Heirloom Body Care

Unit 9, 28 Coombes Drive, Penrith NSW 2750 Australia | www.heirloombodycare.com.au | 02 4722 2123

LIQUID GERMALL PLUS SAFETY DATA SHEET

SECTION 1: **MATERIAL & SUPPLY COMPANY IDENTIFICATION**

1.1 Product Identifiers

Product Name:	Liquid Germall Plus
Chemical Name:	Not available
CAS Number.:	57-55-6 78491-02-8 5546-53-6

1.2 Relevant identified uses of the substance or mixture

Use according to manufacturer's directions
Preservative

1.3 Supplier Details

Supplier:	Heirloom Body Care Pty Ltd
Address:	Unit 9, 28 Coombes Drive Penrith NSW 2750 Australia
Telephone:	02 4722 2123
Fax	02 4722 2904

1.4 Information in case of emergency

Poisons Information Centre	13 11 26

SECTION 2: **HAZARD IDENTIFICATION**

2.1 Classification of the substance / preparation

HAZARDOUS CHEMICAL. NON-DANGEROUS GOODS. According to the WHS Regulations and the ADG Code.

HAZARD RATINGS

Flammability 1
Toxicity 1
Body Contact 1
Reactivity 1
Chronic 2

Where:
0 = Minimum
1 = Low
2 = Moderate
3 = High
4 = Extreme

Poisons Schedule: Not applicable
Label Elements

GHS Label Elements

Signal Word Warning

Hazard Statements

H317	May cause an allergic reaction
H412	Harmful to aquatic life with long lasting effects

Precautionary Statements Prevention

P280	Wear protective gloves/protective clothing/eye protection/face protection
P261	Avoid breathing mist/vapours/spray
P273	Avoid release to the environment
P272	Contaminated work clothing should not be allowed out of the workplace

Precautionary Statements Response

P363	Wash contaminated clothing before reuse
P302+P352	IF ON SKIN: Wash with plenty of soap and water
P333+P313	IF skin irritation or rash occurs: Get medical advice/attention

Precautionary Statement(s) Storage

Not applicable

Precautionary statement Disposal

P501	Dispose of contents/container in accordance with local regulations

SECTION 3: **PRODUCT COMPOSITION**

3.1 Substances

Mixtures

CAS No	%[weight]	Name
57-55-6	<60	Propylene glycol
78491-02-8	40	Diazolidinyl urea
55406-53-6	0.4	3-iodo-2-propynyl butyl carbamate

SECTION 4 FIRST AID MEASURES

SECTION 4: **FIRST AID**

4.1 Description of first aid measures

Eye Contact:	If this product comes in contact with eyes: ▪ Wash out immediately with fresh running water. ▪ Ensure complete irrigation fo 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 or hair 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.
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. ▪ If spontaneous vomiting appears imminent or occurs, hold patient's head down, lower than their hips to help avoid possible aspiration of vomitus.

4.2 Indication of immediate medical attention and any special treatment required

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.

- Polyethylene glycols are generally poorly absorbed orally and are mostly unchanged by the kidney.
- Dermal absorption can occur across damaged skin (e.g. through burns) leading to increased osmolality, anion gap metabolic acidosis, elevated calcium, low ionised calcium, CNS depression and renal failure.
- Treatment consists of supportive care.

[Ellenhorn and Barceloux: Medical Toxicology]

Propylene glycol is primarily a CNS depressant in large doses and may cause hypoglycaemia, lactic acidosis and seizures.

- The usual measures are supportive care and decontamination (Ipecac/ lavage/ activated charcoal/ cathartics), within 2 hours of exposure should suffice.
- Check the anion gap, arterial pH, renal function and glucose levels.

Ellenhorn and Barceloux: Medical Toxicology

SECTION 5: **FIRE FIGHTING MEASURES**

5.1 Extinguishing Media

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

5.2 Special hazards arising from the substance or mixture

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

5.3 Advice for firefighters

Fire Fighting	▪ Alert Fire Brigade and tell them location and nature of hazard. ▪ Wear breathing apparatus plus protective gloves in the event of a fire. ▪ Prevent, by any means available, spillage from entering drains or water courses. ▪ Use water delivered as a fine spray to control fire and cool adjacent area.
Fire/Explosion Hazard	▪ Combustible.. ▪ Slight fire hazard when exposed to heat or flame. ▪ Heating may cause expansion or decomposition leading to violent rupture of containers. ▪ On combustion, may emit toxic fumes of carbon monoxide (CO). Combustion products include:, carbon dioxide (CO2), nitrogen oxides (NOx), other pyrolysis products typical of burning organic materialMay emit poisonous fumes.May emit corrosive fumes.
HAZCHEM	Not Applicable

SECTION 6: **ACCIDENTAL RELEASE MEASURES**

6.1 Personal precautions, protective equipment and emergency procedures

See section 8

6.2 Environmental precautions

See section 12

6.3 Methods and materials 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	Moderate hazard ▪ Clear area of personnel and move upwind. ▪ Alert Fire Brigade and tell them location and nature of hazard. ▪ Wear breathing apparatus plus protective gloves.

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

SECTION 7: **HANDLING AND STORAGE**

7.1 Precautions for safe handling

Safe handling	▪ 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. ▪ Keep containers securely sealed. ▪ No smoking, naked lights or ignition sources. ▪ Store in a cool, dry, well-ventilated area.

7.2 Conditions for storage

Suitable container	▪ Metal can or drum ▪ Packaging as recommended by the manufacturer. ▪ Check all containers are clearly labelled and free from leaks.
Storage incompatibility	▪ Glycols and their ethers undergo violent decomposition in contact with 70% perchloric acid. This seems likely to involve formation of the glycol perchlorate esters (after scission of ethers) which are explosive, those of ethylene glycol and 3-chloro-1,2-propanediol being more powerful than glyceryl nitrate, and the former so sensitive that it explodes on addition of water. Alcohols ▪ are incompatible with strong acids, acid chlorides, acid anhydrides, oxidising and reducing agents. ▪ reacts, possibly violently, with alkaline metals and alkaline earth metals to produce hydrogen ▪ react with strong acids, strong caustics, aliphatic amines, isocyanates, acetaldehyde, benzoyl peroxide, chromic acid, chromium oxide, dialkylzinc, dichlorine oxide, ethylene oxide, hypochlorous acid, isopropyl chlorocarbonate, lithium tetrahydroaluminate, nitrogen dioxide, pentafluoro guanidine, phosphorus halides, phosphorus pentasulfide, tangerine oil, triethylaluminum, triisobutylaluminum ▪ should not be heated above 49 deg. C. when in contact with aluminium equipment Formaldehyde: ▪ is a strong reducing agent

	▪ may polymerise in air unless properly inhibited (usually with methanol up to 15%) and stored at controlled temperatures ▪ will polymerize with active organic material such as phenol ▪ reacts violently with strong oxidisers, hydrogen peroxide, potassium permanganate, acrylonitrile, caustics (sodium hydroxide, yielding formic acid and flammable hydrogen), magnesium carbonate, nitromethane, nitrogen oxides (especially a elevated temperatures), peroxyformic acid ▪ is incompatible with strong acids (hydrochloric acid forms carcinogenic bis(chloromethyl)ether*), amines, ammonia, aniline, bisulfides, gelatin, iodine,magnesite, phenol, some monomers, tannins, salts of copper, iron, silver. ▪ acid catalysis can produce impurities: methylal, methyl formate Aqueous solutions of formaldehyde: ▪ slowly oxidise in air to produce formic acid ▪ attack carbon steel Concentrated solutions containing formaldehyde are: ▪ unstable, both oxidising slowly to form formic acid and polymerising; in dilute aqueous solutions formaldehyde appears as monomeric hydrate (methylene glycol) - the more concentrated the solution the more polyoxymethylene glycol occurs as oligomers and polymers (methanol and amine-containing compounds inhibit polymer formation) ▪ readily subject to polymerisation, at room temperature, in the presence of air and moisture, to form paraformaldehyde (8-100 units of formaldehyde), a solid mixture of linear polyoxymethylene glycols containing 90-99% formaldehyde; a cyclic trimer, trioxane (CH2O3), may also form Flammable and/or toxic gases are generated by the combination of aldehydes with azo, diazo compounds, dithiocarbamates, nitrides, and strong reducing agents *The empirical equation may be used to determine the concentration of bis(chloromethyl)ether (BCME) formed by reaction with HCl: log(BCME)ppb = -2.25 + 0.67• log(HCHO) ppm + 0.77• log(HCl)ppm Assume values for formaldehyde, in air, of 1 ppm and for HCl of 5 ppm, resulting BCME concentration, in air, would be 0.02 ppb.

SECTION 8: **EXPOSURE CONTROLS AND PERSONAL PROTECTION**

8.1 Control parameters

OCCUPATIONAL EXPOSURE LIMITS (OEL)

Ingredient Data

Source	Ingredient	Material Name	TWA	STEL	Peak	Notes
Australia Exposure Standards	Propylene Glycol	Propane-1,2-diol total:(vapour & particulates) / Propane-1,2-diol: particulates only	474 mg/m3/10 mg/m3/150ppm	Not available	Not available	Not available

Emergency Limits

Ingredient	**Material name**	**TEEL-1**	**TEEL-2**	**TEEL-3**
propylene glycol	propylene glycols	30 mg/m3	80 mg/m3	480 mg/m3
propylene glycol	propylene glyco; (1,2-Propanediol)	30 mg/m3	1300 mg/m3	7900 mg/m3
3-iodo-2-propynyl butyl carbamate	butyl-3-iodo-2-propynyl carbamate	3.3 mg/m3	36 mg/m3	220 mg/m3

Ingredient	Original IDLH	Revised IDLH
propylene glycol	Not Available	Not Available
diazolidinyl urea	Not Available	Not Available
3-iodo-2-propynyl butyl carbamate	Not Available	Not Available

8.2 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 "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 NOTE: ▪ The material may produce skin sensitisation in predisposed individuals. Care must be taken, when removing gloves and other protective equipment, to avoid all possible skin contact. ▪ Contaminated leather items, such as shoes, belts and watch-bands should be removed and destroyed. 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. ▪ P.V.C. apron. ▪ Barrier cream.

RECOMMENDED MATERIALS

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:

Liquid Germall Plus

Material	**CPI**
PE/EVAL/PE	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 A-P 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	A-AUS / Class 1 P2	-	A-PAPR-AUS / Class 1 P2
up to 25 x ES	Air-line**	A-2 P2	A-PAPR-P2
up to 50 x ES	-	A-3 P2	-
50+ xES		Air-line*	-

* - Continuous-flow; ** - Continuous-flow or positive pressure demand

^ - 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.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1 General information

Appearance	Colourless liquid with a characteristic odour; mixes with water.
Physical state	Liquid
Odour:	Not available
Odour threshold	Not available
pH (as supplied)	Not available
Melting point & Freezing point:	-63.89

Initial boiling point:	192.22
Flash point:	98.89
Evaporation rate	Not available
Flammability	Not applicable
Upper & lower flammability or explosive limits:	Not available
Vapour pressure (kPa):	0.010@20 degC
Solubility in water (g/litre @ 20 °C):	Miscible
Vapour Density (air = 1):	Not available
Relative density (Water=1):	1.15-1.25
Partition coefficient n-octanol/water	Not available
Auto ignition T°C:	Not available
Decomposition temperature:	Not available
Viscosity:	Not available
Molecular weight (g/mol)	Not applicable
Taste	Not available
Explosive properties:	Not available
Oxidising properties:	Not available
Surface Tension (dyn/cm or mN/m)	Not available
Volatile Component (%vol)	Not available
Gas Group	Not available
pH as a solution (1%)	Not available
VOC g/L	Not available

SECTION 10: **STABILITY AND REACTIVITY**

10.1 Reactivity

See section 7

10.2 Chemical Stability

- Unstable in the presence of incompatible materials
- Product is considered stable
- Hazardous polymerization with not occur

10.3 Possibility of hazardous reactions

See section 7

10.4 Conditions to avoid

See section 7

10.5 Incompatible materials

See section 7

10.6 Hazardous decomposition products

See section 5

SECTION 11: **TOXICOLOGICAL INFORMATION**

11.1 Information on the toxicological effects

Inhaled	▪ 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. ▪ Inhalation of vapours or aerosols (mists, fumes), generated by the material during the course of normal handling, may be damaging to the health of the individual. ▪ Aliphatic alcohols with more than 3-carbons cause headache, dizziness, drowsiness, muscle weakness and delirium, central depression, coma, seizures and behavioural changes. Secondary

	respiratory depression and failure, as well as low blood pressure and irregular heart rhythms, may follow. ▪ Inhalation hazard is increased at higher temperatures. ▪ Acute effects from inhalation of high vapour concentrations may be chest and nasal irritation with coughing, sneezing, headache and even nausea.
Ingestion	▪ Swallowing of the liquid may cause aspiration into the lungs with the risk of chemical pneumonitis; serious consequences may result. (ICSC13733) ▪ Accidental ingestion of the material may be damaging to the health of the individual. ▪ If swallowed, the toxic effects of glycols (dihydric alcohols) are similar to those of alcohol, with depression of the central nervous system, nausea, vomiting, and degenerative changes in the liver and kidney. ▪ Ingestion of propylene glycol produced reversible central nervous system depression in humans following ingestion of 60 ml. Symptoms included increased heart-rate (tachycardia), excessive sweating (diaphoresis) and grand mal seizures in a 15 month child who ingested large doses (7.5 ml/day for 8 days) as an ingredient of vitamin preparation. ▪ Excessive repeated ingestions may cause hypoglycaemia (low levels of glucose in the blood stream) among susceptible individuals; this may result in muscular weakness, incoordination and mental confusion. ▪ Very high doses given during feeding studies to rats and dogs produce central nervous system depression (although one-third of that produced by ethanol),haemolysis and insignificant kidney changes. ▪ Overexposure to non-ring alcohols causes nervous system symptoms. These include headache, muscle weakness and inco-ordination, giddiness, confusion, delirium and coma.
Skin Contact	▪ Repeated exposure may cause skin cracking, flaking or drying following normal handling and use. ▪ There is some evidence to suggest that the material may cause moderate 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. ▪ A single prolonged exposure is not likely to result in the material causing harm. However, when applied in large quantities to damaged skin as a topical preparation or by contact with clothing accidentally contaminated by the material, there may be the potential to absorb the material in harmful amounts. ▪ Most liquid alcohols appear to act as primary skin irritants in humans. Significant percutaneous absorption occurs in rabbits but not apparently in man. ▪ 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.
Eye	▪ Irritation of the eyes may produce a heavy secretion of tears (lachrymation). ▪ There is some evidence that material may produce eye irritation in some persons and produce eye damage 24 hours or more after installation. Moderate inflammation may be expected with redness; conjunctivitis may occur with prolonged exposure.
Chronic	▪ Skin contact with the material is more likely to cause a sensitisation reaction in some persons compared to the general population. ▪ Based on experience with similar materials, there is a possibility that exposure to the material may reduce fertility in humans at levels which do not cause other toxic effects. ▪ Imidazole is structurally related, and has been used to counteract the effects of histamine. Imidazoles have been reported to disrupt male fertility, through disruption of the function of the testes. ▪ Respiratory sensitisation may result in allergic/asthma like responses; from coughing and minor breathing difficulties to bronchitis with wheezing, gasping. ▪ Propylene glycol is thought, by some, to be a sensitising principal following the regular use of topical creams by eczema patients. A study of 866 persons using a formulation containing propylene glycol in a patch test indicated that propylene glycol caused primary irritation in 16% of exposed individuals probably caused by dehydration. Undiluted propylene glycol was tested on 1556 persons in a 24 hour patch test. 12.5% showed reactions which were largely toxic (70%) or ▪ allergic in nature (30%).

Liquid Germall Plus	**TOXICITY**	**IRRITATION**
	Not Available	Not Available
propylene glycol	**TOXICITY**	**IRRITATION**
	Dermal (rabbit) LD50: >2000 mg/kg[1]	Eye (rabbit): 100 mg - mild
	Oral (rat) LD50: 20000 mg/kg[2]	Eye (rabbit): 500 mg/24h - mild
		Skin(human):104 mg/3d Intermit Mod
		Skin(human):500 mg/7days mild
diazolidinyl urea	**TOXICITY**	**IRRITATION**
	Dermal (rabbit) LD50: >2000 mg/kg[2]	Nil Reported
	Oral (rat) LD50: 2600 mg/kg[2]	
3-iodo-2-propynyl butyl carbamate	**TOXICITY**	**IRRITATION**
	dermal (rat) LD50: >2000 mg/kg[2]	* [Yoshitomi and Troy Chem.WPL]
	Inhalation (rat) LC50: 0.680 mg/l/4hr *[2]	Eye: Irritating
	Oral (rat) LD50: 1056 mg/kg[2]	Skin: Slight irritant

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

PROPYLENE GLYCOL

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.

The acute oral toxicity of propylene glycol is very low, and large quantities are required to cause perceptible health damage in humans. Serious toxicity generally occurs only at plasma concentrations over 1 g/L, which requires extremely high intake over a relatively short period of time. It would be nearly impossible to reach toxic levels by consuming foods or supplements, which contain at most 1 g/kg of PG. Cases of propylene glycol poisoning are usually related to either inappropriate intravenous administration or accidental ingestion of large quantities by children.The potential for long-term oral toxicity is also low.

DIAZOLIDINYL UREA

The following information refers to contact allergens as a group and may not be specific to this product.

Contact allergies quickly manifest themselves as contact eczema, more rarely as urticaria or Quincke's oedema. The pathogenesis of contact eczema involves a cell-mediated (T lymphocytes) immune reaction of the delayed type. Other allergic skin reactions, e.g. contact urticaria, involve antibody-mediated immune reactions.

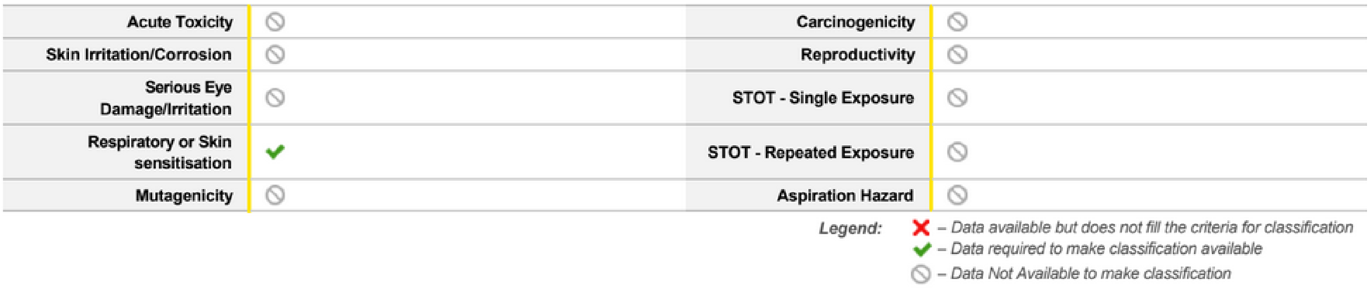
For imidazolidinyl urea and diazolidinyl urea:

At temperatures above 10 degrees Celsius, these can release formaldehyde. They cause reaction in a small proportion of persons with contact dermatitis. Skin sensitisation has occurred in animal testing. It has not been shown to cause skin irritation acutely, however extended exposure may cause mild inflammation and ulceration of the skin and decreased weight gain.

Formaldehyde generators (releasers) are often used as preservatives. The maximum authorised concentration of free formaldehyde is 0.2% and must be labelled with the warning sign "contains formaldehyde" where the concentration exceeds 0.05%.The use of formaldehyde-releasing preservatives ensures that the level of free formaldehyde in the products is always low but sufficient to inhibit microbial growth - it disrupts metabolism to cause death of the organism.

However there is a concern that formaldehyde generators can produce amines capable of causing cancers (nitrosamines) when used in formulations containing amines.

3-IODO-2-PROPYNYL BUTYL CARBAMATE	For 3-iodo-2-propynyl butyl carbamate (IPBC): Acute toxicity studies with IPBC show low toxicity except severe eye irritation. Animal testing showed that extended exposure may cause decreased weight gain and
increased	red cell and eosinophil counts. One study showed the possibility of increased breast cancer on extended contact. IPBC may cause defects in bone development at very high levels.



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 available but does not fill the criteria for classification*
✓ *– Data required to make classification available*
⃠ *– Data Not Available to make classification*

SECTION 12: **ECOLOGICAL INFORMATION**

Toxicity

Ingredient	Endpoint	Test Duration (hr)	Species	Value	Source
propylene glycol	LC50	96	Fish	710mg/L	4
propylene glycol	EC50	48	Crustacea	>1000mg/L	4
propylene glycol	EC50	96	Algae or other aquatic plants	10905.921mg/L	3
propylene glycol	EC50	384	Crustacea	311.145mg/L	3
propylene glycol	NOEC	168	Fish	98mg/L	4
diazolidinyl urea	LC50	96	Fish	>67mg/L	2
diazolidinyl urea	EC50	48	Crustacea	34.9mg/L	2
diazolidinyl urea	EC50	72	Algae or other aquatic plants	5.78mg/L	2
diazolidinyl urea	EC50	48	Crustacea	58mg/L	2
diazolidinyl urea	NOEC	72	Algae or other aquatic plants	1.6mg/L	2
3-iodo-2-propynyl butyl carbamate	LC50	96	Fish	0.067mg/L	4
3-iodo-2-propynyl butyl carbamate	EC50	48	Crustacea	0.04mg/L	5
3-iodo-2-propynyl butyl carbamate	EC50	96	Algae or other aquatic plants	1.978mg/L	3
3-iodo-2-propynyl butyl carbamate	EC50	96	Crustacea	0.0234mg/L	4
3-iodo-2-propynyl butyl carbamate	NOEC	48	Crustacea	<0.01mg/L	4

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

Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
Do NOT allow product to come in contact with surface waters or to intertidal areas below the mean high water mark. Do not contaminate water when cleaning equipment or disposing of equipment wash-waters.
Wastes resulting from use of the product must be disposed of on site or at approved waste sites.
For imidazolidinyl urea and diazolidinyl urea:
Diazolidinylurea is not readily biodegradable as only 24% ThCO2 was attained in a standard laboratory test, OECD 301B (CETOX 2000). According to a QSAR estimation (EPIWIN 1994) the logKow of diazolidinyl urea is –7.49 which implies that the potential bioaccumulation in aquatic organisms is expected to be low.
The toxicity of diazolidinylurea has been examined in test with fish (species not indicated) and Daphnia magna where LC50 and EC50 (48-h) were determined to > 100 mg/l and 35 mg/l, respectively (CETOX 2000).
Propylene glycol is known to exert high levels of biochemical oxygen demand (BOD) during degradation in surface waters. This process can adversely affect aquatic life by consuming oxygen needed by aquatic organisms for survival. Large

quantities of dissolved oxygen (DO) in the water column are consumed when microbial populations decompose propylene glycol.Sufficient dissolved oxygen levels in surface waters are critical for the survival of fish, macro-invertebrates, and other aquatic organisms.
DO NOT discharge into sewer or waterways.

Persistence and degradability

Ingredient	Persistence: Water/Soil	Persistence: Air
propylene glycol	LOW	LOW
3-iodo-2-propynyl butyl carbamate	HIGH	HIGH

Bioaccumulative potential

Ingredient	Bioaccumulation
propylene glycol	LOW (BCF = 1)
3-iodo-2-propynyl butyl carbamate	LOW (LogKOW = 2.4542)

Mobility in soil

Ingredient	Mobility
propylene glycol	HIGH (KOC = 1)
3-iodo-2-propynyl butyl carbamate	LOW (KOC = 365.3)

SECTION 13: **DISPOSAL CONSIDERATIONS**

13.1 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 or consult manufacturer for recycling options.
- Consult State Land Waste Authority for disposal.
- Bury or incinerate residue at an approved site.
- Recycle containers if possible, or dispose of in an authorised landfill.

SECTION 14: **TRANSPORT INFORMATION**

14.1 Labels Required

Marine Pollutant:	No
HAZCHEM:	Not applicable

14.2 Transportation hazard classes

Land transport (ADG): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

Air transport (ICAO-IATA / DGR): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

Sea transport (IMDG-Code / GGVSee): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

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

Not Applicable

SECTION 15: **REGULATORY INFORMATION**

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

Propylene glycol (57-55-6) is found on the following regulatory lists:

Australia Exposure standards
Australia Inventory of Chemical Substances (AICS)
Australia Hazardous Substances Information System - Consolidated Lists

Diazolidinyl Urea (78491-02-8) is found on the following regulatory lists

Australia Inventory of Chemical Substances (AICS)
Australia Hazardous Substances Information System - Consolidated Lists

3-Iodo-2-propynyl butyl carbamate (55406-53-6) is found on the following regulatory lists

Australia Inventory of Chemical Substances (AICS)
Australia Hazardous Substances Information System - Consolidated Lists

National Inventory Status

Australia – AICS	Y
Canada - DSL	Y
Canada – NDSL	N (3-iodo-2-propynl bytyl carbamate; propylene glycol; diazolidinyl urea
China – IECSC	Y
Europe - EINEC / ELINCS /NLP	Y
Japan - ENCS	N (diazolidinyl urea)
Korea - KECI	Y
New Zealand - NZIoC	Y
Philippines - PICCS	Y
USA - TSCA	Y

Y = All ingredients are on the inventory; N = Not determined or one or more ingredients are not on the inventory and are not exempt from listing(see specific ingredients in brackets)

SECTION 16: **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

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

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