



# Leaderart Permanent Marker Pen

Dy-Mark

Chemwatch Hazard Alert Code: 2

Chemwatch: 4784-02

Version No: 2.1.1.1

Material Safety Data Sheet according to NOHSC and ADG requirements

Issue Date: 01/01/2013

Print Date: 29/09/2014

Initial Date: Not Available

S.Local.AUS.EN

## SECTION 1 IDENTIFICATION OF THE SUBSTANCE / MIXTURE AND OF THE COMPANY / UNDERTAKING

### Product Identifier

Product name	Leaderart Permanent Marker Pen
Chemical Name	Not Applicable
Synonyms	! 08/07/2011, i70, i90
Proper shipping name	Not Applicable
Chemical formula	Not Applicable
Other means of identification	Not Available
CAS number	Not Applicable

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

Relevant identified uses	Use according to manufacturer's directions.
--------------------------	---

### Details of the manufacturer/importer

Registered company name	Dy-Mark	Leaderart Industries
Address	89 Formation Street Wacol 4076 QLD Australia	7, Jalan Kukoh, Tampoi, Johor Bahru, 80350 Johor Malaysia
Telephone	+61 7 3271 2222	+607 2364011
Fax	+61 7 3271 2751	+607 2361793
Website	Not Available	Not Available
Email	info@dy-mark.com.au	Not Available

### Emergency telephone number

Association / Organisation	Not Available	Not Available
Emergency telephone numbers	+61 403 186 708	Not Available
Other emergency telephone numbers	+61 403 186 708	Not Available

## SECTION 2 HAZARDS IDENTIFICATION

### Classification of the substance or mixture

**NON-HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS. According to NOHSC Criteria, and ADG Code.**

Poisons Schedule	Not Applicable
Risk Phrases	Not Applicable
Legend:	1. Classified by Chemwatch; 2. Classification drawn from HSIS; 3. Classification drawn from EC Directive 1272/2008 - Annex VI
GHS Classification	Not Applicable

### Label elements

GHS label elements	Not Applicable
--------------------	----------------

SIGNAL WORD	<b>NOT APPLICABLE</b>
-------------	-----------------------

### Hazard statement(s)

Not Applicable

### Supplementary statement(s)

Not Applicable

### CLP classification (additional)

Continued...

Not Applicable

**Precautionary statement(s): Prevention**

Not Applicable

**Precautionary statement(s): Response**

Not Applicable

**Precautionary statement(s): Storage**

Not Applicable

**Precautionary statement(s): Disposal**

Not Applicable

**Label elements**

Not Applicable

Relevant risk statements are found in section 2

<b>Indication(s) of danger</b>	Not Applicable
--------------------------------	----------------

**SAFETY ADVICE**

Not Applicable

**Other hazards**

	Inhalation and/or skin contact may produce health damage*.
	May produce discomfort of the eyes and respiratory tract*.
	Cumulative effects may result following exposure*.
	Limited evidence of a carcinogenic effect*.

**SECTION 3 COMPOSITION / INFORMATION ON INGREDIENTS**

**Substances**

See section below for composition of Mixtures

**Mixtures**

CAS No	%[weight]	Name
9003-07-0	43	<a href="#">polypropylene fibre</a>
Not Available	10	polyester
107-98-2	10	<a href="#">propylene glycol monomethyl ether - mixture of isomers</a>
9002-88-4	22	<a href="#">polyethylene</a>
64-17-5	5	<a href="#">ethanol</a>
Not Available	2-3	resin
71-36-3	2	<a href="#">n-butanol</a>
Not Available	0.5-2.5	solvent dyes
Not Available	1.5	acrylic
Not Available	0.1	cap-off additives

**SECTION 4 FIRST AID MEASURES**

**Description of first aid measures**

<b>Eye Contact</b>	<p>If this product comes in contact with the eyes:</p> <ul style="list-style-type: none"> <li>▶ Wash out immediately with fresh running water.</li> <li>▶ 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.</li> <li>▶ Seek medical attention without delay; if pain persists or recurs seek medical attention.</li> <li>▶ Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.</li> </ul>
<b>Skin Contact</b>	<p>If skin contact occurs:</p> <ul style="list-style-type: none"> <li>▶ Immediately remove all contaminated clothing, including footwear.</li> <li>▶ Flush skin and hair with running water (and soap if available).</li> <li>▶ Seek medical attention in event of irritation.</li> </ul> <p>In case of burns:</p> <ul style="list-style-type: none"> <li>▶ Immediately apply cold water to burn either by immersion or wrapping with saturated clean cloth.</li> <li>▶ <b>DO NOT remove or cut away clothing over burnt areas. DO NOT pull away clothing which has adhered to the skin as this can cause further injury.</b></li> <li>▶ <b>DO NOT break blister or remove solidified material.</b></li> <li>▶ Quickly cover wound with dressing or clean cloth to help prevent infection and to ease pain.</li> <li>▶ For large burns, sheets, towels or pillow slips are ideal; leave holes for eyes, nose and mouth.</li> <li>▶ <b>DO NOT apply ointments, oils, butter, etc. to a burn under any circumstances.</b></li> <li>▶ Water may be given in small quantities if the person is conscious.</li> <li>▶ Alcohol is not to be given under any circumstances.</li> <li>▶ Reassure.</li> <li>▶ Treat for shock by keeping the person warm and in a lying position.</li> <li>▶ Seek medical aid and advise medical personnel in advance of the cause and extent of the injury and the estimated time of arrival of the patient.</li> </ul>

Inhalation	<ul style="list-style-type: none"> <li>▶ If fumes or combustion products are inhaled remove from contaminated area.</li> <li>▶ Lay patient down. Keep warm and rested.</li> <li>▶ Prostheses such as false teeth, which may block airway, should be removed, where possible, prior to initiating first aid procedures.</li> <li>▶ 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.</li> <li>▶ Transport to hospital, or doctor.</li> </ul>
Ingestion	<ul style="list-style-type: none"> <li>▶ Immediately give a glass of water.</li> <li>▶ First aid is not generally required. If in doubt, contact a Poisons Information Centre or a doctor.</li> </ul>

#### Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

## SECTION 5 FIREFIGHTING MEASURES

### Extinguishing media

	<ul style="list-style-type: none"> <li>▶ Water spray or fog.</li> <li>▶ Alcohol stable foam.</li> <li>▶ Dry chemical powder.</li> <li>▶ Carbon dioxide.</li> </ul>
--	--

### 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	<ul style="list-style-type: none"> <li>▶ Alert Fire Brigade and tell them location and nature of hazard.</li> <li>▶ Wear breathing apparatus plus protective gloves.</li> <li>▶ Prevent, by any means available, spillage from entering drains or water courses.</li> <li>▶ Use water delivered as a fine spray to control fire and cool adjacent area.</li> </ul>
Fire/Explosion Hazard	<ul style="list-style-type: none"> <li>▶ Combustible solid which burns but propagates flame with difficulty; it is estimated that most organic dusts are combustible (circa 70%) - according to the circumstances under which the combustion process occurs, such materials may cause fires and / or dust explosions.</li> <li>▶ Organic powders when finely divided over a range of concentrations regardless of particulate size or shape and suspended in air or some other oxidizing medium may form explosive dust-air mixtures and result in a fire or dust explosion (including secondary explosions).</li> <li>▶ Avoid generating dust, particularly clouds of dust in a confined or unventilated space as dusts may form an explosive mixture with air, and any source of ignition, i.e. flame or spark, will cause fire or explosion. Dust clouds generated by the fine grinding of the solid are a particular hazard; accumulations of fine dust (420 micron or less) may burn rapidly and fiercely if ignited - particles exceeding this limit will generally not form flammable dust clouds; once initiated, however, larger particles up to 1400 microns diameter will contribute to the propagation of an explosion.</li> </ul>

## SECTION 6 ACCIDENTAL RELEASE MEASURES

### Personal precautions, protective equipment and emergency procedures

Minor Spills	<ul style="list-style-type: none"> <li>▶ Remove all ignition sources.</li> <li>▶ Clean up all spills immediately.</li> <li>▶ Avoid contact with skin and eyes.</li> <li>▶ Control personal contact with the substance, by using protective equipment.</li> </ul>
Major Spills	<p>Moderate hazard.</p> <ul style="list-style-type: none"> <li>▶ <b>CAUTION:</b> Advise personnel in area.</li> <li>▶ Alert Emergency Services and tell them location and nature of hazard.</li> <li>▶ Control personal contact by wearing protective clothing.</li> </ul>

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

## SECTION 7 HANDLING AND STORAGE

### Precautions for safe handling

Safe handling	<ul style="list-style-type: none"> <li>▶ Avoid all personal contact, including inhalation.</li> <li>▶ Wear protective clothing when risk of exposure occurs.</li> <li>▶ Use in a well-ventilated area.</li> <li>▶ Prevent concentration in hollows and sumps.</li> </ul>
Other information	<ul style="list-style-type: none"> <li>▶ Store in original containers.</li> <li>▶ Keep containers securely sealed.</li> <li>▶ Store in a cool, dry area protected from environmental extremes.</li> <li>▶ Store away from incompatible materials and foodstuff containers.</li> </ul>

### Conditions for safe storage, including any incompatibilities

Suitable container	<ul style="list-style-type: none"> <li>▶ Polyethylene or polypropylene container.</li> <li>▶ Check all containers are clearly labelled and free from leaks.</li> </ul>
Storage incompatibility	<ul style="list-style-type: none"> <li>▶ Avoid reaction with oxidising agents</li> <li>▶ Avoid storage with reducing agents.</li> </ul>



+ + + + X +

- X** — Must not be stored together  
**0** — May be stored together with specific preventions  
**+** — May be stored together

**PACKAGE MATERIAL INCOMPATIBILITIES**

Not Available

**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	propylene glycol monomethyl ether - mixture of isomers	Propylene glycol monomethyl ether	369 mg/m3 / 100 ppm	553 mg/m3 / 150 ppm	Not Available	Not Available
Australia Exposure Standards	ethanol	Ethyl alcohol	1880 mg/m3 / 1000 ppm	Not Available	Not Available	Not Available
Australia Exposure Standards	n-butanol	n-Butyl alcohol	Not Available	Not Available	152 mg/m3 / 50 ppm	Sk

**EMERGENCY LIMITS**

Ingredient	TEEL-0	TEEL-1	TEEL-2	TEEL-3
Leaderart Permanent Marker Pen	Not Available	Not Available	Not Available	Not Available

Ingredient	Original IDLH	Revised IDLH
polypropylene fibre	Not Available	Not Available
polyester	Not Available	Not Available
propylene glycol monomethyl ether - mixture of isomers	Not Available	Not Available
polyethylene	Not Available	Not Available
ethanol	15,000 ppm	3,300 [LEL] ppm
resin	Not Available	Not Available
n-butanol	8,000 ppm	1,400 [LEL] ppm
solvent dyes	Not Available	Not Available
acrylic	Not Available	Not Available
cap-off additives	Not Available	Not Available

**Exposure controls**

<b>Appropriate engineering controls</b>	<p>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.</p> <p>The basic types of engineering controls are:</p> <p>Process controls which involve changing the way a job activity or process is done to reduce the risk.</p> <p>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.</p>
<b>Personal protection</b>	
<b>Eye and face protection</b>	<ul style="list-style-type: none"> <li>▶ Safety glasses with side shields</li> <li>▶ Chemical goggles.</li> <li>▶ 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. This should include a review of lens absorption and adsorption for the class of chemicals in use and an account of injury experience.</li> </ul>
<b>Skin protection</b>	See Hand protection below
<b>Hands/feet protection</b>	<p>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.</p> <p>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.</p> <p>Suitability and durability of glove type is dependent on usage.</p>
<b>Body protection</b>	See Other protection below
<b>Other protection</b>	<ul style="list-style-type: none"> <li>▶ Overalls.</li> <li>▶ P.V.C. apron.</li> <li>▶ Barrier cream.</li> </ul>
<b>Thermal hazards</b>	Not Available

**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:

Leaderart Permanent Marker Pen

Material	CPI
NEOPRENE	A
NITRILE	B
PVC	B

\* 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)

Required Minimum Protection Factor	Half-Face Respirator	Full-Face Respirator	Powered Air Respirator
up to 10 x ES	A P1 Air-line*	-	A PAPR-P1 -
up to 50 x ES	Air-line**	A P2	A PAPR-P2
up to 100 x ES	-	A P3	-
		Air-line*	-
100+ x ES	-	Air-line**	A PAPR-P3

\* - Negative pressure demand \*\* - Continuous flow

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(SO<sub>2</sub>), G = Agricultural chemicals, K = Ammonia(NH<sub>3</sub>), Hg = Mercury, NO = Oxides of nitrogen, MB = Methyl bromide, AX = Low boiling point organic compounds(below 65 degC)

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

<b>Appearance</b>	Coloured solid; not miscible with water.		
<b>Physical state</b>	Solid	<b>Relative density (Water = 1)</b>	<1
<b>Odour</b>	Not Available	<b>Partition coefficient n-octanol / water</b>	Not Available
<b>Odour threshold</b>	Not Available	<b>Auto-ignition temperature (°C)</b>	Not Available
<b>pH (as supplied)</b>	Not Applicable	<b>Decomposition temperature</b>	>250
<b>Melting point / freezing point (°C)</b>	165	<b>Viscosity (cSt)</b>	Not Applicable
<b>Initial boiling point and boiling range (°C)</b>	Not Available	<b>Molecular weight (g/mol)</b>	Not Applicable
<b>Flash point (°C)</b>	200	<b>Taste</b>	Not Available
<b>Evaporation rate</b>	Not Applicable	<b>Explosive properties</b>	Not Available
<b>Flammability</b>	Not Applicable	<b>Oxidising properties</b>	Not Available
<b>Upper Explosive Limit (%)</b>	Not Available	<b>Surface Tension (dyn/cm or mN/m)</b>	Not Applicable
<b>Lower Explosive Limit (%)</b>	Not Available	<b>Volatile Component (%vol)</b>	Not Available
<b>Vapour pressure (kPa)</b>	Not Available	<b>Gas group</b>	Not Available
<b>Solubility in water (g/L)</b>	Immiscible	<b>pH as a solution(1%)</b>	Not Applicable
<b>Vapour density (Air = 1)</b>	Not Available	<b>VOC g/L</b>	Not Available

**SECTION 10 STABILITY AND REACTIVITY**

<b>Reactivity</b>	See section 7
<b>Chemical stability</b>	<ul style="list-style-type: none"> <li>▶ Unstable in the presence of incompatible materials.</li> <li>▶ Product is considered stable.</li> <li>▶ Hazardous polymerisation will not occur.</li> </ul>
<b>Possibility of hazardous reactions</b>	See section 7
<b>Conditions to avoid</b>	See section 7
<b>Incompatible materials</b>	See section 7
<b>Hazardous decomposition products</b>	See section 5

**SECTION 11 TOXICOLOGICAL INFORMATION****Information on toxicological effects**

<b>Inhaled</b>	Inhalation of dusts, generated by the material during the course of normal handling, may be damaging to the health of the individual.
<b>Ingestion</b>	The material has <b>NOT</b> been classified by EC Directives or other classification systems as "harmful by ingestion". This is because of the lack of corroborating animal or human evidence. The material may still be damaging to the health of the individual, following ingestion, especially where pre-existing organ (e.g liver, kidney) damage is evident. Present definitions of harmful or toxic substances are generally based on doses producing mortality rather than those producing

## Leaderart Permanent Marker Pen

	morbidity (disease, ill-health).
<b>Skin Contact</b>	The material is not thought to be a skin irritant (as classified by EC Directives using animal models). Abrasive damage however, may result from prolonged exposures. Good hygiene practice requires that exposure be kept to a minimum and that suitable gloves be used in an occupational setting. Skin contact with the material may damage the health of the individual; systemic effects may result following absorption.
<b>Eye</b>	Although the material is not thought to be an irritant (as classified by EC Directives), direct contact with the eye may cause transient discomfort characterised by tearing or conjunctival redness (as with windburn). Slight abrasive damage may also result. The material may produce foreign body irritation in certain individuals.
<b>Chronic</b>	Limited evidence suggests that repeated or long-term occupational exposure may produce cumulative health effects involving organs or biochemical systems.

Leaderart Permanent Marker Pen	TOXICITY	IRRITATION
	Not Available	Not Available
polypropylene fibre	TOXICITY	IRRITATION
	Oral (mouse) LD50: 3200 mg/kg	
	Not Available	Not Available
propylene glycol monomethyl ether - mixture of isomers	TOXICITY	IRRITATION
	Dermal (rabbit) LD50: 13000 mg/kg	Eye (rabbit) 230 mg mild
	Inhalation (rat) LC50: 10000 ppm/5 h.	Eye (rabbit) 500 mg/24 h. - mild
	Oral (rat) LD50: 3739 mg/kg	Skin (rabbit) 500 mg open - mild
	Not Available	Not Available
polyethylene	TOXICITY	IRRITATION
	Inhalation (mouse) LC50: 12000 mg/m <sup>3</sup> /30m	
	Oral (rat) LD50: >3000 mg/kg	
	Not Available	Not Available
ethanol	TOXICITY	IRRITATION
	Inhalation (rat) LC50: 20,000 ppm/10h	Eye (rabbit): 500 mg SEVERE
	Inhalation (rat) LC50: 64000 ppm/4h	Eye (rabbit):100mg/24hr-moderate
	Oral (rat) LD50: 7060 mg/kg	Skin (rabbit):20 mg/24hr-moderate
		Skin (rabbit):400 mg (open)-mild
	Not Available	Not Available
n-butanol	TOXICITY	IRRITATION
	Dermal (rabbit) LD50: 3400 mg/kg	Eye (human): 50 ppm - irritant
	Inhalation (rat) LC50: 8000 ppm/4h	Eye (rabbit): 1.6 mg-SEVERE
	Oral (rat) LD50: 790 mg/kg	Eye (rabbit): 24 mg/24h-SEVERE
		Skin (rabbit): 405 mg/24h-moderate
	Not Available	Not Available

\* Value obtained from manufacturer's msds  
unless otherwise specified data extracted from RTECS - Register of Toxic Effects of Chemical Substances

<b>Leaderart Permanent Marker Pen</b>	<p>for propylene glycol ethers (PGEs): Typical propylene glycol ethers include propylene glycol n-butyl ether (PnB); dipropylene glycol n-butyl ether (DPnB); dipropylene glycol methyl ether acetate (DPMA); tripropylene glycol methyl ether (TPM). Testing of a wide variety of propylene glycol ethers Testing of a wide variety of propylene glycol ethers has shown that propylene glycol-based ethers are less toxic than some ethers of the ethylene series. The common toxicities associated with the lower molecular weight homologues of the ethylene series, such as adverse effects on reproductive organs, the developing embryo and fetus, blood (haemolytic effects), or thymus, are not seen with the commercial-grade propylene glycol ethers. In the ethylene series, metabolism of the terminal hydroxyl group produces an alkoxyacetic acid.</p>
<b>POLYPROPYLENE FIBRE</b>	polypropylene
<b>PROPYLENE GLYCOL MONOMETHYL ETHER - MIXTURE OF ISOMERS</b>	<p>The material may be irritating to the eye, with prolonged contact causing inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis.</p> <p>for propylene glycol ethers (PGEs): Typical propylene glycol ethers include propylene glycol n-butyl ether (PnB); dipropylene glycol n-butyl ether (DPnB); dipropylene glycol methyl ether acetate (DPMA); tripropylene glycol methyl ether (TPM). Testing of a wide variety of propylene glycol ethers has shown that propylene glycol-based ethers are less toxic than some ethers of the ethylene series. NOTE: Exposure of pregnant rats and rabbits to the substance did not give rise to teratogenic effects at concentrations up to 3000 ppm. Fetotoxic effects were seen in rats but not in rabbits at this concentration; maternal toxicity was noted in both species.</p>

<b>POLYETHYLENE</b>	polyethylene pyrolyzate
<b>ETHANOL</b>	The material may cause skin irritation after prolonged or repeated exposure and may produce a contact dermatitis (nonallergic). This form of dermatitis is often characterised by skin redness (erythema) and swelling the epidermis. Histologically there may be intercellular oedema of the spongy layer (spongiosis) and intracellular oedema of the epidermis.
<b>N-BUTANOL</b>	Asthma-like symptoms may continue for months or even years after exposure to the material ceases. This may be due to a non-allergenic condition known as reactive airways dysfunction syndrome (RADS) which can occur following exposure to high levels of highly irritating compound. Key criteria for the diagnosis of RADS include the absence of preceding respiratory disease, in a non-atopic individual, with abrupt onset of persistent asthma-like symptoms within minutes to hours of a documented exposure to the irritant. A reversible airflow pattern, on spirometry, with the presence of moderate to severe bronchial hyperreactivity on methacholine challenge testing and the lack of minimal lymphocytic inflammation, without eosinophilia, have also been included in the criteria for diagnosis of RADS.
<b>POLYPROPYLENE FIBRE, POLYETHYLENE</b>	The substance is classified by IARC as Group 3: <b>NOT</b> classifiable as to its carcinogenicity to humans. Evidence of carcinogenicity may be inadequate or limited in animal testing.

<b>Acute Toxicity</b>	☹	<b>Carcinogenicity</b>	☹
<b>Skin Irritation/Corrosion</b>	☹	<b>Reproductivity</b>	☹
<b>Serious Eye Damage/Irritation</b>	☹	<b>STOT - Single Exposure</b>	☹
<b>Respiratory or Skin sensitisation</b>	☹	<b>STOT - Repeated Exposure</b>	☹
<b>Mutagenicity</b>	☹	<b>Aspiration Hazard</b>	☹

**Legend:** ✔ – Data required to make classification available  
✘ – Data available but does not fill the criteria for classification  
☹ – Data Not Available to make classification

**CMR STATUS**

<b>SKIN</b>	n-butanol	Australia Exposure Standards - Skin	Sk
-------------	-----------	-------------------------------------	----

**SECTION 12 ECOLOGICAL INFORMATION****Toxicity**

for propylene glycol ethers:

**Environmental fate:**

Most are liquids at room temperature and all are water-soluble.

Typical propylene glycol ethers include propylene glycol n-butyl ether (PnB); dipropylene glycol n-butyl ether (DPnB); dipropylene glycol methyl ether acetate (DPMA); tripropylene glycol methyl ether (TPM)

Environmental fate: Log octanol-water partition coefficients (log Kow's) range from 0.309 for TPM to 1.523 for DPnB. Calculated BCFs range from 1.47 for DPnB to 3.16 for DPMA and TPM, indicating low bioaccumulation. Henry's Law Constants, which indicate propensity to partition from water to air, are low for all category members, ranging from 5.7 x 10<sup>-9</sup> atm-m<sup>3</sup>/mole for TPM to 2.7 x 10<sup>-9</sup> atm-m<sup>3</sup>/mole for PnB.

**Persistence and degradability**

Ingredient	Persistence: Water/Soil	Persistence: Air
Not Available	Not Available	Not Available

**Bioaccumulative potential**

Ingredient	Bioaccumulation
Not Available	Not Available

**Mobility in soil**

Ingredient	Mobility
Not Available	Not Available

**SECTION 13 DISPOSAL CONSIDERATIONS****Waste treatment methods**

<b>Product / Packaging disposal</b>	<ul style="list-style-type: none"> <li>▶ Recycle wherever possible.</li> <li>▶ 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.</li> <li>▶ Dispose of by: burial in a land-fill specifically licenced to accept chemical and / or pharmaceutical wastes or Incineration in a licenced apparatus (after admixture with suitable combustible material)</li> <li>▶ Decontaminate empty containers. Observe all label safeguards until containers are cleaned and destroyed.</li> </ul>
-------------------------------------	---

**SECTION 14 TRANSPORT INFORMATION****Labels Required**

<b>Marine Pollutant</b>	NO
<b>HAZCHEM</b>	Not Applicable

**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**

**Inland waterways transport (ADNR / River Rhine): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS**

**Transport in bulk according to Annex II of MARPOL 73 / 78 and the IBC code**

Source	Ingredient	Pollution Category
IMO MARPOL 73/78 (Annex II) - List of Noxious Liquid Substances Carried in Bulk	propylene glycol monomethyl ether - mixture of isomers	Z

## SECTION 15 REGULATORY INFORMATION

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

polypropylene fibre(9003-07-0) is found on the following regulatory lists	"International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs", "Australia Inventory of Chemical Substances (AICS)"
propylene glycol monomethyl ether - mixture of isomers(107-98-2) is found on the following regulatory lists	"Australia Exposure Standards", "Australia Inventory of Chemical Substances (AICS)", "International Air Transport Association (IATA) Dangerous Goods Regulations", "Australia Hazardous Substances Information System - Consolidated Lists"
polyethylene(9002-88-4) is found on the following regulatory lists	"International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs", "Australia Inventory of Chemical Substances (AICS)"
ethanol(64-17-5) is found on the following regulatory lists	"Australia Exposure Standards", "Australia Inventory of Chemical Substances (AICS)", "International Air Transport Association (IATA) Dangerous Goods Regulations", "Australia Hazardous Substances Information System - Consolidated Lists"
n-butanol(71-36-3) is found on the following regulatory lists	"Australia Exposure Standards", "Australia Inventory of Chemical Substances (AICS)", "International Air Transport Association (IATA) Dangerous Goods Regulations", "Australia Hazardous Substances Information System - Consolidated Lists"

## SECTION 16 OTHER INFORMATION

### 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.

A list of reference resources used to assist the committee may be found at:

[www.chemwatch.net/references](http://www.chemwatch.net/references)

The (M)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.

This document is copyright. Apart from any fair dealing for the purposes of private study, research, review or criticism, as permitted under the Copyright Act, no part may be reproduced by any process without written permission from CHEMWATCH. TEL (+61 3) 9572 4700.