight. Keep away from strong acids, oxidising agents, bases and reducing agents.
Do not store with food, feedstuff, fertilizers or seed.

8 Exposure Controls and Personal Protection

Exposure Standards:	
57-55-6 1,2-Propanediol	
WES	TWA: 474* 10** mg/m³, 150* ppm *vapour&particluates;**particulates only

Engineering Controls: Ensure adequate ventilation of the working area.

Respiratory Protection:
When spraying this product below 1 m in height wear a disposable Class P2 (particulate) respirator as a minimum. See Australian/New Zealand Standards AS/NZS 1715 and 1716 for more information.

Skin Protection:
Nitrile or neoprene gloves. See Australian/New Zealand Standard AS/NZS 2161 for more information. When selecting gloves for use against certain chemicals, the degradation resistance, permeation rate and permeation breakthrough time should be considered.
Occupational protective clothing (depending on conditions in which it has to be used, in particular as regards the period for which it is worn, which shall be determined on the basis of the seriousness of the risk, the frequency of exposure to the risk, the characteristics of the workstation of each worker and the performance of the protective clothing). See Australian/New Zealand Standard AS/NZS 4501 for more information.

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Product Name: ENSNARE PRO 50 SC

(Contd. of page 3)

Eye and Face Protection:
Eye and face protectors for protection against splashing materials or liquids. See Australian/New Zealand Standard AS/NZS 1337 for more information.

9 Physical and Chemical Properties

Appearance:	
Form:	Liquid
Colour:	Opaque white
Odour:	No information available
Odour Threshold:	No information available
pH-Value:	5.0 - 6.0
Melting point/freezing point:	Not applicable
Initial Boiling Point/Boiling Range:	~100 °C
Flash Point:	>100 °C
Flammability:	Product is not flammable.
Auto-ignition Temperature:	No information available
Decomposition Temperature:	No information available
Explosion Limits:	
Lower:	No information available
Upper:	No information available
Vapour Pressure:	No information available
Relative Density at 20 °C:	1.00 - 1.05
Vapour Density:	No information available
Evaporation Rate:	No information available
Solubility in Water:	Forms a suspension.
Partition Coefficient (n-octanol/water):	No information available
Viscosity:	No information available

10 Stability and Reactivity

Possibility of Hazardous Reactions: Hazardous polymerisation will not occur.

Chemical Stability: Stable at ambient temperature and under normal conditions of use.

Conditions to Avoid: Heat, sparks, open flames, hot surfaces and direct sunlight.

Incompatible Materials: Strong acids, oxidising agents, bases and reducing agents.

Hazardous Decomposition Products: Oxides of carbon and nitrogen, hydrogen fluorides and acrid smoke.

11 Toxicological Information

Toxicity:

LD_{50}/LC_{50} Values Relevant for Classification:		
57-55-6 1,2-Propanediol		
Oral	LD_{50}	2000 mg/kg (rat)
Dermal	LD_{50}	20800 mg/kg (rabbit)
173584-44-6 Indoxacarb (ISO)		
Oral	LD_{50}	268 mg/kg (rat)
Dermal	LD_{50}	>5000 mg/kg (rat)
Inhalation	LC_{50}	>5.5 mg/l (rat)

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Safety Data Sheet
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Product Name: ENSNARE PRO 50 SC

(Contd. of page 4)

ENSNARE PRO 50 SC		
Oral	LD_{50}	3537 mg/kg (Estimated)

Acute Health Effects
Inhalation:
May cause respiratory discomfort. Inhalation of high concentrations may cause effects similar to ingestion.
Skin: May cause mechanical skin irritation. May cause an allergic skin reaction.
Eye: May cause transient eye irritation.
Ingestion: Harmful if swallowed. May cause headache, dizziness, weakness and nausea.

Skin Corrosion / Irritation: Based on classification principles, the classification criteria are not met.

Serious Eye Damage / Irritation: Based on classification principles, the classification criteria are not met.

Respiratory or Skin Sensitisation: May cause an allergic skin reaction.

Germ Cell Mutagenicity: Based on classification principles, the classification criteria are not met.

Carcinogenicity: This product does NOT contain any IARC listed chemicals.

Reproductive Toxicity: Based on classification principles, the classification criteria are not met.

Specific Target Organ Toxicity (STOT) - Single Exposure:
Based on classification principles, the classification criteria are not met.

Specific Target Organ Toxicity (STOT) - Repeated Exposure:
May cause damage to organs through prolonged or repeated exposure.

Aspiration Hazard: Based on classification principles, the classification criteria are not met.

Chronic Health Effects:
Prolonged or repeated exposure may cause Central Nervous System (CNS) effects such as tremors, incoordination and disorientation. Repeated inhalation or skin contact may cause sensitisation.

Existing Conditions Aggravated by Exposure:
Persons with pre-existing skin or respiratory conditions are advised to limit or avoid contact.

Additional toxicological information:
Tremors and impaired mobility have been observed in clinical studies.

The Australian Acceptable Daily Intake (ADI) for indoxacarb for a human is 0.01 mg/kg/day, set for the public for daily, lifetime exposure. This is based on the NOAEL of 1 mg/kg/day, the level determined to show no effects during long term exposure for the most sensitive indicators and the most sensitive species.
(Ref: Australian Pesticides and Veterinary Medicines Authority, 'Acceptable Daily Intakes for Agricultural and Veterinary Chemicals', 2017).

12 Ecological Information

Ecotoxicity:
Indoxacarb is harmful to terrestrial vertebrates and invertebrates.
Honey bee toxicity: 0.094 µg/bee.

Aquatic toxicity:	
173584-44-6 Indoxacarb (ISO)	
EC_{50}	0.11 mg/l (algae)
	0.60 mg/l (daphnia)
LC_{50}	0.65 mg/l (fish)

Toxic to aquatic life.

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Product Name: ENSNARE PRO 50 SC

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Persistence and Degradability:
This product is not considered to be persistent and undergoes moderately fast hydrolysis.

Bioaccumulative Potential:
Indoxacarb is considered to be moderately bioaccumulative.
Indoxacarb has a Bioconcentration Factor (BCF) of 520.

Mobility in Soil:
This product is not readily soluble in water and so is likely to have low mobility in the environment.
Other adverse effects: No further relevant information available.

13 Disposal Considerations

Disposal Methods and Containers: Dispose according to applicable local and state government regulations.

Special Precautions for Landfill or Incineration:
Please consult your state Land Waste Management Authority for more information.

14 Transport Information

UN Number Not regulated

Proper Shipping Name Not regulated

Dangerous Goods Class Not regulated

Packing Group: Not regulated

15 Regulatory Information

Australian Inventory of Chemical Substances:	
57-55-6	1,2-Propanediol
2634-33-5	1,2-benzisothiazol-3(2H)-one

Standard for the Uniform Scheduling of Drugs and Poisons (SUSMP) - Poison Schedule:
Poisons Schedule: 6

16 Other Information

Date of Preparation or Last Revision: 19.01.2018

Prepared by: MSDS.COM.AU Pty Ltd www.msds.com.au

Abbreviations and acronyms:
GHS: Globally Harmonised System of Classification and Labelling of Chemicals
CAS: Chemical Abstracts Service (division of the American Chemical Society)
LC_{50}: Lethal concentration, 50 percent
LD_{50}: Lethal dose, 50 percent
IARC: International Agency for Research on Cancer
STEL: Short Term Exposure Limit
TWA: Time Weighted Average
NES: National Exposure Standard (Safe Work Australia - Workplace Exposure Standards For Airborne Contaminants)
Acute Toxicity (Oral) 3: Acute toxicity – Category 3
Acute Toxicity (Inhalation) 4: Acute toxicity – Category 4
Skin Corrosion/Irritation 2: Skin corrosion/irritation – Category 2
Serious Eye Damage/Irritation 1: Serious eye damage/eye irritation – Category 1
Skin Sensitisation 1: Skin sensitisation, Hazard Category 1
Skin Sensitisation 1B: Skin sensitisation, Hazard Category 1B
STOT RE 1: Specific target organ toxicity (repeated exposure) – Category 1
STOT RE 2: Specific target organ toxicity (repeated exposure) – Category 2
Aquatic Acute 1: Hazardous to the aquatic environment, short-term (Acute). Category 1
Aquatic Acute 2: Hazardous to the aquatic environment, short-term (Acute). Category 2

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Product Name: ENSNARE PRO 50 SC

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Aquatic Chronic 1: Hazardous to the aquatic environment, long-term (Chronic). Category 1

Disclaimer

This SDS is prepared in accord with the Safe Work Australia document “Code of Practice for the Preparation of Safety Data Sheets for Hazardous Chemicals - February 2016”

The information contained in this safety data sheet is provided in good faith and is believed to be accurate at the date of issuance. Sundew Solutions Pty Ltd makes no representation of the accuracy or comprehensiveness of the information and to the full extent allowed by law excludes all liability for any loss or damage related to the supply or use of the information in this material safety data sheet. MSDS.COM.AU Pty Ltd is not in a position to warrant the accuracy of the data herein. The user is cautioned to make their own determinations as to the suitability of the information provided to the particular circumstances in which the product is used.

This SDS is prepared in accord with the SWA document "Preparation of Safety Data Sheets for Hazardous Chemicals - Code of Practice" (Feb 2016).

SAFETY DATA SHEET

HEALTH · HYGIENE · HOME

1. Identification of the material and supplier

Product name : Mortein Powergard DIY Indoor & Outdoor Surface Spray

SDS # : D0107093 v11.0L

Formulation # : FF0167891 v5.0

Supplier :
AUSTRALIA
RB (Hygiene Home) Australia Pty Ltd
ABN: 58 629 549 506
680 George St , Sydney, NSW 2000
Tel: +61 (0)2 9857 2000

NEW ZEALAND
RB (Hygiene Home) New Zealand Limited
Company number: 7097753
2 Fred Thomas Drive, Takapuna
Auckland , New Zealand 0622
Tel: +64 9 484 1400

Poison Information contact: : Australia - 13 11 26
New Zealand - 0800 764 766 or 0800 POISON

Material uses : Domestic Insecticide Spray

Product use : Consumer use

Section 2. Hazard(s) identification

Classification of the substance or mixture : Not classified

HSNO Classification : 9.1A, 9.4B

GHS label elements

Signal word : **No signal word.**

Hazard statements : **No known significant effects or critical hazards.**

Precautionary statements

General : Read label before use. Keep out of reach of children. If medical advice is needed, have product container or label at hand.

Prevention : Wash hands thoroughly after handling.

Response : Not applicable.

Storage : Not applicable.

Disposal : Dispose of contents/container in accordance with the local regulations.

Supplemental label elements : Not applicable.

Additional information : No known significant effects or critical hazards.

Recommendations : No known significant effects or critical hazards.

Other hazards which do not result in classification : None known.

Section 3. Composition and ingredient information

Substance/mixture : Mixture

Ingredient name	% (w/w)	CAS number
deltamethrin (ISO)	<0.1	52918-63-5

Other Non-hazardous ingredients to 100%

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

Eye contact : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention if irritation occurs.

Inhalation : Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.

Skin contact : Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.

Ingestion : Wash out mouth with water. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur.

Most important symptoms/effects, acute and delayed

Potential acute health effects

Eye contact : No known significant effects or critical hazards.

Inhalation : No known significant effects or critical hazards.

Skin contact : No known significant effects or critical hazards.

Ingestion : No known significant effects or critical hazards.

Over-exposure signs/symptoms

Eye contact : No specific data.

Inhalation : No specific data.

Skin contact : No specific data.

Ingestion : No specific data.

Indication of immediate medical attention and special treatment needed, if necessary

Notes to physician : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

Specific treatments : No specific treatment.

Protection of first-aiders : No action shall be taken involving any personal risk or without suitable training.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media : Use an extinguishing agent suitable for the surrounding fire.

Unsuitable extinguishing media : None known.

Specific hazards arising from the chemical : No specific fire or explosion hazard.

Section 5. Fire-fighting measures

Hazardous thermal decomposition products : No specific data.

Special protective actions for fire-fighters : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

Special protective actions for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

: •3Z

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Put on appropriate personal protective equipment.

For emergency responders : If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

Environmental precautions : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods and materials for containment and cleaning up

Small spill : Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

Large spill : Stop leak if without risk. Move containers from spill area. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

See Section 1 for emergency contact information.

See Section 8 for information on appropriate personal protective equipment.

See Section 13 for additional waste treatment information.

Section 7. Handling and storage

Precautions for safe handling

Protective measures : Put on appropriate personal protective equipment (see Section 8).

Advice on general occupational hygiene : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

Section 7. Handling and storage

Conditions for safe storage, including any incompatibilities : Do not store above the following temperature: 40°C (104°F). Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

Do not store above the following temperature : 40 °C

Section 8. Exposure controls and personal protection

Control parameters

Australia

Occupational exposure limits

None.

New Zealand

Occupational exposure limits : **No exposure standard allocated.**

Appropriate engineering controls : Good general ventilation should be sufficient to control worker exposure to airborne contaminants.

Environmental exposure controls : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: safety glasses with side-shields.

Skin protection

Hand protection : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.

Body protection : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Other skin protection : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory protection : Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use.

Section 9. Physical and chemical properties

Appearance

Physical state : Liquid. [Viscous]

Color : Off-white.

Odor : Odorless. [Slight]

Odor threshold : Not available.

pH : 6.5 to 7.5 [Conc. (% w/w): 100%]

Melting point : Not available.

Boiling point : Not available.

Flash point : Closed cup: >93.3°C (>199.9°F)

Evaporation rate : Not available.

Flammability (solid, gas) : Not available.

Lower and upper explosive (flammable) limits : Not available.

Vapor pressure : Not available.

Vapor density : Not available.

Relative density : 0.99 to 1.01

Solubility : Easily soluble in the following materials: cold water and hot water.

Solubility in water : Not available.

Partition coefficient: n-octanol/water : Not available.

Auto-ignition temperature : Not available.

Decomposition temperature : Not available.

Viscosity : Dynamic (room temperature): 900 to 1400 mPa·s (900 to 1400 cP)

Flow time (ISO 2431) : Not available.

Section 10. Stability and reactivity

Reactivity : No specific test data related to reactivity available for this product or its ingredients.

Chemical stability : The product is stable.

Possibility of hazardous reactions : Under normal conditions of storage and use, hazardous reactions will not occur.

Conditions to avoid : No specific data.

Incompatible materials : No specific data.

Hazardous decomposition products : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Not available.

Conclusion/Summary : Based on available data, the classification criteria are not met.

Irritation/Corrosion

Not available.

Conclusion/Summary

Section 11. Toxicological information

Skin : Based on available data, the classification criteria are not met.

Eyes : Based on available data, the classification criteria are not met.

Respiratory : Based on available data, the classification criteria are not met.

Sensitization

Not available.

Conclusion/Summary

Skin : Based on available data, the classification criteria are not met.

Respiratory : Based on available data, the classification criteria are not met.

Mutagenicity

Not available.

Conclusion/Summary : Based on available data, the classification criteria are not met.

Carcinogenicity

Not available.

Conclusion/Summary : Based on available data, the classification criteria are not met.

Reproductive toxicity

Not available.

Conclusion/Summary : Based on available data, the classification criteria are not met.

Teratogenicity

Not available.

Conclusion/Summary : Based on available data, the classification criteria are not met.

Specific target organ toxicity (single exposure)

Not available.

Specific target organ toxicity (repeated exposure)

Not available.

Aspiration hazard

Not available.

Information on the likely routes of exposure : Not available.

Potential acute health effects

Eye contact : No known significant effects or critical hazards.

Inhalation : No known significant effects or critical hazards.

Skin contact : No known significant effects or critical hazards.

Ingestion : No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact : No specific data.

Inhalation : No specific data.

Skin contact : No specific data.

Ingestion : No specific data.

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Section 11. Toxicological information

Long term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Potential chronic health effects

Not available.

Conclusion/Summary : Based on available data, the classification criteria are not met.

General : No known significant effects or critical hazards.

Carcinogenicity : No known significant effects or critical hazards.

Mutagenicity : No known significant effects or critical hazards.

Teratogenicity : No known significant effects or critical hazards.

Developmental effects : No known significant effects or critical hazards.

Fertility effects : No known significant effects or critical hazards.

Numerical measures of toxicity

Acute toxicity estimates

Not available.

Section 12. Ecological information

Toxicity

Not available.

Conclusion/Summary : Based on Calculation Method: Very toxic to aquatic life with long lasting effects.

Persistence and degradability

Not available.

Bioaccumulative potential

Not available.

Mobility in soil

Soil/water partition coefficient (K_{OC}) : Not available.

Other adverse effects : No known significant effects or critical hazards.

Section 13. Disposal considerations

Disposal methods : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Section 14. Transport information

	ADG	ADR/RID	IMDG	IATA
UN number	UN3082	UN3082	UN3082	UN3082
UN proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (deltamethrin (ISO))	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (deltamethrin (ISO))	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (deltamethrin (ISO))	Environmentally hazardous substance, liquid, n.o.s. (deltamethrin (ISO))
Transport hazard class(es)	9 	9 	9 	9 
Packing group	III	III	III	III
Environmental hazards	Yes.	Yes.	Yes.	Yes.

Additional information

ADG : The product is not regulated as a dangerous good when transported by road or rail in either an IBC, or in other container types if ≤500 kg. This product is not regulated as a dangerous good when transported in sizes of ≤5 L or ≤5 kg, provided the packagings meet the general provisions of 4.1.1.1, 4.1.1.2 and 4.1.1.4 to 4.1.1.8.
Hazchem code •3Z
Special provisions 274, 331, 335, AU01

ADR/RID : This product is not regulated as a dangerous good when transported in sizes of ≤5 L or ≤5 kg, provided the packagings meet the general provisions of 4.1.1.1, 4.1.1.2 and 4.1.1.4 to 4.1.1.8.
Hazard identification number 90
Limited quantity 5 L
Special provisions 274, 335, 601, 375
Tunnel code (E)

IMDG : This product is not regulated as a dangerous good when transported in sizes of ≤5 L or ≤5 kg, provided the packagings meet the general provisions of 4.1.1.1, 4.1.1.2 and 4.1.1.4 to 4.1.1.8.
Emergency schedules F-A, S-F
Special provisions 274, 335, 969

IATA : This product is not regulated as a dangerous good when transported in sizes of ≤5 L or ≤5 kg, provided the packagings meet the general provisions of 5.0.2.4.1, 5.0.2.6.1.1 and 5.0.2.8.
Quantity limitation Passenger and Cargo Aircraft: 450 L. Packaging instructions: 964. Cargo Aircraft Only: 450 L. Packaging instructions: 964. Limited Quantities - Passenger Aircraft: 30 kg. Packaging instructions: Y964.
Special provisions A97, A158, A197

Special precautions for user : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Transport in bulk according to Annex II of MARPOL and the IBC Code : Not available.

Section 15. Regulatory information

Standard Uniform Schedule of Medicine and Poisons

Not Scheduled

Model Work Health and Safety Regulations - Scheduled Substances

No listed substance

Australia inventory (AICS) : Not applicable

New Zealand Inventory of Chemicals (NZIoC) : Not applicable

HSNO Group Standard : Pesticide.

HSNO Approval Number : HSR000120

Approved Handler Requirement : Yes.

Australian Pesticides and Veterinary Medicines Authority (APVMA) Number.: 62985

Tracking Requirement : No.

Section 16. Any other relevant information

Key to abbreviations : ADG = Australian Dangerous Goods
ATE = Acute Toxicity Estimate
BCF = Bioconcentration Factor
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
IATA = International Air Transport Association
IBC = Intermediate Bulk Container
IMDG = International Maritime Dangerous Goods
LogPow = logarithm of the octanol/water partition coefficient
MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
NOHSC = National Occupational Health and Safety Commission
SUSMP = Standard Uniform Schedule of Medicine and Poisons
UN = United Nations

Date of issue / Date of revision : 30/06/2020

Version : 11.0L

Procedure used to derive the classification

Classification	Justification
Not classified.	

References : Not available.

Indicates information that has changed from previously issued version.

Notice to reader

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Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

Please read all labels carefully before using product.