



## PHYSICAL DESCRIPTION / PROPERTIES



### APPEARANCE

Clear highly flammable liquid with a typical hydrocarbon liquid odour; floats on water. Classified as an aliphatic solvent; i.e has low aromatic content.

Boiling Point	47-128
Melting Point	Not available
Vapour Pressure (kPa)	34.5 @ 15 deg C
Specific Gravity	0.708 @ 15 deg C
Flash Point (deg C)	<-30
Lower Explosive Limit (%)	1.0
Upper Explosive Limit (%)	7.5
Solubility in Water (g/L)	Immiscible

### INGREDIENTS

NAME	CAS RN	%
Paraffins and naphthenes as Liquid hydrocarbons	Various	>60
N-hexane	110-54-3	13
Aromatic hydrocarbons total, including		< 5.0
Toluene	108-88-3	3.5 app
Ethylbenzene	100-41-4	1
Benzene	71-43-2	< 0.5
C8 and higher aromatics		1

## HEALTH HAZARD



### ACUTE HEALTH EFFECTS

#### **SWALLOWED**

The liquid is discomforting and may be harmful if swallowed. Ingestion may result in nausea, pain, vomiting. Vomit entering the lungs by aspiration may cause potentially lethal chemical pneumonitis. Considered an unlikely route of entry in commercial/industrial environments.

#### **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 vapour is discomforting to the eyes. The material may be irritating to the eye, with prolonged contact causing inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis.

#### **SKIN**

The liquid is discomforting to the skin and is capable of causing skin reactions which may lead to dermatitis. 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 accentuate any pre-existing skin condition. Open cuts, abraded or irritated skin should not be exposed to this material.

## **INHALED**

The vapour is discomforting to the upper respiratory tract and may be toxic. Inhalation hazard is increased at higher temperatures. Acute effects from inhalation of high concentrations of vapour are pulmonary irritation, including coughing, with nausea; central nervous system depression - characterised by headache and dizziness, increased reaction time, fatigue and loss of co-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 inhalation of vapour and skin contact/absorption. Chronic solvent inhalation exposures may result in nervous system impairment and liver and blood changes. [PATTYS]. Chronic inhalation exposures may show indications of peripheral neuropathy, a progressive nerve disorder of extremities. Prolonged or continuous skin contact with the liquid may cause defatting with drying, cracking, irritation and dermatitis following. n-hexane is indicated in cases of peripheral neuropathy and chronic inhalation exposure may be expected to show nervous system impairment.

## **FIRST AID**

### **SWALLOWED**

If poisoning occurs, contact a doctor or Poisons Information Centre.  
If swallowed, DO NOT induce vomiting. Give a glass of water.

### **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.

## **ADVISE TO THE DOCTOR**

For acute or short term repeated exposures to petroleum distillates or related hydrocarbons:

Primary threat to life, from pure petroleum distillate 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) 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. Lavage is indicated in patients who require decontamination; ensure use of cuffed endotracheal tube in adult patients.

[Ellenhorn and Barceloux: Medical Toxicology]

## PRECAUTIONS FOR USE



### EXPOSURE STANDARDS

CEL TWA: 200 ppm, 800 mg/m<sup>3</sup> [SHELL]

### REPRODUCTIVE HEALTH GUIDELINES

Established occupational exposure limits frequently do not take into consideration reproductive end points that are clearly below the thresholds for other toxic effects. Occupational reproductive guidelines (ORGs) have been suggested as an additional standard. These have been established after a literature search for reproductive no-observed-adverse effect-level (NOAEL) and the lowest-observed-adverse-effect-level (LOAEL). In addition the US EPA's procedures for risk assessment for hazard identification and dose-response assessment as applied by NIOSH were used in the creation of such limits.

	ORG	UF	Endpoint	CR	TLV Adequate.
n-hexane	176 mg/m <sup>3</sup>	NA	NA	NA	Yes
toluene	9.6 mg/m <sup>3</sup>	10	D	NA	-
benzene	0.05 mg/m <sup>3</sup>	1000	D	1.4	-

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)

### INGREDIENT DATA

#### LIQUID HYDROCARBONS:

No exposure limits set by NOHSC or ACGIH

#### N-HEXANE:

TLV TWA: 500 ppm [ACGIH]

TLV STEL: 1000 ppm [ACGIH]

TLV TWA: 50 ppm Skin;BEI [ACGIH]

PEL TWA: 500 ppm, 1800 mg/m<sup>3</sup> [OSHA Z1]

TLV TWA: 50 ppm, 176 mg/m<sup>3</sup> SKIN

ES TWA: 20 ppm, 72 mg/m<sup>3</sup>

OES TWA: 20 ppm, 72 mg/m<sup>3</sup>

MAK value: 50 ppm, 180 mg/m<sup>3</sup>

MAK Category II Peak Limitation: For substances with systemic effects and with a half-life in humans of less than two hours.

Allows excursions of 2 times the MAK value, for 30 minutes (on average), four times per shift.

MAK Group C: There is no reason to fear risk of damage to the developing embryo when MAK and BAT values are observed.

MAK values, and categories and groups are those recommended within the Federal Republic of Germany 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.

Odour Threshold Value: 65 ppm

IDLH Level: 1100 ppm (lower explosive limit)

NOTE: Detector tubes for n-hexane, measuring in excess of 100 ppm, are available commercially.

Occupational polyneuropathy may result from exposures as low as 500 ppm (as hexane), whilst nearly continuous exposures of 250 ppm have caused neurotoxic effects in animals. Many literature reports have failed to distinguish hexane from n-hexane and on the assumption that the commercial hexane contains 30%

n-hexane, a worst case recommendation for TLV is assumed to reduce the risk of peripheral neuropathies (due to the metabolites 2,5-heptanedione and 3,6-octanedione) and other adverse neuropathic effects. Concurrent exposure to chemicals (including MEK) and drugs which induce hepatic liver oxidative metabolism can reduce the time for neuropathy to appear.

**TOLUENE:**

TLV TWA: 50 ppm Skin;A4;BEI [ACGIH]

PEL: 8hr TWA 200 ppm ; Ceiling Conc: 300ppm ; Max excursion: 500 ppm for 10 minutes [OSHA Z2]

ES TWA: 50 ppm, 191 mg/m<sup>3</sup>; STEL 150 ppm, 574 mg/m<sup>3</sup> SKIN

TLV TWA: 50 ppm, 188 mg/m<sup>3</sup> SKIN A4

NOTE: This substance has been classified by the ACGIH as A4 NOT classifiable as causing Cancer in humans

OES TWA: 50 ppm, 191 mg/m<sup>3</sup>; STEL: 150 ppm, 574 mg/m<sup>3</sup> SKIN

MAK value: 50 ppm, 190 mg/m<sup>3</sup>

MAK Category II Peak Limitation: For substances with systemic effects and with a half-life in humans ranging from two hours to shift-length.

Allows excursions of 5 times the MAK value, for 30 minutes (on average), twice per shift.

MAK Group C: There is no reason to fear risk of damage to the developing embryo when MAK and BAT values are observed.

MAK values, and categories and groups are those recommended within the Federal Republic of Germany

IDLH Level: 500 ppm

Odour Threshold Value: 0.16-6.7 (detection), 1.9-69 (recognition)

NOTE: Detector tubes measuring in excess of 5 ppm, are available.

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.

High concentrations of toluene in the air produce depression of the central nervous system (CNS) in humans. Intentional toluene exposure (glue-sniffing) at maternally-intoxicating concentration has also produced birth defects. Foetotoxicity appears at levels associated with CNS narcosis and probably occurs only in those with chronic toluene-induced kidney failure. Exposure at or below the recommended TLV-TWA is thought to prevent transient headache and irritation, to provide a measure of safety for possible disturbances to human reproduction, the prevention of reductions in cognitive responses reported amongst humans inhaling greater than 40 ppm, and the significant risks of hepatotoxic, behavioural and nervous system effects (including impaired reaction time and incoordination). Although toluene/ethanol interactions are well recognised, the degree of protection afforded by the TLV-TWA among drinkers is not known.

**ETHYLBENZENE:**

TLV TWA: 100 ppm A3; BEI [ACGIH]

TLV STEL: 125 ppm A3; BEI [ACGIH]

PEL TWA: 100 ppm, 435 mg/m<sup>3</sup> [OSHA Z1]

TLV TWA: 100 ppm; STEL: 125 ppm A3

CAUTION: This substance has been classified by the ACGIH as A3 Animal Carcinogen (at relatively high doses)

ES TWA: 100 ppm, 435 mg/m<sup>3</sup>; STEL: 125 ppm, 545 mg/m<sup>3</sup> (Under review)

OES TWA: 100 ppm, 441 mg/m<sup>3</sup>; STEL: 125 ppm, 552 mg/m<sup>3</sup>

MAK value: 100 ppm, 440 mg/m<sup>3</sup>

Designated H in List of MAK values: Danger of cutaneous absorption.

Absorption of such substances through the skin can pose an incomparably larger danger of toxicity than their inhalation. To avoid health risks when handling such substances, meticulous cleaning of the skin, hair and clothing is imperative.

MAK Category I Peak Limitation: For local irritants Allows excursions of twice the MAK value for 5 minutes at a time, 8 times per shift.

MAK Group D: Classification as to the effect of the substance on the developing embryo/foetus is not yet possible because although data may indicate a trend, they are not sufficient for a final evaluation.

MAK values, and categories and groups are those recommended within the Federal Republic of Germany

Odour Threshold Value: 0.46-0.60 ppm

IDLH Level: 800 ppm (lower explosion limit)

NOTE: Detector tubes for ethylbenzene, measuring in excess of 30 ppm, are commercially available.

Ethyl benzene produces irritation of the skin and mucous membranes and appears to produce acute and chronic effects on the central nervous system. Animal experiments also suggest the effects of chronic exposure include damage to the liver, kidneys and testes. In spite of structural similarities to benzene, the material does not appear to cause damage to the haemopoietic system. The TLV-TWA is thought to be

protective against skin and eye irritation. Exposure at this concentration probably will not result in systemic effects.

Subjects exposed at 200 ppm experienced transient irritation of the eyes; at 1000 ppm there was eye irritation with profuse lachrymation; at 200 ppm eye irritation and lachrymation were immediate and severe accompanied by moderate nasal irritation, constriction in the chest and vertigo; at 5000 ppm exposure produced intolerable irritation of the eyes and throat.

**BENZENE:**

TLV TWA: 0.5 ppm Skin; A1; BEI [ACGIH]

TLV STEL: 2.5 ppm Skin; A1; BEI [ACGIH]

PEL TWA: 1 ppm [OSHA Z1]

The final benzene standard in 1910.1028 applies to all occupational exposures to benzene except in some circumstances the distribution and sale of fuels, sealed containers and pipelines, coke production, oil and gas drilling and production, natural gas processing, and the percentage exclusion for liquid mixtures where the following limit from OSHA Z2 applies

PEL: 8hr TWA 10 ppm ; Ceiling Conc: 25ppm ; Max excursion: 50 ppm for 10 minutes [OSHA Z2]

ES TWA: 5 ppm, 16 mg/m<sup>3</sup>

WARNING: This substance is classified by the NOHSC as Category 1 ESTABLISHED

HUMAN CARCINOGEN

PROPOSED CHANGE

ES TWA 1 ppm

TLV TWA: 0.5 ppm, 1.6 mg/m<sup>3</sup>; STEL: 2.5 ppm, 8 mg/m<sup>3</sup> SKIN A1

WARNING: This substance has been classified by the ACGIH as A1 CONFIRMED HUMAN CARCINOGEN

MEL TWA: 3 ppm

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. Designated H in List of MAK values: Danger of cutaneous absorption. Absorption of such substances through the skin can pose an incomparably larger danger of toxicity than their inhalation. To avoid health risks when handling such substances, meticulous cleaning of the skin, hair and clothing is imperative.

MAK IIIA1: Substances shown to induce malignant tumours in humans Germ cell mutagens: Group 3

Substances which have been demonstrated to cause genetic damage in mammalian (including human) germ cells without proof of transmission.

The term "germ cell mutagen" is applied to substances causing hereditary disorders in the progeny due to mutational damage in the male and female germ cell (ovum or spermatozoan). This damage may be gene mutations or structural or numerical chromosome alterations.

MAK values, and categories and groups are those recommended within the Federal Republic of Germany

PEL TWA: 1 ppm, 3 mg/m<sup>3</sup>; C: 5 ppm, 15 mg/m<sup>3</sup> [OSHA]

REL TWA: 0.32 mg/m<sup>3</sup> 10 hour; CEILING: 3.2 mg/m<sup>3</sup> 15 mins [NIOSH]

IDLH Level: 500 ppm

TRK:

coking plants (tar separator, condensation, gas exhauster house): 2.5 ml/m<sup>3</sup>; 8 mg/m<sup>3</sup>

refuelling field in the mineral oil industry: 2.5 ml/m<sup>3</sup>; 8 mg/m<sup>3</sup>

repair and servicing of parts conducting benzene

in the chemical and mineral oil industries: 2.5 ml/m<sup>3</sup>; 8 mg/m<sup>3</sup>

gasoline supply rooms for engine test stands: 2.5 ml/m<sup>3</sup>; 8 mg/m<sup>3</sup>

others: 1 ml/m<sup>3</sup>; 3.2 mg/m<sup>3</sup>

It is anticipated that the threshold value in air is to be reduced to 3.2 mg/m<sup>3</sup> (1 ml/m<sup>3</sup>). The technical exposure limit, TRK (Technische Richtkonzentrationen), defines the airborne concentration of named carcinogenic materials, which is the minimum possible given the state of current technologies. TRK values are assigned only for materials for which there is no current MAK (German exposure standard).

Observance of the TRK value is intended to reduce the risk of adverse effects on health but does NOT completely eliminate it. Since no threshold doses can be determined for carcinogens, health considerations require that the exposure limits be kept as far as possible below the TRK and that the TRK value be gradually reduced. The limitation of exposure peaks is regulated as follows;

Short-term exposure limit: 5 x TRK

Short-term exposure duration: 15 min/average

Frequency per work shift: 5 times

Interval: 1 hour

Report No. 35 1999, Deutsche Forschungsgemeinschaft.

Odour Threshold Value: 34 ppm (detection), 97 ppm (recognition)

NOTE: Detector tubes for benzene, measuring in excess of 0.5 ppm, are commercially available.

The relative quality of epidemiological data and quantitative health risk assessments related to documented and theoretical leukaemic deaths constitute the basis of the TLV-recommendation. One study [Dow Chemical] demonstrates a significant fourfold increase in myelogenous leukaemia for workers exposed to average benzene concentrations of about 5 ppm for an average of 9 years and that 2 out of four individuals in the study who died from leukaemia were characterised as having been exposed to average benzene levels below 2 ppm. Based on such findings the estimated risk of leukaemia in workers exposed at daily benzene concentrations of 10 ppm for 40 years is 155 times that of unexposed workers; at 1 ppm the risk falls to 1.7 times whilst at 0.1 ppm the risk is about the same in the two groups. A revision of the TLV-TWA to 0.1.ppm was proposed in 1990 but this has been revised upwards as result of industry initiatives.

Typical toxicities displayed following inhalation:

At 25 ppm (8 hours): no effect  
 50-150 ppm : signs of intoxication within 5 hours  
 500-1500 ppm : signs of intoxication within 1 hour  
 7500 ppm : severe intoxication within 30-60 minutes  
 20000 ppm : fatal within 5-10 minutes

Some jurisdictions require that health surveillance be conducted on occupationally exposed workers. Some surveillance should emphasise

- (i) demography, occupational and medical history and health advice
- (ii) baseline blood sample for haematological profile
- (iii) records of personal exposure

## **ENGINEERING CONTROLS**

Use in a well-ventilated area

If inhalation risk of overexposure exists, wear SAA approved organic-vapour respirator.

General exhaust is adequate under normal operating conditions. Local exhaust ventilation may be required in special circumstances. If risk of overexposure exists, wear approved respirator. Supplied-air type respirator may be required in special circumstances. Correct fit is essential to ensure adequate protection. Provide adequate ventilation in warehouses and enclosed storage areas. 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.)
grinding, abrasive blasting, tumbling, high speed wheel generated dusts (released at high initial velocity into zone of very high rapid air motion)	2.5-10 m/s (500-2000 f/min.)

Within each range the appropriate value depends on:

Lower end of the range

- 1: Room air currents minimal or favourable to capture
- 2: Contaminants of low toxicity or of nuisance value only.
- 3: Intermittent, low production.
- 4: Large hood or large air mass in motion

Upper end of the range

- 1: Disturbing room air currents
- 2: Contaminants of high toxicity
- 3: High production, heavy use
- 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. In confined spaces where there is inadequate ventilation, wear full-face air supplied breathing apparatus

## **PERSONAL PROTECTION**

### **EYES**

Safety glasses with side shields.

Chemical goggles. Full face shield.

DO NOT wear contact lenses.

Contact lenses pose a special hazard; soft contact lenses may absorb irritants and all lenses concentrate them.

### **HANDS / FEET**

Neoprene gloves or PVC gloves.

Protective footwear.

Do NOT use this product to clean the skin.

### **OTHER**

Overalls.

Eyewash unit.

Barrier cream.

Skin cleansing cream.

### **RESPIRATOR**

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

Protection Factor	Half Face Respirator	Full Face Respirator
10 x ES	AX -AUS AX -PAPR-AUS	- -
50 x ES	-	AX -AUS AX -PAPR-AUS
100 x ES	-	AX -2 AX -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.

## **SAFE HANDLING**



## **STORAGE AND TRANSPORT**

### **SUITABLE CONTAINER**

Check all containers are clearly labelled and free from leaks.

### **STORAGE INCOMPATIBILITY**

Avoid storage with oxidisers

### **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.

## **TRANSPORTATION**

Class 3 - Flammable liquids shall not be loaded in the same vehicle or packed in the same vehicle or packed in the same freight container with:

Class 1 - Explosives;

Class 2.1 - Flammable gases (where both flammable liquids and flammable gases are in bulk);

Class 2.3 - Poisonous gases;

Class 4.2 - Spontaneously combustible substances;

Class 5.1 - Oxidising agents;

Class 5.2 - Organic peroxides;

Class 7 - Radioactive substances.

## **SPILLS AND DISPOSAL**

### **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.

### **EMERGENCY RESPONSE PLANNING GUIDLINES (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 1000 ppm irreversible or other serious effects or symptoms which could impair an individual's ability to take protective action is 300 ppm other than mild, transient adverse effects without perceiving a clearly defined odour is 50 ppm American Industrial Hygiene Association (AIHA)

### **DISPOSAL**

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.

## **FIRE FIGHTERS' REPORT**

### **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.  
When any large container (including road and rail tankers) is involved in a fire, consider evacuation by 500 metres in all directions.

### **FIRE/EXPLOSION HAZARD**

Liquid and vapour are highly flammable.  
Severe fire hazard when exposed to heat, flame and/or oxidisers.  
Vapour forms an explosive mixture with air.  
Severe explosion hazard, in the form of vapour, when exposed to flame or spark.  
Vapour may travel a considerable distance to source of ignition.  
Heating may cause expansion / decomposition with violent rupture of containers.  
On combustion, may emit toxic fumes of carbon monoxide (CO) May emit clouds of acrid smoke

### **FIRE INCOMPATIBILITY**

Avoid contamination with oxidising agents as ignition may result

### **HAZCHEM**

3[Y]E

## **CONTACT POINT**



In the event of a chemical event of a chemical incident phone **0800 243 622** for immediate assistance.

### **AUSTRALIAN POISONS INFORMATION CENTRE**

24 HOUR SERVICE: 13 11 26  
POLICE, FIRE BRIGADE OR AMBULANCE: 000

### **NEW ZEALAND POISONS INFORMATION CENTRE**

24 HOUR SERVICE: (03) 4747 000  
NZ EMERGENCY SERVICES: 111

End of Report

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