

# ULTRACOLOR 3065 LAUNDRY INK - RED

Chemwatch Material Safety Data Sheet

Issue Date: 20-Feb-2008

NC317TCP

CHEMWATCH 47291

Version No:2.0

## Section 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

### **PRODUCT NAME**

ULTRACOLOR 3065 LAUNDRY INK - RED

### **SYNONYMS**

"stamping ink"

"indelible ink"

### **PROPER SHIPPING NAME**

TOXIC LIQUID, ORGANIC, N.O.S.  
(contains ethylene glycol monobutyl ether)

### **PRODUCT USE**

Stamping ink.

### **SUPPLIER**

Company: Zeus Chemical Products Pty Ltd  
Address:  
3 Anderson Place  
South Windsor  
NSW, 2756  
AUS  
Telephone: +61 2 4577 4866  
Fax: +61 2 4577 6919

### **HAZARD RATINGS**

Flammability	1
Toxicity	2
Body Contact	2
Reactivity	0
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.**

COMBUSTIBLE LIQUID, regulated under AS1940 for Bulk Storage purposes only.

### POISONS SCHEDULE

S6

#### RISK

Harmful by inhalation in contact with skin and if swallowed.

Irritating to eyes and skin.

May cause CANCER.

Cumulative effects may result following exposure\*.

May produce discomfort of the respiratory system\*.

May be harmful to the foetus/ embryo\*.

May possibly affect fertility\*.

Vapours potentially cause drowsiness and dizziness\*.

\* (limited evidence).

#### SAFETY

Keep locked up.

Do not breathe gas/ fumes/ vapour/ spray.

In case of insufficient ventilation wear suitable respiratory equipment.

Use only in well ventilated areas.

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.

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 Information Centre.

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

## Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS

NAME	CAS RN	%
ethylene glycol monobutyl ether	111-76-2	>60
diethylene glycol monobutyl ether	112-34-5	1-10
C.I. Pigment Red 57:1	5281-04-9	1-10
C.I. Pigment Red 170	2786-76-7	1-10
ethylcellulose	9004-57-3	1-10

NOTE: Manufacturer has supplied full ingredient information to allow CHEMWATCH assessment.

## Section 4 - FIRST AID MEASURES

### SWALLOWED

For advice, contact a Poisons Information Centre or a doctor.

· IF SWALLOWED, REFER FOR MEDICAL ATTENTION, WHERE POSSIBLE, WITHOUT DELAY.

· For advice, contact a Poisons Information Centre or a doctor.

Where Medical attention is not immediately available or where the patient is more than 15 minutes from a hospital or unless instructed otherwise:

· Induce vomiting with fingers down the back of the of the throat, ONLY IF CONSCIOUS.

- Lean patient forward or place on left side (head-down position if possible) to maintain open airway and prevent aspiration.

NOTE: Wear a protective glove when inducing vomiting by mechanical means.

- In the mean time, qualified first-aid personnel should treat the patient following observation and employing supportive measures as indicated by the patient's condition.
- If the services of a medical officer or medical doctor are readily available, the patient should be placed in his/her care and a copy of the MSDS should be provided. Further action will be the responsibility of the medical specialist.
- If medical attention is not available on the worksite or surroundings send the patient to a hospital together with a copy of the MSDS.

## **EYE**

If this product comes in contact with the eyes:

- Immediately hold eyelids apart and flush the eye continuously with 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.
- Continue flushing until advised to stop by the Poisons Information Centre or a doctor, or for at least 15 minutes.
- Transport to hospital or doctor without delay.
- 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**

Followed acute or short term repeated exposures to ethylene glycol monoalkyl ethers and their acetates:

- Hepatic metabolism produces ethylene glycol as a metabolite.
- Clinical presentation, following severe intoxication, resembles that of ethylene glycol exposures.
- Monitoring the urinary excretion of the alkoxyacetic acid metabolites may be a useful indication of exposure.

[Ellenhorn and Barceloux: Medical Toxicology].

For acute or short term repeated exposures to ethylene glycol:

- Early treatment of ingestion is important. Ensure emesis is satisfactory.
- Test and correct for metabolic acidosis and hypocalcaemia.
- Apply sustained diuresis when possible with hypertonic mannitol.
- Evaluate renal status and begin haemodialysis if indicated. [I.L.O.]
- Rapid absorption is an indication that emesis or lavage is effective only in the first few hours. Cathartics and charcoal are generally not effective.
- Correct acidosis, fluid/electrolyte balance and respiratory depression in the usual manner. Systemic acidosis (below 7.2) can be treated with intravenous sodium bicarbonate solution.
- Ethanol therapy prolongs the half-life of ethylene glycol and reduces the formation of toxic metabolites.

- Pyridoxine and thiamine are cofactors for ethylene glycol metabolism and should be given (50 to 100 mg respectively) intramuscularly, four times per day for 2 days.
- Magnesium is also a cofactor and should be replenished. The status of 4-methylpyrazole, in the treatment regime, is still uncertain. For clearance of the material and its metabolites, haemodialysis is much superior to peritoneal dialysis.

[Ellenhorn and Barceloux: Medical Toxicology]

It has been suggested that there is a need for establishing a new biological exposure limit before a workshift that is clearly below 100 mmol ethoxy-acetic acids per mole creatinine in morning urine of people occupationally exposed to ethylene glycol ethers. This arises from the finding that an increase in urinary stones may be associated with such exposures.

Laitinen J., et al: Occupational & Environmental Medicine 1996; 53, 595-600.

## **Section 5 - FIRE FIGHTING MEASURES**

### ***EXTINGUISHING MEDIA***

- Water spray or fog.
- Foam.
- Dry chemical powder.
- BCF (where regulations permit).
- Carbon dioxide.

### ***FIRE FIGHTING***

- Alert Fire Brigade and tell them location and nature of hazard.
- Wear full body protective clothing with breathing apparatus.
- Prevent, by any means available, spillage from entering drains or water course.
- Use water delivered as a fine spray to control 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***

- Combustible.
- Slight fire hazard when exposed to heat or flame.
- Heating may cause expansion or decomposition leading to violent rupture of containers.
- On combustion, may emit toxic fumes of carbon monoxide (CO).
- May emit acrid smoke.
- Mists containing combustible materials may be explosive.

### ***FIRE INCOMPATIBILITY***

Avoid contamination with strong oxidising agents as ignition may result.

### ***HAZCHEM: 2X***

### ***Personal Protective Equipment***

Gas tight chemical resistant suit.

## Section 6 - ACCIDENTAL RELEASE MEASURES

### 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 spill with sand, earth, inert material or vermiculite.
- Wipe up.
- Place in a suitable labelled container for waste disposal.

#### MAJOR SPILLS

Clear area of personnel and move upwind.

- Alert Fire Brigade and tell them location and nature of hazard.
- Wear full body protective clothing with breathing apparatus.
- Prevent, by any means available, spillage from entering drains or water course.
- 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 or absorb spill with sand, earth or vermiculite.
- Collect recoverable product into labelled containers for recycling.
- Collect solid residues and seal in labelled drums for disposal.
- Wash area and prevent runoff into drains.
- After clean up operations, decontaminate and launder all protective clothing and equipment before storing and re-using.
- If contamination of drains or waterways occurs, advise emergency services.

#### PROTECTIVE ACTIONS FOR SPILL

From US Emergency Response Guide 2000  
Guide 153

##### SMALL SPILLS

Name	Isolation Distance	Downwind Day	Protection Night
Toxic liquid, organic, n.o.s. (Inhalation Hazard Zone A)	700 ft (215 m)	1.2 mile (1.9 km)	2.7 mile (4.3 km)
Toxic liquid, organic, n.o.s. (Inhalation Hazard Zone B)	200 ft (60 m)	0.2 mile (0.3 km)	0.7 mile (1.1 km)
Toxic liquid, organic, n.o.s. (when Inhalation Hazard is on a package or shipping paper)	700 ft (215 m)	1.2 mile (1.9 km)	2.7 mile (4.3 km)

##### LARGE SPILLS

Name	Isolation Distance	Downwind Day	Protection Night
Toxic liquid, organic, n.o.s. (Inhalation Hazard Zone A)	3000 ft (915 m)	(7.0+ mile (11.0+ km)	(7.0+ mile (11.0+ km)
Toxic liquid, organic, n.o.s. (Inhalation Hazard Zone B)	600 ft (185 m)	1 mile (1.6 km)	2.5 mile (4 km)
Toxic liquid, organic, n.o.s. (when Inhalation Hazard is on a package or shipping paper)	3000 ft (915 m)	(7.0+ mile (11.0+ km)	(7.0+ mile (11.0+ km)

From IERG (Canada/Australia)  
Isolation Distance 25 metres  
Downwind Protection Distance 250 metres  
IERG Number 36

#### FOOTNOTES

- 1 PROTECTIVE ACTION ZONE is defined as the area in which people are at risk of harmful exposure. This zone assumes that random changes in wind direction confines the vapour plume to an area within 30 degrees on either side of the predominant wind direction, resulting in a crosswind protective action distance equal to the downwind protective action distance.
- 2 PROTECTIVE ACTIONS should be initiated to the extent possible, beginning with those closest to the spill and working away from the site in the downwind direction. Within the protective action zone a level of vapour concentration may exist resulting in nearly all unprotected persons becoming incapacitated and 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 high probability of localised wind reversal may expose nearly all persons without appropriate protection to 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 (jerrican or box 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 153 is taken from the US DOT emergency response guide book.
- 6 IERG information is derived from CANUTEC - Transport Canada.

**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 or ignition sources.
- Avoid contact with incompatible materials.
- When handling, DO NOT eat, drink or smoke.
- Keep containers securely sealed when not in use.
- 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.

### ***SUITABLE CONTAINER***

- Metal can or drum
- Packaging as recommended by manufacturer.
- Check all containers are clearly labelled and free from leaks.

### ***STORAGE INCOMPATIBILITY***

Avoid storage with oxidisers.

## STORAGE REQUIREMENTS

- Store in original containers.
  - Keep containers securely sealed.
  - No smoking, naked lights or ignition sources.
  - Store in a cool, dry, well-ventilated area.
  - Store away from incompatible materials and foodstuff containers.
  - Protect containers against physical damage and check regularly for leaks.
  - Observe manufacturer's storing and handling recommendations.
- DO NOT use aluminium or galvanised containers.

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## SAFE STORAGE WITH OTHER CLASSIFIED CHEMICALS

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+: May be stored together

O: May be stored together with specific preventions

X: Must not be stored together

## Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

### EXPOSURE CONTROLS

Source	Material	TWA ppm	TWA mg/m <sup>3</sup>	STEL ppm	STEL mg/m <sup>3</sup>
Australia Exposure Standards	ethylene glycol monobutyl ether (2-Butoxyethanol)	20	96.9	50	242
Australia Exposure Standards	C.I. Pigment Red 57:1 (Inspirable dust (not otherwise classified))		10		
Australia Exposure Standards	C.I. Pigment Red 170 (Inspirable dust (not otherwise classified))		10		
Australia Exposure Standards	ethylcellulose (Inspirable dust (not otherwise classified))		10		

### ENDOELTABLE

The following materials had no OELs on our records

- diethylene glycol monobutyl ether: CAS:112-34-5

### EMERGENCY EXPOSURE LIMITS

Material	Revised IDLH Value (mg/m <sup>3</sup> )	Revised IDLH Value (ppm)
ethylene glycol monobutyl ether		700 [Unch]

## **ODOUR SAFETY FACTOR (OSF)**

OSF=2E2 (2-BUTOXY ETHANOL)

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

## **MATERIAL DATA**

None assigned. Refer to individual constituents.

## **INGREDIENT DATA**

C.I. PIGMENT RED 57:1:

ETHYLCELLULOSE:

ETHYLENE GLYCOL MONOBUTYL ETHER:

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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

Odour Threshold Value: 0.10 ppm (detection), 0.35 ppm (recognition)  
 Although rats appear to be more susceptible than other animals anaemia is not uncommon amongst humans following exposure. The TLV reflects the need to maintain exposures below levels found to cause blood changes in experimental animals. It is concluded that this limit will reduce the significant risk of irritation, haematologic effects and other systemic effects observed in humans and animals exposed to higher vapour concentrations. The toxic effects typical of some other glycol ethers (pancytopenia, testis atrophy and teratogenic effects) are not found with this substance.

#### DIETHYLENE GLYCOL MONOBUTYL ETHER:

CEL TWA: 15.5 ppm, 100 mg/m<sup>3</sup>

In studies involving the inhalation toxicity of diethylene glycol monobutyl ether, exposure for 6 hours daily at 100 mg/m<sup>3</sup> had no effect.

This concentration is in the range of the saturated vapour concentration. Local damage was produced following inhalation of concentrations higher than the saturated vapour concentrations, that is, during inhalation of the aerosol (350 mg/m<sup>3</sup>). Since the only potential effects of inhalation are restricted to local discomfort (in the aerosol concentration range) the substance is classified in category I for the limitation of exposure peaks. Teratogenicity studies have not revealed prenatal toxic effects at high oral doses and this ether is classified in pregnancy risk group C.

#### C.I. PIGMENT RED 57:1:

These "dusts" have little adverse effect on the lungs and do not produce toxic effects or organic disease. Although there is no dust which does not evoke some cellular response at sufficiently high concentrations, the cellular response caused by P.N.O.C.s has the following characteristics:

- the architecture of the air spaces remain intact,
- scar tissue (collagen) is not synthesised to any degree,
- tissue reaction is potentially reversible.

Extensive concentrations of P.N.O.C.s may:

- seriously reduce visibility,
- cause unpleasant deposits in the eyes, ears and nasal passages,
- contribute to skin or mucous membrane injury by chemical or mechanical action, per se, or by the rigorous skin cleansing procedures necessary for their removal. [ACGIH]

This limit does not apply:

- to brief exposures to higher concentrations
- nor does it apply to those substances that may cause physiological impairment at lower concentrations but for which a TLV has as yet to be determined.

This exposure standard applies to particles which

- are insoluble or poorly soluble\* in water or, preferably, in aqueous lung fluid (if data is available) and
- have a low toxicity (i.e.. are not cytotoxic, genotoxic, or otherwise chemically reactive with lung tissue, and do not emit ionizing radiation, cause immune sensitization, or cause toxic effects other than by inflammation or by a mechanism of lung overload).

#### C.I. PIGMENT RED 170:

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.

## PERSONAL PROTECTION

### EYE

No special equipment for minor exposure i.e. when handling small quantities.

· OTHERWISE:

- Safety glasses with side shields.
- 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

No special equipment needed when handling small quantities.

OTHERWISE: Wear chemical protective gloves, eg. PVC.

### OTHER

No special equipment needed when handling small quantities.

OTHERWISE:

- Overalls.
- Barrier cream.
- Eyewash unit.

### RESPIRATOR

Respiratory protection is required when ANY "Worst Case" vapour-phase concentration is exceeded (see Computer Prediction in "Exposure Standards").

Protection Factor (Min)	Half-Face Respirator	Full-Face Respirator
10 x ES	A-P--AUS	-
	A-P--PAPR-AUS	-
50 x ES	-	A-P--AUS
	-	A-P--PAPR-AUS
100 x ES	-	A-P--2
	-	A-P--PAPR-2

^ - Full-face.

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**

None required when handling small quantities.

OTHERWISE: Use in a well-ventilated area.

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

### **APPEARANCE**

Red liquid; mixes with water.

### **PHYSICAL PROPERTIES**

Liquid.

Mixes with water.

Molecular Weight: Not applicable

Melting Range (°C): Not available

Solubility in water (g/L): Miscible

pH (1% solution): Not available.

Volatile Component (%vol): >90

Relative Vapour Density (air=1): >1

Lower Explosive Limit (%): Not available

Autoignition Temp (°C): Not available

State: Liquid

Boiling Range (°C): 171 approx.

Specific Gravity (water=1): 0.950

pH (as supplied): Not available

Vapour Pressure (kPa): Not available

Evaporation Rate: Not available

Flash Point (°C): >61

Upper Explosive Limit (%): Not available

Decomposition Temp (°C): 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.

## **Section 11 - TOXICOLOGICAL INFORMATION**

### **POTENTIAL HEALTH EFFECTS**

#### **ACUTE HEALTH EFFECTS**

#### **SWALLOWED**

Considered an unlikely route of entry in commercial/industrial environments.

The liquid is highly discomforting and toxic if swallowed.

Ingestion may result in nausea, pain, vomiting. Vomit entering the lungs by aspiration may cause potentially lethal chemical pneumonitis.

#### **EYE**

The liquid is highly discomforting to the eyes and is capable of causing a mild, temporary redness of the conjunctiva (similar to wind-burn), temporary impairment of vision and/ or other transient eye damage/ ulceration.

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

Repeated or prolonged exposure to irritants may produce conjunctivitis.

## **SKIN**

The liquid is discomforting to the skin and it is rapidly absorbed.

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.

Bare unprotected skin should not be exposed to this material.

The material may accentuate any pre-existing skin condition.

The material may cause skin irritation after prolonged or repeated exposure and may produce on contact skin redness, swelling, the production of vesicles, scaling and thickening of the skin.

## **INHALED**

The vapour is discomforting to the upper respiratory tract.

Inhalation hazard is increased at higher temperatures.

Inhalation of high concentrations of gas/vapour causes lung irritation with coughing and nausea, central nervous depression with headache and dizziness, slowing of reflexes, fatigue and inco-ordination.

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

## **CHRONIC HEALTH EFFECTS**

Principal routes of exposure are usually by skin contact/absorption and inhalation of vapour.

Prolonged or continuous skin contact with the liquid may cause defatting with drying, cracking, irritation and dermatitis following.

Chronic solvent inhalation exposures may result in nervous system impairment and liver and blood changes. [PATTYS].

## **TOXICITY AND IRRITATION**

Not available. Refer to individual constituents.

### **ETHYLENE GLYCOL MONOBUTYL ETHER:**

unless otherwise specified data extracted from RTECS - Register of Toxic Effects of Chemical Substances.

#### **TOXICITY**

Oral (rat) LD50: 470 mg/kg

Dermal (rabbit) LD50: 220 mg/kg

Inhalation (human) TClO: 100 ppm

Inhalation (human) TClO: 195 ppm/8h \* [Union Carbide]

Inhalation (rat-male) LC50: 486 ppm \*

Inhalation (rat-female) LC50: 450 ppm \*

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 on contact skin redness, swelling, the production of vesicles, scaling and thickening of the skin.

NOTE: Changes in kidney, liver, spleen and lungs are observed in animals exposed to high concentrations of this substance by all routes.

#### **IRRITATION**

Skin (rabbit): 500 mg, open; Mild

Eye (rabbit): 100 mg/24h-Moderate

Eye (rabbit): 100 mg SEVERE

### **DIETHYLENE GLYCOL MONOBUTYL ETHER:**

unless otherwise specified data extracted from RTECS - Register of Toxic Effects of Chemical Substances.

**TOXICITY**

Oral (rat) LD50: 5660 mg/kg

Dermal (rabbit) LD50: 4120 mg/kg

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

Repeated or prolonged exposure to irritants may produce conjunctivitis.

**IRRITATION**

Eye (rabbit) : 5 mg - SEVERE

Eye (rabbit) : 20 mg/24h Moderate

**C.I. PIGMENT RED 57:1:**

unless otherwise specified data extracted from RTECS - Register of Toxic Effects of Chemical Substances.

**TOXICITY**

Oral (rat) LD50: &gt;5000 mg/kg

Oral (rat) LD50: 14900 mg/kg [CCINFO-HOECHST]  
[CCINFO-DOMINION]**IRRITATION**

Skin: non Irritant

**C.I. PIGMENT RED 170:**

unless otherwise specified data extracted from RTECS - Register of Toxic Effects of Chemical Substances.

**TOXICITY**

Oral (rat) LD50: &gt;10000 mg/kg

\*Engelhard MSDS

**IRRITATION**

Nil Reported [Manuf. Hoechst]

**ETHYLCELLULOSE:**

unless otherwise specified data extracted from RTECS - Register of Toxic Effects of Chemical Substances.

**TOXICITY**

Oral (rat) LD50: &gt;5000 mg/kg

Dermal (rabbit) LD50: &gt;5000 mg/kg

**IRRITATION**

Skin (rabbit): 500 mg/24h Mild

**MATERIAL**

ethylene glycol monobutyl ether

**CARCINOGEN**

IARC:3

**REPROTOXIN****SENSITISER****SKIN****CARCINOGEN**

IARC: International Agency for Research on Cancer (IARC) Carcinogens: ethylene glycol monobutyl ether Category: 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.

**Section 12 - ECOLOGICAL INFORMATION**

Marine Pollutant:Not Determined

No data for Zeus 3065 Indelible Red / LM Red.

Refer to data for ingredients, which follows:

**ETHYLENE GLYCOL MONOBUTYL ETHER:**

Fish LC50 (96hr.) (mg/l): 1490

BCF&lt;100: 0.4

log Kow (Prager 1995): 0.83

log Kow (Sangster 1997): 0.8

Half- life Soil - High (hours): 672

Half- life Soil - Low (hours): 168

Half- life Air - High (hours): 32.8

Half- life Air - Low (hours): 3.28

Half- life Surface water - High (hours): 672

Half- life Surface water - Low (hours): 168

Half- life Ground water - High (hours): 1344

Half- life Ground water - Low (hours): 336

Aqueous biodegradation - Aerobic - High (hours): 672

Aqueous biodegradation - Aerobic - Low (hours): 168

Aqueous biodegradation - Anaerobic - High (hours): 2688  
Aqueous biodegradation - Anaerobic - Low (hours): 672  
Photooxidation half- life air - High (hours): 32.8  
Photooxidation half- life air - Low (hours): 3.28  
Fish LC50 (96hr.) (mg/l): 1250- 1650  
Daphnia magna EC50 (48hr.) (mg/l): 600- 1000

DO NOT discharge into sewer or waterways.

log Kow: 0.76-0.83

Koc: 67

Half-life (hr) air: 17

Henry's atm m<sup>3</sup> /mol: 2.08E-08

BOD 5 if unstated: 0.71

COD: 2.2

Log BCF: 0.4

Fish toxicity:

(-) 24h LD50: 983-1650 mg/L

(Fathead minnow) 96h LC50: 1700 mg/L \*\*

Invertebrate toxicity:

cell mult. inhib.91-900mg/L

(Daphnia) 48h LC50: >1000 mg/L \*\*

Bioaccumulation: not sig

Effects on algae and plankton: cell mult. inhib.35-900mg/L

Degradation Biological: rapid

processes Abiotic: no hydrol&photol,RxnOH\* \*\* [Union Carbide]

DIETHYLENE GLYCOL MONOBUTYL ETHER:

DO NOT discharge into sewer or waterways.

log Kow 0.15-1.0

Koc: 75

Henry's atm m<sup>3</sup> /mol: 1.52E-09

BOD 5 if unstated: 0.25

COD: 2.08

log BCF: 0.46

C.I. PIGMENT RED 170:

DO NOT discharge into sewer or waterways.

### Section 13 - DISPOSAL CONSIDERATIONS

- Consult manufacturer for recycling options and recycle where possible .
- Consult State Land Waste Management Authority for disposal.
- Incinerate residue at an approved site.
- Recycle containers if possible, or dispose of in an authorised landfill.

### Section 14 - TRANSPORTATION INFORMATION

Labels Required: TOXIC

HAZCHEM: 2X

UNDG:

Dangerous Goods Class:

6.1

Subrisk:

None

UN Number:

2810

Packing Group:

III

Shipping Name:TOXIC LIQUID, ORGANIC, N.O.S.

(contains ethylene glycol monobutyl ether)

#### **Air Transport IATA:**

ICAO/IATA Class:

6.1

ICAO/IATA Subrisk:

None

UN/ID Number:

2810

Packing Group:

III

Special provisions:

A3 A4 A137

Shipping Name: TOXIC LIQUID, ORGANIC N.O.S.

**Maritime Transport IMDG:**

IMDG Class:	6.1	IMDG Subrisk:	None
UN Number:	2810	Packing Group:	III
EMS Number:	F-A,S-A	Special provisions:	223 274 944
Limited Quantities:	5 L	Marine Pollutant:	Not Determined
Shipping Name: TOXIC LIQUID, ORGANIC, N.O.S.			

**Section 15 - REGULATORY INFORMATION**

**POISONS SCHEDULE: S6**

**REGULATIONS**

Zeus 3065 Indelible Red / LM Red (CAS: None):  
No regulations applicable

ethylene glycol monobutyl ether (CAS: 111-76-2) is found on the following regulatory lists;

- Australia Exposure Standards
- Australia Hazardous Substances
- Australia High Volume Industrial Chemical List (HVICL)
- Australia Inventory of Chemical Substances (AICS)
- Australia Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP) - Appendix E (Part 2)
- IMO MARPOL 73/78 (Annex II) - List of Other Liquid Substances
- International Agency for Research on Cancer (IARC) Carcinogens
- OECD Representative List of High Production Volume (HPV) Chemicals

diethylene glycol monobutyl ether (CAS: 112-34-5) is found on the following regulatory lists;

- Australia Hazardous Substances
- Australia High Volume Industrial Chemical List (HVICL)
- Australia Inventory of Chemical Substances (AICS)
- Australia Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP) - Schedule 5
- IMO MARPOL 73/78 (Annex II) - List of Other Liquid Substances
- OECD Representative List of High Production Volume (HPV) Chemicals

C.I. Pigment Red 57:1 (CAS: 5281-04-9) 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

C.I. Pigment Red 170 (CAS: 2786-76-7) 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

ethylcellulose (CAS: 9004-57-3) is found on the following regulatory lists;

- Australia Exposure Standards
- Australia Inventory of Chemical Substances (AICS)
- CODEX General Standard for Food Additives (GSFA) - Additives Permitted for Use in Food in General, Unless Otherwise Specified, in Accordance with GMP
- United Nations Convention Against Illicit Traffic in Narcotic Drugs and Psychotropic Substances - Table II

No data available for C.I. Pigment Red 170 as CAS: 12236-67-8, CAS: 63661-01-8, CAS: 119509-90-9, CAS: 198292-71-6.

## Section 16 - OTHER INFORMATION

### INGREDIENTS WITH MULTIPLE CAS NUMBERS

Ingredient Name	CAS
C.I. Pigment Red 170	2786-76-7, 12236-67-8, 63661-01-8, 119509-90-9, 198292-71-6

### REPRODUCTIVE HEALTH GUIDELINES

Ingredient	ORG	UF	Endpoi nt	CR	Adeq
ethylene glycol monobutyl ether	3.6 mg/m <sup>3</sup>		TLV 100	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>): 100 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	Breathing zone (ppm)	Breathing Zone (mg/m <sup>3</sup> )	Mixture Conc
diethylene glycol monobutyl ether	15.50	100.0000	10.0

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.

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