

# WATTYL CATALAC GLOSS WHITE

Chemwatch Material Safety Data Sheet (REVIEW)  
Issue Date: 20-Aug-2004  
NC317TCP

CHEMWATCH 5103-18  
Version No:3

## Section 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

### PRODUCT NAME

WATTYL CATALAC GLOSS WHITE

### SYNONYMS

### PROPER SHIPPING NAME

PAINT

### PRODUCT USE

Used according to manufacturer' s directions.

### SUPPLIER

Company: Watty1 Pty Ltd  
Address:  
4 Steel St  
Blacktown  
NSW, 2148  
AUS  
Telephone: +61 2 9621 6255  
Emergency Tel: 1800 039 008  
Fax: +61 2 9831 4244

### HAZARD RATINGS

Flammability	3
Toxicity	2
Body Contact	2
Reactivity	1
Chronic	3

SCALE: Min/Nil=0 Low=1 Moderate=2 High=3 Extreme=4

## Section 2 - HAZARDS IDENTIFICATION

### STATEMENT OF HAZARDOUS NATURE

**HAZARDOUS SUBSTANCE. DANGEROUS GOODS. According to the Criteria of NOHSC, and the ADG Code.**

### POISONS SCHEDULE

S5

#### RISK

Highly flammable.  
Harmful by inhalation and in contact with skin.  
Irritating to eyes and skin.  
Limited evidence of a carcinogenic effect.  
May cause SENSITISATION by skin contact.  
Harmful to aquatic organisms.  
May cause harm to the unborn child.  
HARMFUL-May cause lung damage if swallowed.  
Vapours may cause drowsiness and dizziness.

Ingestion may produce

#### SAFETY

Keep locked up.  
Keep away from sources of ignition. No smoking.  
Keep container in a well ventilated place.  
Avoid exposure - obtain special instructions before use.  
To clean the floor and all objects contaminated by this material, use water and detergent.  
Keep container tightly closed.  
This material and its container must be disposed of in a safe way.  
Keep away from food, drink and animal feeding stuffs.  
Take off immediately all contaminated clothing.  
In case of contact with eyes, rinse with plenty of water and contact Doctor or Poisons

health damage\*.  
 Cumulative effects may  
 result following exposure\*.  
 May produce discomfort of  
 the respiratory system\*.  
 Possible respiratory  
 sensitiser\*.  
 \* (limited evidence).

Information Centre.  
 This material and its container must be disposed  
 of as hazardous waste.

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### Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS

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NAME	CAS RN	%
alkyd resin, unregulated		10-30
urea/ formaldehyde resin	9011-05-6	1-5
xylene	1330-20-7	10-30
n- butyl acetate	123-86-4	10-30
titanium dioxide	13463-67-7	10-30
nitrocellulose with >25% alcohol, <12.6% nitrogen	Not avail.	1-9
propylene glycol monomethyl ether acetate, alpha- isomer	108-65-6	1-9
n- butanol	71-36-3	1-9
additives		1-9
contains less than 0.1% benzene		

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### Section 4 - FIRST AID MEASURES

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#### SWALLOWED

- 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.
- Avoid giving milk or oils.  
 Avoid giving alcohol.

#### EYE

- 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.
  - If pain persists or recurs seek medical attention.
  - Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.

#### SKIN

- 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.

#### INHALED

- 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.

#### NOTES TO PHYSICIAN

Treat symptomatically.  
 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.  
for simple esters:

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BASIC TREATMENT  
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- 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 (5 ml/kg recommended) for dilution where patient is able to swallow, has a strong gag reflex and does not drool.
- Give activated charcoal.

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ADVANCED TREATMENT  
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- Consider orotracheal or nasotracheal intubation for airway control in unconscious patient or where respiratory arrest has occurred.
- 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.

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EMERGENCY DEPARTMENT  
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· 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.

For acute or short term repeated exposures to xylene:

· Gastro-intestinal absorption is significant with ingestions. For ingestions exceeding 1 -2 ml (xylene)/kg, intubation and lavage with cuffed endotracheal tube is recommended. The use of charcoal and cathartics is equivocal.

· Pulmonary absorption is rapid with about 60-65% retained at rest.

· Primary threat to life from ingestion and/or inhalation, is respiratory failure.

· Patients should be quickly evaluated for signs of respiratory distress (e.g. cyanosis, tachypnoea, intercostal retraction, obtundation) and given oxygen. Patients with inadequate tidal volumes or poor arterial blood gases (pO<sub>2</sub> < 50 mm Hg or pCO<sub>2</sub> > 50 mm Hg) should be intubated.

· Arrhythmias complicate some hydrocarbon ingestion and/or inhalation and electrocardiographic evidence of myocardial injury has been reported; intravenous lines and cardiac monitors should be established in obviously symptomatic patients. The lungs excrete inhaled solvents, so that hyperventilation improves clearance.

· A chest x-ray should be taken immediately after stabilisation of breathing and circulation to document aspiration and detect the presence of pneumothorax.

· Epinephrine (adrenalin) is not recommended for treatment of bronchospasm because of potential myocardial sensitisation to catecholamines. Inhaled cardioselective bronchodilators (e.g. Alupent, Salbutamol) are the preferred agents, with aminophylline a second choice.

BIOLOGICAL EXPOSURE INDEX - BEI

These represent the determinants observed in specimens collected from a healthy worker exposed at the Exposure Standard (ES or TLV):

Determinant	Index	Sampling Time	Comments
Methylhippu-ric acids in urine	1.5 gm/gm creatinine	End of shift	
	2 mg/min	Last 4 hrs of shift	

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## Section 5 - FIRE FIGHTING MEASURES

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### EXTINGUISHING MEDIA

- Foam.
- Dry chemical powder.
- BCF (where regulations permit).

- Carbon dioxide.
- Water spray or fog - Large fires only.

### **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.
- Prevent, by any means available, spillage from entering drains or water course.
- Consider evacuation (or protect in place).
- Fight fire from a safe distance, with adequate cover.
- If safe, switch off electrical equipment until vapour fire hazard removed.
- Use water delivered as a fine spray to control the fire and cool adjacent area.
- Avoid spraying water onto liquid pools.
- Do not approach containers suspected to be hot.
- Cool fire exposed containers with water spray from a protected location.
- If safe to do so, remove containers from path of fire.

### **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.
- On combustion, may emit toxic fumes of carbon monoxide (CO).

Combustion products include:

carbon dioxide (CO<sub>2</sub>).

nitrogen oxides (NO<sub>x</sub>).

other pyrolysis products typical of burning organic material.

### **FIRE INCOMPATIBILITY**

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

### **HAZCHEM: 3[Y]E**

#### **Personal Protective Equipment**

Breathing apparatus.

Gas tight chemical resistant suit.

Limit exposure duration to 1 BA set 30 mins.

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## **Section 6 - ACCIDENTAL RELEASE MEASURES**

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### **EMERGENCY PROCEDURES**

#### **MINOR SPILLS**

- Remove all ignition sources.
- Clean up all spills immediately.
- Avoid breathing vapours and contact with skin and eyes.
- Control personal contact by using protective equipment.
- Contain and absorb small quantities with vermiculite or other absorbent material.
- Wipe up.
- Collect residues in a flammable waste container.

#### **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.
- Prevent, by any means available, spillage from entering drains or water course.
- Consider evacuation (or protect in place).
- No smoking, naked lights or ignition sources.
- Increase ventilation.
- Stop leak if safe to do so.
- Water spray or fog may be used to disperse /absorb vapour.
- Contain spill with sand, earth or vermiculite.
- Use only spark-free shovels and explosion proof equipment.
- Collect recoverable product into labelled containers for recycling.
- Absorb remaining product with sand, earth or vermiculite.
- Collect solid residues and seal in labelled drums for disposal.
- Wash area and prevent runoff into drains.
- If contamination of drains or waterways occurs, advise emergency services.

### **PROTECTIVE ACTIONS FOR SPILL**

From IERG (Canada/Australia)

Isolation Distance 25 metres  
 Downwind Protection Distance 300 metres  
 IERG Number 14

## FOOTNOTES

- 1 PROTECTIVE ACTION ZONE is defined as the area in which people are at risk of harmful exposure. This assumes that random changes in wind direction confines the vapour plume to an area within 30 degrees either side of the predominant wind direction, resulting in a crosswind protective action distance to the downwind protective action distance.
- 2 PROTECTIVE ACTIONS should be initiated to the extent possible, beginning with those closest to the site and working away from the site in the downwind direction. Within the protective action zone a level vapour concentration may exist resulting in nearly all unprotected persons becoming incapacitated unable to take protective action and/or incurring serious or irreversible health effects.
- 3 INITIAL ISOLATION ZONE is determined as an area, including upwind of the incident, within which a probability of localised wind reversal may expose nearly all persons without appropriate protective life-threatening concentrations of the material.
- 4 SMALL SPILLS involve a leaking package of 200 litres (55 US gallons) or less, such as a drum (jerrycan with inner containers). Larger packages leaking less than 200 litres and compressed gas leaking from a small cylinder are also considered "small spills".  
 LARGE SPILLS involve many small leaking packages or a leaking package of greater than 200 litres, such as a cargo tank, portable tank or a "one-tonne" compressed gas cylinder.
- 5 Guide 128 is taken from the US DOT emergency response guide book.
- 6 IERG information is derived from CANUTEC - Transport Canada.

**EMERGENCY RESPONSE PLANNING GUIDELINES (ERPG)**

The maximum airborne concentration below which it is believed that nearly all individuals could be exposed for up to one hour WITHOUT experiencing or developing

life-threatening health effects is:

xylene	900 ppm
n-butyl acetate	3000 ppm
titanium dioxide	500 mg/m <sup>3</sup>
propylene glycol monomethyl ether acetate, alpha-isomer	600 ppm

irreversible or other serious effects or symptoms which could impair an individual's ability to take protective action is:

xylene	200 ppm
n-butyl acetate	200 ppm
titanium dioxide	15 mg/m <sup>3</sup>
propylene glycol monomethyl ether acetate, alpha-isomer	250 ppm

other than mild, transient adverse effects without perceiving a clearly defined odour is:

xylene	150 ppm
n-butyl acetate	5 ppm
titanium dioxide	15 mg/m <sup>3</sup>
propylene glycol monomethyl ether acetate, alpha-isomer	150 ppm

The threshold concentration below which most people will experience no appreciable risk of health effects is:

xylene	100 ppm
n-butyl acetate	5 ppm
titanium dioxide	15 mg/m <sup>3</sup>
propylene glycol monomethyl ether acetate, alpha-isomer	50 ppm

American Industrial Hygiene Association (AIHA)

Ingredients considered according to the following cutoffs

Very Toxic (T+)	>= 0.1%	Toxic (T)	>= 3.0%
R50	>= 0.25%	Corrosive (C)	>= 5.0%
R51	>= 2.5%		
else	>= 10%		

where percentage is percentage of ingredient found in the mixture

**SAFE STORAGE WITH OTHER CLASSIFIED CHEMICALS**

+: May be stored together  
 O: May be stored together with specific preventions  
 X: Must not be stored together

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

**Section 7 - HANDLING AND STORAGE****PROCEDURE FOR HANDLING**

- 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.
- DO NOT enter confined spaces until atmosphere has been checked.
- Avoid smoking, naked lights, heat or ignition sources.
- When handling, DO NOT eat, drink or smoke.

- Vapour may ignite on pumping or pouring due to static electricity.
  - DO NOT use plastic buckets.
  - Earth and secure metal containers when dispensing or pouring product.
  - Use spark-free tools when handling.
  - Avoid contact with incompatible materials.
  - Keep containers securely sealed.
  - Avoid physical damage to containers.
  - Always wash hands with soap and water after handling.
  - Work clothes should be laundered separately.
  - Use good occupational work practice.
  - Observe manufacturer's storing and handling recommendations.
  - Atmosphere should be regularly checked against established exposure standards to ensure safe working conditions.
- DO NOT allow clothing wet with material to stay in contact with skin.

#### 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. (23 deg. C)
- Manufactured product that requires stirring before use and having a viscosity of at least 20 cSt (25 deg. C)
- (i) : Removable head packaging;
- (ii) : Cans with friction closures and
- (iii) : low pressure tubes and cartridges may be used.
- Where combination packages are used, and the inner packages are of glass, there must be sufficient inert cushioning material in contact with inner and outer packages
- In addition, where inner packagings are glass and contain liquids of packing group I there must be sufficient inert absorbent to absorb any spillage, unless the outer packaging is a close fitting moulded plastic box and the substances are not incompatible with the plastic.

#### STORAGE INCOMPATIBILITY

Avoid reaction with oxidising agents.

#### STORAGE REQUIREMENTS

- 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.
- Store away from incompatible materials in a cool, dry well ventilated area.
- Protect containers against physical damage and check regularly for leaks.
- Observe manufacturer's storing and handling recommendations.

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### Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

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#### EXPOSURE CONTROLS

Source	Material	TWA ppm	TWA mg/m <sup>3</sup>	STEL ppm	STEL mg/m <sup>3</sup>	Peak ppm	Peak mg/m <sup>3</sup>	TWA F/CC	
Source	Material		TWA ppm	TWA mg/m <sup>3</sup>	STEL ppm	STEL mg/m <sup>3</sup>	Peak ppm	Peak mg/m <sup>3</sup>	TWA F/CC
Australia Exposure Standards	urea/formaldehyde resin (Inspirable dust (Not specified))			10					
Australia Exposure Standards	xylene (Xylene (o-, m-, p-isomers))	80		350	150	655			

Australia Exposure Standards	n-butyl acetate (n-Butyl acetate)	150	713	200	950
Australia Exposure Standards	titanium dioxide (Titanium dioxide (a))		10		
Australia Exposure Standards	propylene glycol monomethyl ether acetate, alpha-isomer (1-Methoxy-2-propanol acetate)	50	274	100	548
Australia Exposure Standards	n-butanol (n-Butyl alcohol)			50	152

#### EMERGENCY EXPOSURE LIMITS

Material	Revised IDLH Value (mg/m3)	Revised IDLH Value (ppm)
xylene		900
n-butyl acetate		1,700 [LEL]
titanium dioxide	5,000	
n-butanol		1,400 [LEL]

#### NOTES

Values marked LEL indicate that the IDLH was based on 10% of the lower explosive limit for safety considerations even though the relevant toxicological data indicated that irreversible health effects or impairment of escape existed only at higher concentrations.

#### ODOUR SAFETY FACTOR (OSF)

OSF=4 (XYLENE)

Exposed individuals are NOT reasonably expected to be warned, by smell, that the Exposure Standard is being exceeded.

Odour Safety Factor (OSF) is determined to fall into either Class C, D or E.

The Odour Safety Factor (OSF) is defined as:

OSF= Exposure Standard (TWA) ppm/ odour Threshold value (OTV) ppm

Classification into classes follows:

Class	OSF	Description
A	550	Over 90% of exposed individuals are aware by smell that the Exposure Standard (TLV-TWA for example) is being reached, even when distracted by working activities
B	26-550	As "A" for 50-90% of persons being distracted
C	1-26	As "A" for less than 50% of persons being distracted
D	0.18-1	10-50% of persons aware of being tested perceive by smell that the Exposure Standard is being reached
E	<0.18	As "D" for less than 10% of persons aware of being tested

#### MATERIAL DATA

Not available. Refer to individual constituents.

#### INGREDIENT DATA

PROPYLENE GLYCOL MONOMETHYL ETHER ACETATE, ALPHA-ISOMER:

TITANIUM DIOXIDE:

XYLENE:

Sensory irritants are chemicals that produce temporary and undesirable side-effects on the eyes, nose or throat. Historically occupational exposure standards for these irritants have been based on observation of workers' responses to various airborne concentrations. Present day expectations require that nearly every individual should be protected against even minor sensory irritation and exposure standards are established using uncertainty factors or safety factors of 5 to 10 or more. On occasion animal no-observable-effect-levels (NOEL) are used to determine these limits where human results are unavailable. An additional approach, typically used by the TLV committee (USA) in determining respiratory standards for this group of chemicals, has been to assign ceiling values (TLV C) to rapidly acting irritants and to assign short-term exposure limits (TLV STELS) when the weight of evidence from irritation, bioaccumulation and other endpoints combine to warrant such a limit. In contrast the MAK Commission (Germany) uses a five-category system based on intensive odour, local irritation, and elimination half-life. However this system is being replaced to be consistent with the European Union (EU) Scientific Committee for Occupational Exposure Limits (SCOEL); this is more closely allied to that of the USA.

OSHA (USA) concluded that exposure to sensory irritants can:

- cause inflammation
- cause increased susceptibility to other irritants and infectious agents
- lead to permanent injury or dysfunction
- permit greater absorption of hazardous substances and
- acclimate the worker to the irritant warning properties of these substances thus increasing the risk of overexposure.

N-BUTANOL:

N-BUTYL ACETATE:

Exposed individuals are reasonably expected to be warned, by smell, that the Exposure Standard is being exceeded.

Odour Safety Factor (OSF) is determined to fall into either Class A or B.

The Odour Safety Factor (OSF) is defined as:

OSF= Exposure Standard (TWA) ppm/ Odour Threshold value (OTV) ppm

Classification into classes follows:

Class	OSF	Description
A	550	Over 90% of exposed individuals are aware by smell that the Exposure Standard (TLV-TWA for example) is being reached, even when distracted by working activities
B	26-550	As "A" for 50-90% of persons being distracted
C	1-26	As "A" for less than 50% of persons being distracted
D	0.18-1	10-50% of persons aware of being tested perceive by smell that the Exposure Standard is being reached
E	<0.18	As "D" for less than 10% of persons aware of being tested

NITROCELLULOSE WITH >25% ALCOHOL, <12.6% NITROGEN:

XYLENE:

Exposed individuals are NOT reasonably expected to be warned, by smell, that the Exposure Standard is being exceeded.

Odour Safety Factor (OSF) is determined to fall into either Class C, D or E.

The Odour Safety Factor (OSF) is defined as:

OSF= Exposure Standard (TWA) ppm/ Odour Threshold value (OTV) ppm

Classification into classes follows:

Class	OSF	Description
A	550	Over 90% of exposed individuals are aware by smell that the Exposure Standard (TLV-TWA for example) is

		being reached, even when distracted by working activities
B	26-550	As "A" for 50-90% of persons being distracted
C	1-26	As "A" for less than 50% of persons being distracted
D	0.18-1	10-50% of persons aware of being tested perceive by smell that the Exposure Standard is being reached
E	<0.18	As "D" for less than 10% of persons aware of being tested

**XYLENE:**

IDLH Level: 900 ppm

Odour Threshold Value: 20 ppm (detection), 40 ppm (recognition)

NOTE: Detector tubes for o-xylene, measuring in excess of 10 ppm, are available commercially. (m-xylene and p-xylene give almost the same response)

Xylene vapour is an irritant to the eyes, mucous membranes and skin and causes narcosis at high concentrations. Exposure to doses sufficiently high to produce intoxication and unconsciousness also produces transient liver and kidney toxicity. Neurologic impairment is NOT evident amongst volunteers inhaling up to 400 ppm though complaints of ocular and upper respiratory tract irritation occur at 200 ppm for 3 to 5 minutes. Exposure to xylene at or below the recommended TLV-TWA and STEL is thought to minimise the risk of irritant effects and to produce neither significant narcosis or chronic injury. An earlier skin notation was deleted because percutaneous absorption is gradual and protracted and does not substantially contribute to the dose received by inhalation.

**N-BUTYL ACETATE:**

Odour Threshold Value: 0.0063 ppm (detection), 0.038-12 ppm (recognition)

Exposure at or below the recommended TLV-TWA is thought to prevent significant irritation of the eyes and respiratory passages as well as narcotic effects. In light of the lack of substantive evidence regarding teratogenicity and a review of acute oral data a STEL is considered inappropriate.

**TITANIUM DIOXIDE:**

It is the goal of the ACGIH (and other Agencies) to recommend TLVs (or their equivalent) for all substances for which there is evidence of health effects at airborne concentrations encountered in the workplace.

At this time no TLV has been established, even though this material may produce adverse health effects (as evidenced in animal experiments or clinical experience). Airborne concentrations must be maintained as low as is practically possible and occupational exposure must be kept to a minimum.

NOTE: The ACGIH occupational exposure standard for Particles Not Otherwise Specified (P.N.O.S) does NOT apply.

WARNING: This substance has been classified by the IARC as Group 2B: Possibly Carcinogenic to Humans.

IDLH Level: 5000 mg/m<sup>3</sup>

Animal studies at 10 mg/m<sup>3</sup> show no significant fibrosis, possibly reversible tissue reaction and the architecture of lung air spaces remains intact.

**NITROCELLULOSE WITH >25% ALCOHOL, <12.6% NITROGEN:**

None assigned. Refer to individual constituents.

nitrocellulose:

None assigned.

methylated spirits, as ethanol:

TLV TWA: 1000 ppm, 1880 mg/m<sup>3</sup>

ES TWA: 1000 ppm, 1900 mg/m<sup>3</sup>

**PROPYLENE GLYCOL MONOMETHYL ETHER ACETATE, ALPHA-ISOMER:**

Saturated vapour concentration: 4868 ppm at 20 C.

A two-week inhalation study found nasal effects to the nasal mucosa in animals at concentrations up to 3000 ppm. Differences in the teratogenic potential of the alpha (commercial grade) and beta isomers of PGMEA may be explained by the formation of different metabolites. The beta-isomer is thought to be oxidised to methoxypropionic acid, a homologue to methoxyacetic acid which is a known teratogen. The alpha- form is conjugated and excreted.

PGMEA mixture (containing 2% to 5% beta isomer) is a mild skin and eye irritant, produces mild central nervous system effects in animals at 3000 ppm and produces mild CNS impairment and upper respiratory tract

and eye irritation in humans at 1000 ppm. In rats exposed to 3000 ppm PGMEA produced slight foetotoxic effects (delayed sternabral ossification) - no effects on foetal development were seen in rabbits exposed at 3000 ppm.

#### N-BUTANOL:

Odour Threshold Value: 0.12-3.4 ppm (detection), 1.0-3.5 ppm (recognition)  
NOTE: Detector tubes for n-butanol, measuring in excess of 5 ppm are commercially available.

Exposure at or below the TLV-TWA is thought to provide protection against hearing loss due to vestibular and auditory nerve damage in younger workers and to protect against the significant risk of headache and irritation.

25 ppm may produce mild irritation of the respiratory tract

50 ppm may produce headache and vertigo.

Higher concentrations may produce marked irritation, sore throat, coughing, nausea, shortness of breath, pulmonary injury and central nervous system depression characterised by headache, dizziness, dullness and drowsiness.

6000 ppm may produce giddiness, prostration, narcosis, ataxia, and death.

## PERSONAL PROTECTION

### EYE

- 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 lens 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. Medical and first-aid personnel should be trained in their removal and suitable equipment should be readily available. In the event of chemical exposure, begin eye irrigation immediately and remove contact lens as soon as practicable. Lens should be removed at the first signs of eye redness or irritation - lens should be removed in a clean environment only after workers have washed hands thoroughly. [CDC NIOSH Current Intelligence Bulletin 59].

### HANDS/FEET

- wear chemical protective gloves, eg. PVC.
- wear safety footwear or safety gumboots, eg. Rubber.

### OTHER

- Overalls.
- PVC Apron.
- PVC protective suit may be required if exposure severe.
- Eyewash unit.
- Ensure there is ready access to a safety shower.

### RESPIRATOR

Selection of the Class and Type of respirator will depend upon the level of breathing zone contaminant and the chemical nature of the contaminant. Protection Factors (defined as the ratio of contaminant outside and inside the mask) may also be important.

Breathing Zone Level ppm (volume)	Maximum Protection Factor	Half - face Respirator	Full Face Respirator
1000	10	A- AUS P-	-
1000	50	-	A- AUS P-
5000	50	Airline *	-
5000	100	-	A-2 P-
10000	100	-	A-3 P-
	100+		Airline**

\* - Continuous Flow    \*\* - Continuous-flow or positive pressure demand.

The local concentration of material, quantity and conditions of use determine the type of personal protective equipment required.  
For further information consult site specific CHEMWATCH data (if available), or your Occupational Health and Safety Advisor.

**ENGINEERING CONTROLS**

For flammable liquids and flammable gases, local exhaust ventilation or a process enclosure ventilation system may be required. Ventilation equipment should be explosion-resistant.

Air contaminants generated in the workplace possess varying "escape" velocities which, in turn, determine the "capture velocities" of fresh circulating air required to effectively remove the contaminant.

Type of Contaminant:	Air Speed:
solvent, vapours, degreasing etc., evaporating from tank (in still air).	0.25-0.5 m/s (50-100 f/min.)
aerosols, fumes from pouring operations, intermittent container filling, low speed conveyer transfers, welding, spray drift, plating acid fumes, pickling (released at low velocity into zone of active generation)	0.5-1 m/s (100-200 f/min.)
direct spray, spray painting in shallow booths, drum filling, conveyer loading, crusher dusts, gas discharge (active generation into zone of rapid air motion)	1-2.5 m/s (200-500 f/min.)

within each range the appropriate value depends on:

Lower end of the range	Upper end of the range
1: Room air currents minimal or favourable to capture	1: Disturbing room air currents
2: Contaminants of low toxicity or of nuisance value only.	2: Contaminants of high toxicity
3: Intermittent, low production.	3: High production, heavy use
4: Large hood or large air mass in motion	4: Small hood-local control only

Simple theory shows that air velocity falls rapidly with distance away from the opening of a simple extraction pipe. Velocity generally decreases with the square of distance from the extraction point (in simple cases). Therefore the air speed at the extraction point should be adjusted, accordingly, after reference to distance from the contaminating source. The air velocity at the extraction fan, for example, should be a minimum of 1-2 m/s (200-400 f/min.) for extraction of solvents generated in a tank 2 meters distant from the extraction point. Other mechanical considerations, producing performance deficits within the extraction apparatus, make it essential that theoretical air velocities are multiplied by factors of 10 or more when extraction systems are installed or used.

**Section 9 - PHYSICAL AND CHEMICAL PROPERTIES****APPEARANCE**

white highly flammable liquid with a strong solvent odour; does not mix with water.

**PHYSICAL PROPERTIES**

Liquid.

Does not mix with water.

Molecular weight: Not Applicable

Melting Range (°C): Not Available

Solubility in water (g/L): Immiscible

pH (1% solution): Not Applicable

Volatile Component (%vol): Not Available

Relative Vapour Density (air=1): >1

Lower Explosive Limit (%): Not Available

Autoignition Temp (°C): Not Available

State: Liquid

Boiling Range (°C): 78-143

Specific Gravity (water=1): Not Available

pH (as supplied): Not Applicable

Vapour Pressure (kPa): Not Available

Evaporation Rate: Not Available

Flash Point (°C): 22 (butyl acetate)

Upper Explosive Limit (%): Not Available

Decomposition Temp (°C): Not Available

Viscosity: Not Available

**Section 10 - CHEMICAL STABILITY AND REACTIVITY INFORMATION**

**CONDITIONS CONTRIBUTING TO INSTABILITY**

- Presence of incompatible materials.
- Product is considered stable.
- Hazardous polymerisation will not occur.

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**Section 11 - TOXICOLOGICAL INFORMATION**

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**POTENTIAL HEALTH EFFECTS****ACUTE HEALTH EFFECTS****SWALLOWED**

Accidental ingestion of the material may be damaging to the health of the individual. Considered an unlikely route of entry in commercial/industrial environments. The liquid may produce gastrointestinal discomfort and may be harmful if swallowed. Ingestion may result in nausea, pain and vomiting. Vomit entering the lungs by aspiration may cause potentially lethal chemical pneumonitis. Central nervous system (CNS) depression may include nonspecific discomfort, symptoms of giddiness, headache, dizziness, nausea, anaesthetic effects, slowed reaction time, slurred speech and may progress to unconsciousness. Serious poisonings may result in respiratory depression and may be fatal. Effects on the nervous system characterise over-exposure to higher aliphatic alcohols. These include headache, muscle weakness, giddiness, ataxia, (loss of muscle coordination), confusion, delirium and coma. Gastrointestinal effects may include nausea, vomiting and diarrhoea. In the absence of effective treatment, respiratory arrest is the most common cause of death in animals acutely poisoned by the higher alcohols. Aspiration of liquid alcohols produces an especially toxic response as they are able to penetrate deeply in the lung where they are absorbed and may produce pulmonary injury. Those possessing lower viscosity elicit a greater response. The result is a high blood level and prompt death at doses otherwise tolerated by ingestion without aspiration. As a general observation, alcohols are more powerful central nervous system depressants than their aliphatic analogues. In sequence of decreasing depressant potential, tertiary alcohols with multiple substituent OH groups are more potent than secondary alcohols, which, in turn, are more potent than primary alcohols. The potential for overall systemic toxicity increases with molecular weight, principally because the water solubility is diminished and lipophilicity is increased.

**EYE**

Evidence exists, or practical experience predicts, that the material may cause severe eye irritation in a substantial number of individuals and/or may produce significant ocular lesions which are present twenty-four hours or more after instillation into the eye(s) of experimental animals. Eye contact may cause significant inflammation with pain. Corneal injury may occur; permanent impairment of vision may result unless treatment is prompt and adequate. Repeated or prolonged exposure to irritants may cause inflammation characterised by a temporary redness (similar to windburn) of the conjunctiva (conjunctivitis); temporary impairment of vision and/or other transient eye damage/ulceration may occur. The material may produce severe irritation to the eye causing pronounced inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis.

**SKIN**

The material produces moderate skin irritation; evidence exists, or practical experience predicts, that the material either

- produces moderate inflammation of the skin in a substantial number of individuals following direct contact, and/or
- produces significant, but moderate, inflammation when applied to the healthy intact skin of animals (for up to four hours), such inflammation being present twenty-four hours or more after the end of the exposure period.

Skin irritation may also be present after prolonged or repeated exposure; this may result in a form of contact dermatitis (nonallergic). The dermatitis is often characterised by skin redness (erythema) and swelling (oedema) which may progress to blistering (vesiculation), scaling and thickening of the epidermis. At the microscopic level there may be intercellular oedema of the spongy layer of the skin (spongiosis) and intracellular oedema of the epidermis.

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.

Toxic effects may result from skin absorption.

Exposure limits with "skin" notation indicate that vapour and liquid may be absorbed through intact skin. Absorption by skin may readily exceed vapour inhalation exposure. Symptoms for skin absorption are the same as for inhalation. Contact with eyes and mucous membranes may also contribute to overall exposure and may also invalidate the exposure standard.

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.

**INHALED**

Inhalation of aerosols (mists, fumes), generated by the material during the course of normal handling, may be harmful.

Limited evidence or practical experience suggests that the material may produce irritation of the respiratory system, in a significant number of individuals, following inhalation. In contrast to most organs, the lung is able to respond to a chemical insult by first removing or neutralising the irritant and then repairing the damage. The repair process, which initially evolved to protect mammalian lungs from foreign matter and antigens, may however, produce further lung damage resulting in the impairment of gas exchange, the primary function of the lungs. Respiratory tract irritation often results in an inflammatory response involving the recruitment and activation of many cell types, mainly derived from the vascular system.

Inhalation of vapours may cause drowsiness and dizziness. This may be accompanied by narcosis, reduced alertness, loss of reflexes, lack of coordination and vertigo.

If exposure to highly concentrated solvent atmosphere is prolonged this may lead to narcosis, unconsciousness, even coma and possible death.

Xylene is a central nervous system depressant. Central nervous system (CNS) depression may include nonspecific discomfort, symptoms of giddiness, headache, dizziness, nausea, anaesthetic effects, slowed reaction time, slurred speech and may progress to unconsciousness. Serious poisonings may result in respiratory depression and may be fatal.

Headache, fatigue, lassitude, irritability and gastrointestinal disturbances (e.g., nausea, anorexia and flatulence) are the most common symptoms of xylene overexposure.

Injury to the heart, liver, kidneys and nervous system has also been noted amongst workers. Transient memory loss, renal impairment, temporary confusion and some evidence of disturbance of liver function was reported in three workers overcome by gross exposure to xylene (10000 ppm). One worker died and autopsy revealed pulmonary congestion, oedema and focal alveolar haemorrhage. Volunteers inhaling xylene at 100 ppm for 5 to 6 hours showed changes in manual coordination reaction time and slight ataxia. Tolerance developed during the workweek but was lost over the weekend. Physical exercise may antagonise this effect. Xylene body burden in humans exposed to 100 or 200 ppm xylene in air depends on the amount of body fat with 4% to 8% of total absorbed xylene accumulating in adipose tissue.

### CHRONIC HEALTH EFFECTS

Limited evidence suggests that repeated or long-term occupational exposure may produce cumulative health effects involving organs or biochemical systems.

On the basis, primarily, of animal experiments, concern has been expressed by at least one classification body that the material may produce carcinogenic or mutagenic effects; in respect of the available information, however, there presently exists inadequate data for making a satisfactory assessment.

Limited evidence shows that inhalation of the material is capable of inducing a sensitisation reaction in a significant number of individuals at a greater frequency than would be expected from the response of a normal population.

Pulmonary sensitisation, resulting in hyperactive airway dysfunction and pulmonary allergy may be accompanied by fatigue, malaise and aching. Significant symptoms of exposure may persist for extended periods, even after exposure ceases. Symptoms can be activated by a variety of nonspecific environmental stimuli such as automobile exhaust, perfumes and passive smoking.

There is some evidence that human exposure to the material may result in developmental toxicity. This evidence is based on animal studies where effects have been observed in the absence of marked maternal toxicity, or at around the same dose levels as other toxic effects but which are not secondary non-specific consequences of the other toxic effects. Exposure to the material for prolonged periods may cause physical defects in the developing embryo (teratogenesis).

### TOXICITY AND IRRITATION

Not available. Refer to individual constituents.

#### UREA/ FORMALDEHYDE RESIN:

##### TOXICITY

Oral (rat) LD50: 8394 mg/kg

Inhalation (rat) LC50: >167 mg/m<sup>3</sup>/4h

Dermal (rat) LD50: >2100 mg/kg

Oral (mouse) LD50: 6361 mg/kg

Somnolence, impaired liver function tests, changes in leucocyte (WBC) count recorded.

NOTE: Substance has been shown to be mutagenic in at least one assay, or belongs to a family of chemicals producing damage or change to cellular DNA.

##### IRRITATION

Skin (rabbit): 500 mg/24h-SEVERE

Eye (rabbit): 0.1 ul/24h -SEVERE

#### XYLENE:

##### TOXICITY

Oral (human) LDLo: 50 mg/kg

Oral (rat) LD50: 4300 mg/kg

Inhalation (human) TClO: 200 ppm

Inhalation (man) LClO: 10000 ppm/6h

Inhalation (rat) LC50: 5000 ppm/4h

Oral (Human) LD: 50 mg/kg

Inhalation (Human) TClO: 200 ppm/4h

Intraperitoneal (Rat) LD50: 2459 mg/kg

Subcutaneous (Rat) LD50: 1700 mg/kg

Oral (Mouse) LD50: 2119 mg/kg

Intraperitoneal (Mouse) LD50: 1548 mg/kg

Intravenous (Rabbit) LD: 129 mg/kg

Inhalation (Guinea) pig: LC 450 ppm/4h

The material may produce severe irritation to the eye causing pronounced inflammation.

Repeated or prolonged exposure to irritants may produce conjunctivitis.

The material may cause skin irritation after prolonged or repeated exposure and may

##### IRRITATION

Skin (rabbit): 500 mg/24h Moderate

Eye (human): 200 ppm Irritant

Eye (rabbit): 87 mg Mild

Eye (rabbit): 5 mg/24h SEVERE

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.

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.  
Reproductive effector in rats

**N-BUTYL ACETATE:  
TOXICITY**

Oral (rat) LD50: 13100 mg/kg  
Dermal (rabbit) LD50: 3200 mg/kg\*  
Inhalation (human) TCLO: 200 ppm  
Inhalation (rat) LC50: 2000 ppm/4h  
Inhalation (Human) TCLO: 200 ppm/4h \*

**IRRITATION**

Skin (rabbit): 500 mg/24h-  
Moderate  
Eye (rabbit): 20 mg (open)-SEVERE  
Eye (rabbit): 20 mg/24h -  
Moderate  
Eye ( human): 300 mg

[PPG]

Oral (Rat) LD50: 10768 mg/kg  
Inhalation (Rat) LC50: 390 ppm/4h  
Intraperitoneal (Mouse) LD50: 1230 mg/kg  
Oral (Rabbit) LD50: 3200 mg/kg  
Oral (Guinea) pig: LD50 4700 mg/kg  
Intraperitoneal (Guinea) pig: LD 1500  
mg/kg

The material may produce severe irritation to the eye causing pronounced inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis.

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.

**TITANIUM DIOXIDE:  
TOXICITY**

**IRRITATION**

Skin (human): 0.3 mg/3d-I Mild

The material may produce moderate eye irritation leading to inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis.

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 epidermis. Histologically there may be intercellular oedema of the spongy layer (spongiosis) and intracellular oedema of the epidermis.

**NITROCELLULOSE WITH >25% ALCOHOL, <12.6% NITROGEN:**  
Not available. Refer to individual constituents.

**PROPYLENE GLYCOL MONOMETHYL ETHER ACETATE, ALPHA-ISOMER:  
TOXICITY**

Oral (rat) LD50: 8532 mg/kg  
Dermal (rabbit) LD50: >5000 mg/kg\* \* [CCINFO]  
Inhalation (rat) LC50: 4345 ppm/6h

**IRRITATION**

Nil Reported

A BASF report (in ECETOC ) showed that inhalation exposure to 545 ppm PGMEA (beta isomer) was associated with a teratogenic response in rabbits; but exposure to 145 ppm and 36 ppm had no adverse effects. The beta isomer of PGMEA comprises only 10% of the commercial material, the remaining 90% is alpha isomer. Hazard appears low but emphasizes the need for care in handling this chemical. [I.C.I]

**N-BUTANOL:  
TOXICITY**

Oral (rat) LD50: 790 mg/kg  
Inhalation (human) TCLO: 25 ppm  
Inhalation (rat) LC50: 8000 ppm/4h  
Dermal (rabbit) LD50: 3400 mg/kg  
Inhalation (human) TCLO: 86000 mg/m?

**IRRITATION**

Skin (rabbit): 405 mg/24h-Moderate  
Eye (human): 50 ppm - Irritant  
Eye (rabbit): 1.6 mg-SEVERE  
Eye (rabbit): 24 mg/24h-SEVERE

MATERIAL	CARCINOGEN	REPROTOXIN	SENSITISER	SKIN
xylene	IARC:3	ILOE1		
titanium dioxide	IARC:2B			

**CARCINOGEN**

IARC: International Agency for Research on Cancer (IARC) Carcinogens: xylene Category: 3

**REPROTOXIN**

ILOE1: ILO Chemicals in the electronics industry that have toxic effects on reproduction: xylene

**CARCINOGEN**

IARC: International Agency for Research on Cancer (IARC) Carcinogens: titanium dioxide Category: 2B

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## Section 12 - ECOLOGICAL INFORMATION

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DO NOT discharge into sewer or waterways.  
Refer to data for ingredients, which follows:

UREA/ FORMALDEHYDE RESIN:  
Slowly, but not readily biodegradable.  
TOC - removal 28 days; 61% BOD<sub>28</sub>; 0.62 mg/mg substance.  
Nitrification 28 days; 0.45 mg NO<sub>3</sub>-N/mg substance.

XYLENE:  
Fish LC50 (96hr.) (mg/l): 13.5  
BCF<100: 2.14- 2.20  
log Kow (Prager 1995): 3.12- 3.20  
Half- life Soil - High (hours): 672  
Half- life Soil - Low (hours): 168  
Half- life Air - High (hours): 44  
Half- life Air - Low (hours): 2.6  
Half- life Surface water - High (hours): 672  
Half- life Surface water - Low (hours): 168  
Half- life Ground water - High (hours): 8640  
Half- life Ground water - Low (hours): 336  
Aqueous biodegradation - Aerobic - High (hours): 672  
Aqueous biodegradation - Aerobic - Low (hours): 168  
Aqueous biodegradation - Anaerobic - High (hours): 8640  
Aqueous biodegradation - Anaerobic - Low (hours): 4320  
Photolysis maximum light absorption - High (nano- m): 269.5  
Photolysis maximum light absorption - Low (nano- m): 265  
Photooxidation half- life water - High (hours): 2.70E+08  
Photooxidation half- life water - Low (hours): 3.90E+05  
Photooxidation half- life air - High (hours): 44  
Photooxidation half- life air - Low (hours): 2.6

The lower molecular weight hydrocarbons are expected to form a "slick" on the surface of waters after release in calm sea conditions. This is expected to evaporate and enter the atmosphere where it will be degraded through reaction with hydroxy radicals.

Some of the material will become associated with benthic sediments, and it is likely to be spread over a fairly wide area of sea floor. Marine sediments may be either aerobic or anaerobic. The material, in probability, is biodegradable, under aerobic conditions (isomerised olefins and alkenes show variable results). Evidence also suggests that the hydrocarbons may be degradable under anaerobic conditions although such degradation in benthic sediments may be a relatively slow process.

Under aerobic conditions the material will degrade to water and carbon dioxide, while under anaerobic processes it will produce water, methane and carbon dioxide.

Based on test results, as well as theoretical considerations, the potential for bioaccumulation may be high. Toxic effects are often observed in species such as blue mussel, daphnia, freshwater green algae, marine copepods and amphipods.

Drinking Water Standards:

hydrocarbon total: 10 ug/l (UK max.).

DO NOT discharge into sewer or waterways.

The material is classified as an ecotoxin\* because the Fish LC50 (96 hours) is less than or equal to 0.1 mg/l

\* Classification of Substances as Ecotoxic (Dangerous to the Environment)

Appendix 8, Table 1

Compiler's Guide for the Preparation of International Chemical Safety Cards: 1993  
Commission of the European Communities.

N-BUTYL ACETATE:  
Fish LC50 (96hr.) (mg/l): 18  
Daphnia magna EC50 (48hr.) (mg/l): 44  
log Kow (Prager 1995): 1.82  
Fish LC50 (96hr.) (mg/l): 100- 185  
Daphnia magna EC50 (48hr.) (mg/l): 44  
Algae IC50 (72hr.) (mg/l): 280  
log Kow (Sangster 1997): 1.78  
COD: 78%

DO NOT discharge into sewer or waterways.

Half-life (hr) air: 144

Half-life (hr) H<sub>2</sub>O surface water: 178-27156

Henry's atm m<sup>3</sup> /mol: 3.20E-04

BOD 5 if unstated: 0.15-1.02,7%

COD: 78%

ThOD: 2.207

BCF: 4-14

Toxicity Fish: LC50(96)100-185ppm

Toxicity invertebrate: cell mult. inhib.78-3700mg/L

Effects on algae and plankton: cell mult. inhib.21-280mg/L

Degradation Biological: sig

processes Abiotic: hydrol,RxnoH\*

TITANIUM DIOXIDE:

DO NOT discharge into sewer or waterways.

PROPYLENE GLYCOL MONOMETHYL ETHER ACETATE, ALPHA-ISOMER:

DO NOT discharge into sewer or waterways.

N-BUTANOL:	
Fish LC50 (96hr.) (mg/l):	1910- 1940
Daphnia magna EC50 (48hr.) (mg/l):	1983
Algae IC50 (72hr.) (mg/l):	650
log Kow (Prager 1995):	0.88
log Kow (Sangster 1997):	0.84
log Pow (Verschuereen 1983):	0.88
Half- life Soil - High (hours):	168
Half- life Soil - Low (hours):	24
Half- life Air - High (hours):	87.7
Half- life Air - Low (hours):	8.8
Half- life Surface water - High (hours):	168
Half- life Surface water - Low (hours):	24
Half- life Ground water - High (hours):	1296
Half- life Ground water - Low (hours):	48
Aqueous biodegradation - Aerobic - High (hours):	168
Aqueous biodegradation - Aerobic - Low (hours):	24
Aqueous biodegradation - Anaerobic - High (hours):	1296
Aqueous biodegradation - Anaerobic - Low (hours):	96
Aqueous biodegradation - Removal secondary treatment - High (hours):	99%
Aqueous biodegradation - Removal secondary treatment - Low (hours):	31%
Photooxidation half- life water - High (hours):	104000
Photooxidation half- life water - Low (hours):	2602
Photooxidation half- life air - High (hours):	87.7
Photooxidation half- life air - Low (hours):	8.8

DO NOT discharge into sewer or waterways.

log Kow: 0.88

Koc: 71.6

Half-life (hr) air: 5-52

Half-life (hr) H2O surface water: 2.4-3022

Henry's atm m<sup>3</sup> /mol: 5.57E-06

BOD 5 if unstated: 1.1-2.04,33%

COD: 1.9,92%

ThOD: 2.594

Toxicity Fish: LD100(24)1.4g/L,LC50(96)1.91g/L

Toxicity invertebrate: cell mult. inhib.8-650mg/L

Bioaccumulation: not sig

Nitrif. inhib.: 50% inhib at 8200mg/L

Effects on algae and plankton: cell mult. inhib.100-875mg/L

Degradation Biological: sig

processes Abiotic: RxnOH\*

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### Section 13 - DISPOSAL CONSIDERATIONS

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- 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 MSDS and observe all notices pertaining to the product.

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### Section 14 - TRANSPORTATION INFORMATION

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Labels Required: FLAMMABLE LIQUID

HAZCHEM: 3[Y]E

UNDG:

Dangerous Goods Class: 3 Subrisk: N

UN Number: 1263 Packing Group: I

Shipping Name:PAINT

PAINT (including paint, lacquer, enamel, stain, shellac, varnish,  
polish, liquid filler and liquid lacquer base)

#### Air Transport IATA:

ICAO/IATA Class: 3 ICAO/IATA Subrisk: N

UN/ID Number: 1263 Packing Group: I:

ERG Code: 3L

Shipping name:PAINT

#### Maritime Transport IMDG:

IMDG Class: 3 IMDG Subrisk: Nor

UN Number: 1263 Packing Group: II

EMS Number: F-E,S-E

Shipping name:PAINT

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### Section 15 - REGULATORY INFORMATION

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**POISONS SCHEDULE: S5****REGULATIONS**

urea/ formaldehyde resin (CAS: 9011-05-6) is found on the following regulatory lists;

Australia Exposure Standards  
Australia Inventory of Chemical Substances (AICS)  
OECD Representative List of High Production Volume (HPV) Chemicals  
urea/ formaldehyde resin (CAS: 39327-95-2) is found on the following regulatory lists;  
Australia Exposure Standards  
urea/ formaldehyde resin (CAS: 57608-87-4) is found on the following regulatory lists;  
Australia Exposure Standards

xylene (CAS: 1330-20-7) is found on the following regulatory lists;

Australia - Australian Capital Territory - Environment Protection Regulation: Ambient environmental standards (Domestic water supply - organic compounds)  
Australia - Australian Capital Territory Environment Protection Regulation Pollutants entering waterways - Domestic water quality  
Australia Exposure Standards  
Australia High Volume Industrial Chemical List (HVICL)  
Australia Inventory of Chemical Substances (AICS)  
Australia National Pollutant Inventory  
Australia Poisons Schedule  
Australia Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP) - Appendix E (Part 2)  
Australia Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP) - Appendix F (Part 3)  
Australia Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP) - Schedule 6  
IMO MARPOL 73/78 (Annex II) - List of Noxious Liquid Substances Carried in Bulk  
International Agency for Research on Cancer (IARC) Carcinogens  
International Council of Chemical Associations (ICCA) - High Production Volume List  
OECD Representative List of High Production Volume (HPV) Chemicals  
WHO Guidelines for Drinking-water Quality - Guideline values for chemicals that are of health significance in drinking-water

n-butyl acetate (CAS: 123-86-4) is found on the following regulatory lists;

Australia Exposure Standards  
Australia High Volume Industrial Chemical List (HVICL)  
Australia Inventory of Chemical Substances (AICS)  
IMO MARPOL 73/78 (Annex II) - List of Noxious Liquid Substances Carried in Bulk  
International Council of Chemical Associations (ICCA) - High Production Volume List  
OECD Representative List of High Production Volume (HPV) Chemicals  
United Nations Convention Against Illicit Traffic in Narcotic Drugs and Psychotropic Substances - Table II

titanium dioxide (CAS: 13463-67-7) is found on the following regulatory lists;

Australia Exposure Standards  
Australia High Volume Industrial Chemical List (HVICL)  
Australia Inventory of Chemical Substances (AICS)  
Australia Therapeutic Goods Administration (TGA) Substances that may be used as active ingredients in Listed medicines  
Australia Therapeutic Goods Administration (TGA) Sunscreening agents permitted as active ingredients in listed products  
CODEX General Standard for Food Additives (GSFA) - Additives Permitted for Use in Food in General, Unless Otherwise Specified, in Accordance with GMP  
International Agency for Research on Cancer (IARC) Carcinogens  
OECD Representative List of High Production Volume (HPV) Chemicals

nitrocellulose with >25% alcohol, <12.6% nitrogen (CAS No: None):

No regulations applicable

propylene glycol monomethyl ether acetate, alpha-isomer (CAS: 108-65-6) is found on the following regulatory lists;

Australia Exposure Standards  
Australia High Volume Industrial Chemical List (HVICL)  
Australia Inventory of Chemical Substances (AICS)  
International Council of Chemical Associations (ICCA) - High Production Volume List  
OECD Representative List of High Production Volume (HPV) Chemicals

n-butanol (CAS: 71-36-3) is found on the following regulatory lists;

Australia Exposure Standards  
Australia High Volume Industrial Chemical List (HVICL)  
Australia Inventory of Chemical Substances (AICS)  
IMO MARPOL 73/78 (Annex II) - List of Other Liquid Substances  
International Council of Chemical Associations (ICCA) - High Production Volume List  
OECD Representative List of High Production Volume (HPV) Chemicals

No data available for urea/ formaldehyde resin as CAS: 56779-89-6, CAS: 57608-68-1, CAS: 57657-45-1, CAS: 57762-61-5, CAS: 60267-46-1, CAS: 60831-80-3, CAS: 393138-21-1, CAS: 78170-14-6, CAS: 180854-98-2, CAS: 189641-36-9, CAS: 138988-73-5, CAS: 192230-65-2, CAS: 77907-72-3, CAS: 202289-78-9, CAS: 85854-40-6, CAS: 394250-88-5, CAS: 120989-72-2, CAS: 86243-01-8, CAS: 112024-34-7, CAS: 86338-48-9, CAS: 489467-81-4, CAS: 87913-96-0, CAS: 88528-51-2, CAS: 54242-49-8, CAS: 77272-60-7, CAS: 100786-56-9, CAS: 83692-21-1, CAS: 57219-37-1, CAS: 55777-70-3, CAS: 55892-41-6, CAS: 55892-42-7, CAS: 56090-99-4, CAS: 56275-22-0, CAS: 56438-34-7, CAS: 56590-69-3, CAS: 56690-82-5, CAS: 56730-47-3, CAS: 56730-59-7, CAS: 56730-69-9, CAS: 58449-43-7, CAS: 57176-46-2, CAS: 54018-46-1, CAS: 57425-72-6, CAS: 57623-00-4, CAS: 57657-21-3, CAS: 57903-95-4, CAS: 57904-02-6, CAS: 58391-26-7, CAS: 58391-34-7, CAS: 58391-70-1, CAS: 56940-55-7, CAS: 37335-14-1, CAS: 1339-64-6, CAS: 9012-05-9, CAS: 9012-53-7, CAS: 9078-97-1, CAS: 9082-43-3, CAS: 11098-22-9, CAS: 11098-23-0, CAS: 11120-49-3, CAS: 55840-47-6, CAS: 12425-51-3, CAS: 12765-43-4, CAS:

25135-85-7, CAS: 54241-86-0, CAS: 37217-99-5, CAS: 54174-28-6, CAS: 37339-99-4, CAS:  
 39283-00-6, CAS: 39323-33-6, CAS: 39332-51-9, CAS: 39393-24-3, CAS: 50922-66-2, CAS:  
 50926-54-0, CAS: 51110-00-0, CAS: 51806-59-8, CAS: 52350-36-4, CAS: 54018-45-0, CAS:  
 12626-71-0, CAS: 30940-65-9, CAS: 61840-58-2, CAS: 74748-88-2, CAS: 58615-71-7, CAS:  
 60831-59-6, CAS: 65862-61-5, CAS: 60950-64-3, CAS: 61089-89-2, CAS: 61132-10-3, CAS:  
 60704-24-7, CAS: 61711-52-2, CAS: 69280-24-6, CAS: 61970-18-1, CAS: 62997-00-6, CAS:  
 64177-04-4, CAS: 70915-57-0, CAS: 64925-40-2, CAS: 64925-41-3, CAS: 64925-42-4, CAS:  
 61240-82-2, CAS: 59822-42-3, CAS: 60675-85-6, CAS: 59948-33-3, CAS: 59695-09-9, CAS:  
 60083-81-0, CAS: 60083-97-8, CAS: 60083-98-9, CAS: 59871-93-1, CAS: 60407-88-7, CAS:  
 59112-05-9, CAS: 59112-04-8, CAS: 59111-76-1, CAS: 60649-39-0, CAS: 60650-29-5, CAS:  
 58969-02-1, CAS: 59232-94-9.

No data available for xylene as CAS: 8026-09-3.

No data available for propylene glycol monomethyl ether acetate, alpha-isomer as CAS:  
 84540-57-8, CAS: 142300-82-1.

No data available for n-butanol as CAS: 220713-25-7, CAS: 42031-19-6, CAS: 107569-51-7.

## Section 16 - OTHER INFORMATION

### INGREDIENTS WITH MULTIPLE CAS NUMBERS

Ingredient Name	CAS	
urea/ formaldehyde resin	9011-05-6, 39327-95-2, 56779-89-6, 57608-68-1, 57657-45-5, 57762-61-5, 60267-46-1, 60831-80-3, 393138-21-1, 78170-3, 180854-98-2, 189641-36-9, 138988-73-5, 192230-65-2, 77903, 202289-78-9, 85854-40-6, 394250-88-5, 120989-72-2, 8101-8, 112024-34-7, 86338-48-9, 489467-81-4, 87913-96-0, 51-2, 54242-49-8, 77272-60-7, 100786-56-9, 83692-21-1, 37-1, 55777-70-3, 55892-41-6, 55892-42-7, 56090-99-4, 5122-0, 56438-34-7, 56590-69-3, 56690-82-5, 56730-47-3, 5159-7, 56730-69-9, 58449-43-7, 57176-46-2, 54018-46-1, 572-6, 57608-87-4, 57623-00-4, 57657-21-3, 57903-95-4, 5102-6, 58391-26-7, 58391-34-7, 58391-70-1, 56940-55-7, 314-1, 1339-64-6, 9012-05-9, 9012-53-7, 9078-97-1, 9082-11098-22-9, 11098-23-0, 11120-49-3, 55840-47-6, 12425-512765-43-4, 25135-85-7, 54241-86-0, 37217-99-5, 54174-2137339-99-4, 39283-00-6, 39323-33-6, 39332-51-9, 39393-2450922-66-2, 50926-54-0, 51110-00-0, 51806-59-8, 52350-3654018-45-0, 12626-71-0, 30940-65-9, 61840-58-2, 74748-8858615-71-7, 60831-59-6, 65862-61-5, 60950-64-3, 61089-861132-10-3, 60704-24-7, 61711-52-2, 69280-24-6, 61970-162997-00-6, 64177-04-4, 70915-57-0, 64925-40-2, 64925-4164925-42-4, 61240-82-2, 59822-42-3, 60675-85-6, 59948-359695-09-9, 60083-81-0, 60083-97-8, 60083-98-9, 59871-959871-93-1, 60407-88-7, 59112-05-9, 59112-04-8, 59111-76-1, 60649-360650-29-5, 58969-02-1, 59232-94-9	
	1330-20-7, 8026-09-3	
	xylene	
	propylene glycol monomethyl ether acetate, alpha-isomer	108-65-6, 84540-57-8, 142300-82-1
	n-butanol	71-36-3, 220713-25-7, 42031-19-6, 107569-51-7

### REPRODUCTIVE HEALTH GUIDELINES

Ingredient	ORG	UF	Endpoint	CR	Adeq TLV
xylene	1.5 mg/m <sup>3</sup>	10	D	NA	-

These exposure guidelines have been derived from a screening level of risk assessment and should not be construed as unequivocally safe limits. ORGS represent an 8-hour time-weighted average unless specified otherwise.  
 CR = Cancer Risk/10000; UF = Uncertainty factor:  
 TLV believed to be adequate to protect reproductive health:  
 LOD: Limit of detection  
 Toxic endpoints have also been identified as:  
 D = Developmental; R = Reproductive; TC = Transplacental carcinogen  
 Jankovic J., Drake F.: A Screening Method for Occupational Reproductive  
 American Industrial Hygiene Association Journal 57: 641-649 (1996).

### EXPOSURE STANDARD FOR MIXTURES

"Worst Case" computer-aided prediction of vapour components/concentrations:  
 Composite Exposure Standard for Mixture (TWA) (mg/m<sup>3</sup>): 1880 mg/m<sup>3</sup>  
 If the breathing zone concentration of ANY of the components listed below is exceeded, "Worst Case" considerations deem the individual to be overexposed.  
 Component Breathing Zone ppm Breathing Zone mg/m<sup>3</sup> Mixture Conc: (%).

Component Mixture Conc	Breathing zone (ppm)	Breathing Zone (mg/m <sup>3</sup> )	Breathing Zone (%)

nitrocellulose with >25% alcohol, <12.6% nitrogen 1000.00 1880.0000 9.0

operations which produce a spray/mist or fume/dust, introduce particulates to the breathing zone.

If the breathing zone concentration of ANY of the components listed below is exceeded, "Worst Case" considerations deem the individual to be overexposed.

At the "Composite Exposure Standard for Mixture" (TWA) (mg/m<sup>3</sup>): 9 mg/m<sup>3</sup>

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