



Manufacturers of UTHANE Polyurethane Coatings
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Date Of Issue : 27/06/12

Emergency Telephone No. +612 9634-5560
MATERIAL SAFETY DATA SHEET
BC100 ELECTRO THINNER

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Ref msds 00015

1. IDENTIFICATION

PRODUCT NAME : BC100 ELECTRO THINNER
CORRECT SHIPPING NAME : Paint Related Material, Thinners, LFP
OTHER NAMES : Not Applicable
UN NUMBER : 1263 **CAS NUMBER** : Not Available
AICS STATUS : All Components Listed
DANGEROUS GOODS CLASS : 3 (FLAMMABLE LIQUID)
IMO HAZARD CLASS : INFLAMMABLE LIQUID/3.2
PACKAGING GROUP : II **AS 1940 CLASS** : PG III
SUBSIDIARY RISK : None **HAZCHEM CODE** : •3YE
POISONS SCHEDULE : S5 **EPG** : 3A2
USE : Used as a solvent in paints.

For Industrial Use Only In Spray Areas Complying With Relevant Regulations.

COMPANY / UNDERTAKING

BC COATINGS
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Phone +612 9729-2000, FAX +612 9729-2279
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The following personnel should be contacted depending on the nature of the inquiry.

TECHNICAL MANAGER PRODUCTION MANAGER
MANAGING DIRECTOR SALES MANAGER

AUSTRALIAN POISONS INFORMATION CENTRE 24 HOUR SERVICE : 13 11 26

POLICE OR FIRE BRIGADE : 000 (exchange) : 1100

This Fact Sheet is a summary potential and the most severe health hazards that may result from exposure. Always read the Material Safety Data Sheets (MSDS) for any products you use at work. They contain useful information on hazards and control measures. Safety Data Sheets are current for a maximum of five years but may be updated more frequently. Please ensure that you have a current copy.

The information given in this bulletin and by the company's technical staff is provided as a general guide only to facilitate the adoption of appropriate measures in relation to handling, storage and disposal of the product. Although BC Coatings has taken all reasonable care to ensure that the information is accurate, it accepts no responsibility for any loss or damage however caused that results there from and does not warrant such accuracy whether or not the information originated with BC Coatings . BC Coatings urges each recipient of this MSDS to study it carefully to become aware of and understand the hazards associated with the product. The reader should consider consulting reference works or individuals who are experts in ventilation, toxicology, and fire prevention, as necessary or appropriate to use and understand the data contained in this MSDS. To promote safe handling, each customer or recipient should notify its employees, agents, contractors and others whom it knows or believes will use this material or the information in this MSDS and any other information regarding hazards or safety. Users of the product are requested to contact BC Coatings technical section for detailed information regarding the qualities and characteristics of the product before it is used. We reserve the right to revise Material Safety Data Sheets periodically as new information becomes available.



2. HAZARDS IDENTIFICATION

Leaks of gas or spills of liquid can readily form flammable mixtures at temperatures at or above flash point.

Hazardous according to criteria of NOHSC

Classified as dangerous goods according to the criteria of the ADG

CLASSIFICATION AND LABELLING ACCORDING TO NOHSC CODES

CLASSIFICATION / SYMBOL : HIGHLY FLAMABLE / F
CLASSIFICATION / SYMBOL : HARMFUL / X_n - IRRITANT / Xi
CLASSIFICATION : Dangerous Goods according to the Australian Dangerous Goods Code
GOVERNING DIRECTIVE : National Code of practice for the Labelling of Hazardous Substances.
LABEL NAME : Paint related material, Thinners, LFP

HAZARDS IDENTIFICATION

RISK PHRASES

R10 Flammable.
R18 In use, may form flammable/explosive vapor-air mixture.
R20/21/22 Harmful by inhalation, in contact with skin and if swallowed.
R36/37/38 Irritating to eyes, respiratory system and skin.
R42/43 May cause sensitisation by inhalation and skin contact.

SAFETY ADVICE

S3/7/9 Keep container tightly closed in a cool, well ventilated place.
S16 Keep away from sources of ignition - No smoking.
S20/21 When using, do not eat, drink or smoke.
S23 Do not breathe gas/fumes/vapour/spray
S24/25 Avoid contact with skin and eyes.
S29 Do not empty into drains.
S33 Take precautionary measures against static discharges.
S36/37/39 Wear suitable protective clothing, gloves and eye/face protection.
S43B In case of fire use sand, earth, chemical powder or alcohol type foam
S51 Use only in well ventilated areas.

HAZARD RATINGS

Flammability : 2
Health Hazard : 1
Body Contact : 1
Reactivity : 0
SCALE : Min/Nil = 0 Low = 1 Moderate = 2 High = 3 Extreme = 4



2. HAZARDS IDENTIFICATION - continued

HEALTH EFFECTS - ACUTE EXPOSURE

No adverse health effects expected if the product is handled in accordance with this Safety Data Sheet and the product label.

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

The following acute (short term) health effects may occur immediately or shortly after exposure to this product.

Exposure to this product can occur in the workplace or in the environment following releases to air, water, land, or groundwater.

This product can enter the body when breathed in with contaminated air or when consumed with contaminated food or water.

It can also be absorbed through skin contact.

Effects of this product on human health and the environment depend on how much of the product is present and the length and frequency of exposure.

Effects also depend on the health of a person or the condition of the environment when exposure occurs.

Studies show that repeat exposure to large amounts of hydrocarbon solvents adversely affects the nervous system, the kidneys, and the liver of animals.

Narcotic effects occur at levels below the exposure standard.

High vapor concentrations are irritating to the eyes, nose, mouth, and throat, mucous membranes and the respiratory tract, may cause sore throat, insomnia coughing, headaches, tiredness, dizziness, a burning sensation to the eyes, blurred vision, mental sluggishness, lethargy, weakness, tremor, nausea and vomiting, unconsciousness, are anaesthetic and may have other central nervous system effects.

Gastroenteritis, heartburn and intestinal pain, diarrhoea, loss of appetite and anorexia, may also occur.

Acute exposure may also result in narcosis, pulmonary oedema and severe kidney and liver damage.

Narcotic effects can occur at levels below the exposure standard.

Exposure to very high concentrations can be fatal.

Lower levels may cause trouble concentrating, headaches, and slowed reflexes.

If a large amount (>1 ml/kg) is ingested and retained can cause gastrointestinal irritation, kidney damage, symptoms of CNS depression and irritation occur and include weakness, dizziness, unconsciousness and convulsions.

Systemic effects from short-term high exposures may include lung, kidney and brain damage.

Tolerance is reported to be acquired over the work week and lost over the weekend.

It is readily absorbed by the skin.

Prolonged, repeated skin contact with low viscosity materials may de-fat the skin resulting in possible irritation and dermatitis.

Breathing air which contains solvents, resulting from its use in spraying applications, may cause delayed lung damage.

The liquid can severely burn the eyes. Corneal damage will occur after prolonged contact.

Vapor may cause conjunctivitis.

Temporary corneal clouding may also result and may last several hours.

TARGET ORGANS : Central nervous system, eyes, skin, gastro-intestinal tract, blood, liver and kidneys

MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE

: Skin disorders, damaged skin, respiratory system disease, kidney, liver, or blood disorders.

ROUTES OF ENTRY : Ingestion, inhalation, skin contact, eye contact, absorption

2. HAZARDS IDENTIFICATION - continued**SWALLOWED**

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

Harmful if swallowed.

The liquid is irritating to mouth, throat and the gastrointestinal tract and may be toxic if swallowed in quantity.

Ingestion can result in nausea, cramps, abdominal pain, vomiting, diarrhoea and central nervous system depression.

Ingestion in large quantities may lead to unconsciousness and is expected to cause central nervous system depression and severe poisoning and may lead to kidney injury.

Tends to break into a foam if the patient vomits.

Ingestion of small quantities can result in headache, weakness, dizziness, drowsiness, pain, nausea, cramps, abdominal pain, vomiting, diarrhoea and central nervous system depression.

Small amounts of liquid aspirated into respiratory system during ingestion or from vomiting may cause, broncho-pneumonia pulmonary oedema or potentially lethal chemical pneumonitis.

Tends to break into a foam if the patient vomits.

If the victim is uncoordinated there is a greater likelihood of vomit entering the lungs and causing subsequent complications.

EYE

The vapour and the liquid are both severe eye irritants.

The liquid is capable of causing corneal injury and severe damage with loss of sight if not promptly and adequately treated.

SKIN

The liquid is irritating to the skin if contact is prolonged and may cause de-fatting and drying of the skin which may lead to dermatitis from repeated exposures over long periods.

Capable of being absorbed by the skin and may cause central nervous system depression.

Toxic effects may result from skin absorption.

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.

Capable of causing skin sensitisation and allergic skin reactions.

Bare unprotected skin, abraded or irritated skin, open cuts and etc., should not be exposed to this material.

The material may accentuate any pre-existing skin condition.

INHALED

Acute effects from inhalation of vapor/mist concentrations above recommended exposure levels produce dryness of the mouth and throat, are irritating to the eyes, mucous membranes and the upper respiratory tract (with coughing and sneezing), could be anaesthetic and may have other central nervous system effects (characterized by headache, drowsiness, dizziness, nausea, vomiting, increased reaction time, fatigue, loss or co-ordination, impaired judgement, lassitude, irritability, tingling in fingers and toes and in extreme cases coma), gastrointestinal disturbances (e.g. nausea, anorexia and flatulence), low blood pressure and rapid and irregular pulse as well as affecting the kidneys, liver, and the heart.

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

Inhalation hazard is increased at higher temperatures.

Toxic effects are increased by consumption of alcohol.

Repeated exposure may cause sensitisation and/or allergic reactions.

Central nervous system (CNS) depression may be evident early.

Aspiration of liquid into lungs can cause serious (even fatal) pneumonitis.

Significant exposure to this chemical may adversely affect people with chronic disease of the respiratory system, skin and/or eyes.

Physical exercise may antagonize this effect.



2. HAZARDS IDENTIFICATION - continued

HEALTH EFFECTS - CHRONIC EXPOSURE

Chronic (long term) health effects can occur at some time after exposure to this product and can last for months or years. Principal routes of exposure are usually by skin contact/absorption and inhalation of vapour. Prolonged or continuous skin contact with liquid may cause de-fatting with drying, cracking, irritation and dermatitis following. Skin contact may aggravate an existing dermatitis. Excessive acute absorption may cause central nervous system depression. Repeated exposure may damage bone marrow, causing low blood cell count. It can also cause damage to the surface of the eye and cause stomach problems. Evidence from animal tests indicate that repeated or prolonged solvent inhalation exposures could result in kidney disorders, nervous system impairment, liver and blood changes. [PATTYS].

Symptoms of chronic exposure may include headaches, weakness, loss of appetite, burning eyes, stomach-ache, nausea, vomiting, sore throat, tiredness, insomnia, heart burn, intestinal pain, liver and kidney damage, colitis, dermatitis, poor memory and difficulty in concentration.

The vapours may cause smarting of the eyes and respiratory tract.

Inhalation of material may aggravate asthma and inflammatory or fibrotic pulmonary diseases.

This chemical has not been adequately evaluated to determine whether brain or other nerve damage could occur with repeated exposure.

However, many solvents and other petroleum based chemicals have been shown to cause such damage.

Effects may include reduced memory and concentration, personality changes (withdrawal, irritability), fatigue, sleep disturbances, reduced coordination, and/or effects on nerves supplying internal organs (autonomic nerves) and/or nerves to the arms and legs (weakness, "pins and needles").

MIXED EXPOSURES

Because smoking can cause heart disease, as well as lung cancer, emphysema, and other respiratory problems, it may worsen respiratory conditions caused by chemical exposure.

Even if you have smoked for a long time, stopping now will reduce your risk of developing health problems.

Because more than light alcohol consumption can cause liver damage, drinking alcohol can increase the liver damage caused by this product.



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3. COMPOSITION

| <u>CHEMICAL ENTITY</u> | <u>CAS No.</u> | <u>ANNEX I INDEX No.</u> | <u>EINECS No.</u> | <u>Symbol</u> | <u>R-Phrase</u> | <u>PROPORTION (% w/w)</u> |
|---|----------------|--------------------------|-------------------|---------------|-----------------|---------------------------|
| Methyl Ethyl Ketone | 78-93-3 | 606-002-00-3 | 201-159-0 | Xi | R36 | > 60 |
| Petroleum Hydrocarbons Mixture (Aromatic) | 8042-47-5 | - | - | - | - | 10 - 30 |
| (Medium Aliphatic Petroleum Solvent | 64742-88-7 | 649-405-00-X | 265-191-7 | Xn | R65 | 85) |
| (Solvent naphtha (Petroleum) Light Aromatic | 64742-95-6 | 649-356-00-4 | 265-199-0 | F,Xn | R11, R20 | 15) |
| | | | | | TOTAL | 100.0 |

All components are registered in accordance with Australian Inventory of Chemical Substances.

More detailed information available to medical staff in case of an emergency.

4. FIRST AID MEASURES

Poison Information Centres in each State capital city can provide additional assistance for scheduled poisons.

SWALLOWED

Harmful if swallowed.

If the victim is conscious and not convulsing, rinse mouth out with plenty of water and give 1 or 2 glasses of water to drink to dilute the chemical and **IMMEDIATELY** call a doctor or hospital or Poisons Information Centre.

Do **NOT** give anything by mouth to an unconscious person.

If swallowed, do **NOT** induce vomiting due to the hazard of solvent aspiration into the lungs which may cause mild to severe pulmonary injury and possibly death.

Tends to break into a foam if the patient vomits.

Should vomiting occur, place patient's head downwards, head lower than hips, to prevent vomit entering the lungs.

This is especially important as aspiration of this material into the lungs can cause chemical pneumonia, which can be fatal.

If the victim is convulsing or unconscious, do not give anything by mouth, ensure that the victim's airway is open and lay the victim on his/her side with the head lower than the body.

Call a doctor and/or transport to an emergency facility or hospital **IMMEDIATELY**.

EYE

First check the victim for contact lenses and remove if present.

Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.

IMMEDIATELY and continuously irrigate with copious quantities of fresh, low pressure water or normal saline solution for at least 15 minutes while simultaneously calling a hospital or Poisons Information Centre.

Eyelids should be held open.

Ensure irrigation under the eyelids by occasionally lifting upper and lower lids.

Remove any contaminated clothing and gently flush area with water until irritation subsides.

Do **NOT** put any ointments, oils, or medication in the victim's eyes without specific instructions from a physician.

IMMEDIATELY after flushing eyes transport the victim to a hospital even if no symptoms (such as redness or irritation) develop.

SKIN

IMMEDIATELY soak contaminated clothing, including footwear, with water and then remove.

Gently wash the affected areas thoroughly with water, then mild soap and water.

If exposure has been prolonged or severe or if swelling, redness or irritation occur **IMMEDIATELY** seek medical advice and be prepared to transport the victim to a hospital for treatment.

Launder contaminated clothing before re-use.

Allow contaminated footwear to dry thoroughly before re-using.

Discard internally contaminated gloves and footwear.

Can be absorbed through the skin with resultant toxic effects.

INHALED

If fumes or combustion products are inhaled -

Provide proper respiratory protection to rescuers entering an unknown atmosphere.

Whenever possible, Self-Contained Breathing Apparatus (SCBA) should be used.

If not available, use a level of protection greater than or equal to that advised under Respirator Recommendation.

IMMEDIATELY remove affected person(s) to fresh air, taking care not to become affected yourself.

Remove any contaminated clothing and loosen remaining clothing.

If breathing is normal, allow the patient to assume the most comfortable position and keep warm.

Keep at rest until fully recovered.

If rapid recovery does not occur, or if symptoms (such as wheezing, coughing, shortness of breath, or burning in the mouth, throat, or chest) develop, call a physician and be prepared to transport the victim to a hospital.

If breathing is difficult and patient is cyanotic (blue), ensure airways are clear and have a qualified person give oxygen through a face mask.

If breathing has stopped, commence Expired Air Resuscitation (E.A.R.).

In the event of cardiac arrest, commence Cardio-Pulmonary Resuscitation (C.P.R.).

Seek **IMMEDIATE** medical attention or transport to hospital, or doctor, without delay.

4. FIRST AID MEASURES - continued**ADVICE TO DOCTOR**

Treat symptomatically.

Principal routes of exposure are skin contact/absorption and inhalation of the vapor/spray mist.

Onset of symptoms may be delayed several hours after exposure.

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

Extreme care must be taken to prevent aspiration.

Pulmonary oedema is a possible complication following aspiration.

Gastric lavage with a cuffed endotracheal tube to prevent further aspiration should be done.

In the absence of depression or convulsions, or impaired gag-reflex, ipectic emesis can also be done without increasing the hazard of aspiration.

When vomiting occurs, hold patient with head below the hips to prevent pulmonary aspiration.

Methyl Ethyl Ketone in combination with Methyl Butyl Ketone and possibly other solvents can damage the nervous system.

MEDICAL TESTING

For those with frequent or potentially high exposure (half the TLV or greater, or significant skin contact), the following are recommended before beginning work and at regular times after that:

- * Liver and kidney function tests, and evaluation for renal tubular acidosis.
- * Hearing test (audiogram) and test for balance.
- * Exam of the nervous system.
- * Complete blood count.

If symptoms develop or overexposure is suspected, the following may be useful:

Any evaluation should include a careful history of past and present symptoms with an exam.

Medical tests that look for damage already done are not a substitute for controlling exposure.

Request copies of your medical testing. You have a legal right to this information.

A comprehensive physical examination with emphasis given to haematological and pulmonary systems, mucous membranes, skin and eyes.

Comprehensive medical, work and reproductive histories with special emphasis directed to the haematological system and symptoms related to pulmonary and mucous membrane irritation.

Interview for brain effects, including recent memory, mood (irritability, withdrawal), concentration, headaches, malaise and altered sleep patterns.

Consider cerebellar, autonomic and peripheral nervous system evaluation.

Positive and borderline individuals should be referred for neuropsychological testing.

In addition, the physician should determine the worker's suitability for respirator use.

Workers or job applicants who have medical conditions that would be aggravated by the use of a respirator need to receive counselling on the increased risk of impairment of their health.

In certain cases, to provide sound medical advice to the employer and the employee, the physician must evaluate situations not directly related to this product.

For example, employees with skin diseases may be unable to tolerate wearing protective clothing.

In addition, those with chronic respiratory diseases may not tolerate the wearing of respirators.

Additional tests and procedures that will help the physician determine which employees are medically unable to wear respirators must include a pulmonary function test with measurement of the employee's forced vital capacity (FVC), and forced expiratory volume at one second (FEV1).

Ratios of FEV1 to FVC as well as measured FVC and measured FEV1 to their expected values corrected for variations due to age, sex, race, and height must be calculated. Whether a chest X-ray will provide useful information should be considered.

Any evaluation should include a careful history of past and present symptoms with an exam.

5. FIRE FIGHTING MEASURES**FOR LARGE SPILLS AND FIRES IMMEDIATELY CALL YOUR FIRE DEPARTMENT.****FIRE AND EXPLOSION HAZARD**

Material is stable under normal conditions of use.

Severe fire and explosion hazard when exposed to heat, flame and/or oxidisers.

Liquid and vapour are highly flammable.

Leaks of gas or spills of liquid can readily form flammable/explosive mixtures at temperatures at or above flash point when exposed to flame or spark.

Burns very rapidly and explosively.

Do not store or mix with caustics, amines, alkanolamines, aldehydes, strong oxidants (such as chlorine, bromine and fluorine) and chlorinated compounds since violent reactions occur and may cause fire.

Vapour/leaks of gas or spills of liquid form readily flammable/explosive mixtures at temperatures at or above flash point.

Vapor/air mixtures may ignite explosively when exposed to flame or spark and flashback along the vapor trail may occur.

Product can accumulate static charges which can cause an incendiary electrical discharge.

Heating may cause expansion or decomposition leading to violent rupture of containers.

Decomposes on heating and produces toxic fumes of carbon monoxide (CO), carbon dioxide (CO₂).

FIRE FIGHTING PROCEDURES

Stop liquid at the source if safe to do so.

Try to cover liquid spills with foam.

Shut off any leak if safe to do so and remove sources of re-ignition.

Water spray may be used to flush spills away from exposures.

If safe to do so, remove containers from the path of the fire and keep cool with water spray.

Keep storage tanks, pipelines, fire exposed surfaces etc. cool with water spray.

If a leak or spill has not ignited, use water spray to disperse the vapours and to protect personnel attempting to stop leak.

Product can accumulate static charges which can cause an incendiary electrical discharge.

Leaks of gas or spills of liquid form flammable mixtures or can burn only upon heating or at temperatures at or above flash point.

Vapor/air mixtures may ignite explosively and flashback a considerable distance along the vapor trail to source of ignition.

In the case of incomplete combustion may form toxic materials such as carbon monoxide (CO), carbon dioxide (CO₂), various hydrocarbons, fumes and smoke. Minimize breathing gases, vapour, fumes or decomposition products.

Firefighters must work from the windward side.

Firefighters to wear self-contained breathing apparatus with a full face piece and operated in positive pressure mode and protective clothing if risk of exposure to vapour or products of combustion.

Persons who have inhaled combustion gases should lie down and keep still.

Call doctor **IMMEDIATELY**.

This material may produce a floating fire hazard.

Prevent run off from fire control or dilution from entering waterways, sewers or drinking water supply.

After clean up operations, decontaminate and launder all protective clothing and equipment before storing and re-using.

FIRE FIGHTING MEDIA

For small fires use water spray or fog in large quantities, foam, dry agent (carbon dioxide, dry chemical powder), sand or earth.

For large fires either allow fire to burn under controlled conditions or extinguish with alcohol stable foam (by manufacturer's recommended techniques), carbon dioxide (CO₂), dry chemical, or water fog.

Water spray may be ineffective, but should be used to keep fire-exposed containers cool.

If a leak or spill has not ignited, use water spray to disperse the vapours and to protect men attempting to stop leak.

Fire-men have to wear full protective clothing and self-contained breathing apparatus.

FIRE FIGHTING HAZARDS

Do **NOT** use water in a jet.

Avoid spraying water directly into storage containers due to danger of boilover.

Carbon monoxide may be evolved if incomplete combustion occurs.

Will float and can be re-ignited on surface water.

The vapour is heavier than air, spreads along the ground and distant ignition is possible.

6. ACCIDENTAL RELEASE MEASURES**FOR LARGE SPILLS AND FIRES IMMEDIATELY CALL YOUR FIRE DEPARTMENT.**

There should a written emergency plan developed for each workplace or work operation.

Clean up spills immediately.

Do not empty into drains.

Keep unauthorized persons away at a safe distance and move upwind until clean up is complete.

Consider evacuation.

Shut off all possible sources of ignition ensure adequate ventilation / exhaust ventilation.

Stop liquid at the source if safe to do so.

No smoking, naked lights or ignition sources.

Increase ventilation.

Ventilate confined spaces.

Open all windows and doors.

May be violently or explosively reactive.

Use only spark-free and/or explosion proof equipment.

Water spray or fog may be used to disperse /absorb vapour.

Water spray may be used to flush spills away from exposures.

Keep solvents out of a confined space, such as a sewer, because of the possibility of an explosion, unless the sewer is designed to prevent the build up of explosive concentrations.

Avoid breathing vapours and contact with skin and eyes.

Control personal contact by using protective equipment.

If a leak or spill has not ignited, use water spray or fog to disperse the vapours and to protect men attempting to stop leak.

Advise authorities if product has entered or may enter sewers, watercourses or extensive land areas.

Take measures to minimize the effect on ground water.

MINOR SPILLS

Clean up spills immediately.

Small spills may be absorbed onto any absorbent material such as sand, soil or vermiculite or other absorbent material.

Collect residues and place in sealed, labelled, flammable waste container for later disposal.

Ventilate area well to evaporate remaining liquid and to dispel vapor.

MAJOR SPILLS

Consider evacuation.

Warn occupants of down wind areas of fire and explosion hazard.

Alert Fire Brigade and tell them location and nature of hazard.

Wear breathing apparatus, protective gloves and full protective clothing.

Dyke the area by any means available to prevent spreading and to prevent it entering sewers, drains or natural waterways.

Water spray may be used to flush spills away from exposures.

Water spray or fog may be used to disperse /absorb vapour.

Take measures to minimize the effect on ground water.

Advise authorities product has entered or may enter sewers, watercourses, low areas, or has contaminated soil or vegetation.

Pump (use explosion proof or hand pump) the liquid to a salvage tank for recycling or later disposal.

Dilute contained spill with water.

Absorb remaining material with suitable absorbent (sand, soil, fire retardant treated sawdust, vermiculite, diatomaceous earth & etc.).

Collect solid residues and seal in labelled, flammable waste containers for later disposal.

Ventilate area well to evaporate remaining liquid and to dispel vapor.

Clean area with detergent and water - do not allow product to enter drains, sewers or water courses - inform the local authorities or emergency services if this occurs.

Consult an expert on disposal of recovered material and ensure conformity to local disposal regulations.

Dispose of at an appropriate licensed waste disposal site or facility in accordance with current applicable laws and regulations and product characteristics at time of disposal.

7. HANDLING and STORAGE

| | | | |
|-----------------------------------|-------------|-------|--|
| STORAGE | TEMPERATURE | (° C) | : Ambient |
| TRANSPORT | TEMPERATURE | (° C) | : Ambient |
| LOADING/UNLOADING | TEMPERATURE | (° C) | : Ambient |
| STORAGE/TRANSPORT | PRESSURE | (kPa) | : Atmospheric |
| ELECTROSTATIC ACCUMULATION HAZARD | | | : Yes, use proper grounding procedure. |
| USUAL SHIPPING CONTAINERS | | | : Tanks, drums, cans. |
| MATERIALS AND COATINGS SUITABLE | | | : Carbon Steel, Stainless Steel. |
| MATERIALS AND COATINGS UNSUITABLE | | | : Natural Rubbers, Butyl Rubber, E P D M, Polystyrene, Polyethylene, Polypropylene, Polyvinyl chloride, Polyvinyl Alcohol, Polyacrylonitrile |

HANDLING AND STORAGE, GENERAL NOTES

Prior to working with this product, you should be trained on its proper handling and storage.

Observe manufacturer's storing and handling recommendations.

Explosion protection required.

Many plastics are unsuitable as storage and handling materials

Do NOT store in pits, depressions, basements or areas where vapours may be trapped.

Sources of ignition, such as smoking naked lights, heat, sparks and open flames, are prohibited where this product is used, handled, or stored in a manner that could create a potential fire or explosion hazard.

Avoid exposure to temperatures above 50 °C.

Use only non-sparking tools and equipment especially when opening and closing containers of this product

To prevent fire or explosion risk from static accumulation and discharge, effectively ground and bond product, transfer system and all process equipment, including tanks and drums.

Store in dry, upright, tightly closed, properly grounded original metal containers in an approved, bunded, flame-proof area out of direct sunlight.

Materials are stable on storage, but should be stored in a cool, dry, well ventilated place away from sources of ignition, amines, alkanolamines, aldehydes, strong oxidizing agents (liquid chlorine, concentrated oxygen, sodium hypochlorite), strong acids and alkalis, and chlorinated compounds since violent reactions may occur.

Check all containers are clearly labelled and check regularly for leaks.

Protect containers against physical damage. Handle containers with care.

Open slowly in order to control possible pressure release.

Do not open or empty containers within the storage area.

Ensure adequate ventilation (equivalent to outdoors), or exhaust ventilation in the working area to prevent build up of explosive atmosphere.

Exhaust ventilation necessary if product is sprayed.

A flammable atmosphere can be produced in storage container headspaces even when stored at a temperature below the flashpoint.

Monitor and maintain headspace gas concentrations below flammable limits.

Irritating to eyes, skin and mucous membranes. Harmful in contact with or absorbed through the skin.

Avoid prolonged, repeated contact with eyes, skin contact and breathing vapours or mists.

Intense smelling.

Keep away from, food, drink, animal feeding stuffs clothing and odor sensitive materials.

The product may be narcotic in high concentrations.

Refer to AS 1940 - Storage and handling of flammable and combustible liquids and AS 2865 - Safe working in a confined space, for more specific information on these subjects.

Do NOT pressurise, cut, heat, or weld containers. Empty product containers may contain product residue.

Do NOT reuse empty containers without commercial cleaning or reconditioning.

PROCESS HAZARD

Sudden release of hot organic chemical vapors or mists from process equipment operating at elevated temperatures and pressure, or sudden ingress of air into vacuum equipment, may result in ignitions without the presence of obvious ignition sources.

Published "autoignition" or "ignition" temperature values cannot be treated as safe operating temperatures in chemical processes without analysis of the actual process conditions.

Any use of this product in elevated temperature processes should be thoroughly evaluated to establish and maintain safe operating conditions.

Further information is available in a technical bulletin entitled "Ignition Hazards of Organic Chemical Vapors".

8. EXPOSURE CONTROLS**ENGINEERING CONTROLS**

None required when handling small quantities.

OTHERWISE :

Unless a less toxic chemical can be substituted for a hazardous substance, ENGINEERING CONTROLS are the most effective way of reducing exposure.

The best protection is to enclose operations and/or provide local exhaust ventilation at the site of chemical release.

Isolating operations can also reduce exposure.

Respirators serve as supplemental protection to reduce employee exposures when engineering and work practice controls are not sufficient to achieve the necessary reduction to or below the TWAs.

Keep containers closed when not in use.

Equipment **MUST** be explosion proof.

Use away from all ignition sources.

Ensure sufficient ventilation to maintain concentration below exposure standard in warehouse or closed storage areas.

Where rapid build up of vapors or mists are generated, particularly in enclosed areas, and natural ventilation is inadequate, a flame proof exhaust ventilation system is required.

Refer to AS 1940 - The storage and handling of flammable and combustible liquids and AS 2430 - Explosive gas atmospheres for further information concerning ventilation requirements.

Use with local exhaust ventilation or while wearing organic vapor /acid mist respirator (meeting the requirements of AS1715 & AS1716) or dust respirator/air supplied mask.

The effectiveness of an air purifying respirator is limited. Use it only for a single, short term exposure.

NOTE : Vapor is heavier than air and may collect in hollows, pits storage tanks or sumps.

Do **NOT** enter confined spaces where vapor may have collected without using an approved, positive pressure, self-contained breathing apparatus (meeting the requirements of AS1715 and AS1716) and an observer present for assistance.

LOCAL EXHAUST : Face velocity > 20 m/min.

FLAMMABILITY

Highly flammable liquid.

Can readily form flammable mixture with air.

May form explosive mixtures with air.

Avoid direct sources of heat, naked lights, sparks, all ignition sources and oxidising materials.

Prevent build up of flammable vapors.

Vapour may travel a considerable distance to source of ignition and flash back.

Explosion proof equipment necessary in areas where this product is being used.

Earth and bond all process equipment, including tanks, hoses and drums to avoid static charge build up.

Nearby equipment should be earthed.

Ensure ventilation is adequate to prevent build up of explosive atmosphere.

Refer to AS 1940 - Storage and handling of flammable and combustible liquids and AS 2865 - Safe working in a confined space, for more specific information on these subjects.

8. EXPOSURE CONTROLS - continued**EXPOSURE LIMITS**

This Fact Sheet is a summary source of information of all potential and most severe health hazards that may result from exposure. Duration of exposure, concentration of the substance and other factors will affect your susceptibility to any of the potential effects described below.

Exposure to hazardous substances should be routinely evaluated. This may include collecting personal and air samples. You have a legal right to obtain copies of sampling results from your employer.

If you think you are experiencing any work related health problems, see a doctor trained to recognize occupational diseases. Take this MSDS with you.

The following exposure limits are guides to be used in the control of occupational health hazards and are for air levels only. When skin contact also occurs, you may be overexposed, even though air levels are less than the limits listed above. 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. All contact with this chemical should be reduced to the lowest possible level. Follow applicable regulations. (refer WORKSAFE Australia Exposure Standards)

Threshold Limit Value (TLV) as recommended for this material by the National Occupational Health & Safety Commission (N.H.M.R.C.) (Worksafe Australia [1991]) is: -

| | |
|--|------------------------------------|
| PETROLEUM HYDROCARBONS MIXTURE AROMATIC | (CAS 8042-47-5) |
| TLV TWA | : 100 ppm (525 mg/m ³) |
| ES TWA | : 790 ppm (Under review) |

Exposure at or below the recommended TLV-TWA is thought to prevent transient headache and irritation.

METHYL ETHYL KETONE

| | |
|---|--|
| TLV-TWA | : 150 ppm (445 mg/m ³) maximum |
| STEL | : 330 ppm (890 mg/m ³) |
| NIOSH Recommended airborne exposure limit | : 200 ppm averaged over a 10-hour workshift. |
| ACGIH Recommended airborne exposure limit | : 200 ppm averaged over an 8-hour workshift |
| STEL | : 300 ppm |
| IDLH | : 3,000 ppm |
| Odour Threshold Value | : 2 ppm (approximate) |

The odor threshold only serves as a warning of exposure. Not smelling it does not mean you are not being exposed.

Methyl Ethyl Ketone may be a teratogen in humans.

All contact with this chemical should be reduced to the lowest possible level.

NOTE

These TLV's are issued as guidelines only and should not be interpreted as the fine line between safe and dangerous conditions. The above exposure limits are for air levels only.

When skin contact also occurs, you may be overexposed, even though air levels are less than the limits listed above.

Follow applicable regulations. (refer WORKSAFE Australia Exposure Standards)

All atmospheric contamination should be kept to as low a level as is practically possible.

HOW TO DETERMINE IF YOU ARE BEING EXPOSED

Exposure to hazardous substances should be routinely evaluated. This may include collecting personal and air samples.

You have a legal right to obtain copies of sampling results from your employer.

If you think you are experiencing any work related health problems, see a doctor trained to recognize occupational diseases.

Take this MSDS with you.



8. EXPOSURE CONTROLS - continued

EXPOSURE LIMITS

TLV-TWA is the time weighted average airborne concentration of the workplace atmosphere for a normal 8 hour work day and a 40 hour work week, to which nearly all workers may be repeatedly exposed day after day without adverse effect.

These TLV's are issued as guidelines only and should not be interpreted as the fine dividing line between safe and dangerous concentrations of chemicals and/or conditions.

They are not a measure of relative toxicity.

All atmospheric contamination should be kept to as low a level as is practically possible.

STEL's are expressed as airborne concentrations of substances, averaged over a period of 15 minutes.

This short term TWA concentration should not be exceeded at any time during a normal 8 hour working day.

Workers should not be exposed at the STEL concentration continuously for longer than 15 minutes, or for more than four such periods per working day.

A minimum of 60 minutes should be allowed between successive exposures at the STEL concentration.

STEL is the concentration to which workers can be exposed continuously for a short period of time without suffering from :

- irritation
- chronic or irreversible tissue damage, or
- narcosis of a sufficient degree to increase the likelihood of accidental injury, impair self-rescue or materially reduce work efficiency, and provided that the daily TLV-TWA is not exceeded.

PEAK LIMITATION - a ceiling concentration which should not be exceeded over a measurement period which should be as short as possible but not exceeding 15 minutes.

IDLH - Immediate Danger to Life and Health.

Sk NOTICE - absorption through the skin, mucous membranes and eye may be a significant source of exposure.

The exposure standard is invalidated if such contact should occur.

Exposure limits with "skin" notation indicate that vapor and liquid may be absorbed through intact skin.

Absorption by skin may readily exceed vapor 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.

ODOR THRESHOLD

When considering the odor threshold of a substance, one finds that reported values are widely divergent.

Two major factors which influence odor detection are differences between individuals in the ability to perceive a particular odor and the methodology employed in conducting the odor threshold determination.

In their "Guide to Industrial Respiratory Protection - Appendix C" , NIOSH states:

Amoore and Hautala (33) found that on average, 95% of a population will have a personal odor threshold that lies within the range from about one-sixteenth to sixteen times the reported mean "odor threshold" for a substance.

In further explanation, Amoore and Hautala state:

The ability of members of the population to detect a given odor is strongly influenced by the innate variability of different persons' olfactory powers, their prior experience with that odor, and by the degree of attention they accord the matter.

8. EXPOSURE CONTROLS - continued**PERSONAL PROTECTION****WORKPLACE CONTROLS ARE BETTER THAN PERSONAL PROTECTIVE EQUIPMENT.**

However, for some jobs personal protective equipment may be appropriate.

In case of hypersensitivity of the respiratory tract and skin (e.g. asthmatics and those who suffer from chronic bronchitis and chronic skin complaint) it is inadvisable to work with the product.

Avoid contact with the skin and eyes, and avoid breathing vapors or mists.

Use adequate general or local exhaust ventilation to meet TLV requirements.

All protective clothing (suits, gloves, footwear, headgear) should be clean, available each day, and put on before work.

Contact lenses should not be worn in areas where eye contact with this product can occur.

Observe good personal hygiene.

Eye wash fountains and safety showers should be available for emergency use.

Keep away from foodstuffs, drinks and tobacco.

Keep working clothes separate.

Take off **IMMEDIATELY** all contaminated clothing.

Launder contaminated clothing and other protective equipment before storing or re-using, and discard internally contaminated gloves and footwear.

ALWAYS wash hands carefully before breaks, eating, drinking, smoking, using the toilet and at end of work.

Do **NOT** eat, smoke, or drink where this product is handled, processed, or stored, since the chemical can be swallowed.

Personal protective equipment should not be worn in lunch areas to prevent migration of this product to an area where other employees may be unknowingly exposed.

The local concentration of material, quantity and conditions of use determine the type of personal protective equipment required.

For further information consult your Occupational Health and Safety Adviser.

For detailed advice on Personal Protective Equipment, refer to the following Australian Standards :-

| | |
|-------------------|---|
| HB 9 (Handbook 9) | Manual of industrial personal protection. |
| AS 1377 | Eye protectors for industrial applications. |
| AS 1715 | Selection, use and maintenance of respiratory protective devices. |
| AS 1716 | Respiratory protective devices. |

When exposure is likely, personal protective equipment in combination appropriate to the degree and nature of exposure, should be selected from the following lists :-

SKIN

Skin contact should be avoided by wearing chemically resistant apron or other work clothing, safety boots and chemical protective gloves if needed to avoid repeated or prolonged skin contact.

Safety equipment suppliers/manufacturers can provide recommendations on the most protective glove/clothing for your operation.

All protective clothing (suits, gloves, footwear, headgear) should be clean, available each day, and put on before work.

Do **NOT** use solvent to clean the skin but use skin cleansing cream.

If contamination occurs, immediately remove all contaminated clothing, wash or shower to remove the chemical and change into clean clothing.

Clothing wet with product should be soaked with water before removal to prevent the possibility of ignition by static electricity discharges.

At the end of the workshift, wash any areas of the body that may have contacted this product, whether or not known skin contact has occurred.

Launder contaminated clothing and other protective equipment before storing or re-using, and discard internally contaminated gloves and footwear.

Contaminated work clothes should be laundered by individuals who have been informed of the hazards of exposure to this product.

8. EXPOSURE CONTROLS - continued**PERSONAL PROTECTION - continued****EYES**

Eyes should be protected by chemical splash goggles, safety glasses fitted with side shields or full face shield.

Contact lenses should NOT be worn; soft lenses may absorb irritants and all lenses concentrate irritants.

If vapor causes eye irritation or if an inhalation risk exists a full-face, organic vapor respirator (meeting the requirements of AS1715 & AS1716) should be used.

Eye wash fountains (capable of maintaining an appropriate water pressure for an appropriate length of time to remove the product from the eyes) and safety showers should be available for emergency use.

RESPIRATORY

Avoid breathing vapors.

Enclose operations and use local exhaust ventilation.

Use general or local exhaust ventilation to meet TLV requirements.

If local exhaust ventilation or enclosure is not used, respirators should be worn.

Respiratory protection required if airborne concentration exceeds TLV.

Respiratory protection required in insufficiently ventilated working areas and during spraying.

IMPROPER USE OF RESPIRATORS IS DANGEROUS.

At concentrations up to 100 ppm, a chemical cartridge respirator with organic vapor/acid mist cartridge is recommended.

Above this level, a self-contained breathing apparatus (meeting the requirements of AS1715 and AS1716) with a full facepiece operated in continuous flow or other positive pressure mode is recommended.

If vapor causes eye irritation or if an inhalation risk for higher exposures exists an approved air supplied breathing apparatus (meeting the requirements of AS1715 and AS1716) operated in pressure demand or other positive pressure mode should be used.

If while wearing a filter, cartridge or canister respirator, you can smell, taste, or otherwise detect this product, or in the case of a full facepiece respirator you experience eye irritation, leave the area immediately.

Check to make sure the respirator to face seal is still good. If it is, replace the filter, cartridge, or canister.

If the seal is no longer good, you may need a new respirator.

Exposure to 2,000 ppm is immediately dangerous to life and health.

If the possibility of exposures above 2,000 ppm exists, use an approved self-contained breathing apparatus (meeting the requirements of AS1715 and AS1716) with a full facepiece operated in continuous flow or other positive pressure mode.

Where the concentration of vapor or mist is unknown or expected to approach or exceed the Worksafe Exposure Standards limit, the following additional equipment is recommended : -

(1) Short elevated exposures, e.g. spillage - goggles and correct respiratory equipment should be worn.

N.B.

if the vapor/mist concentration exceeds the exposure limit by more than 10 times, air supplied apparatus should be used.

(2) For prolonged elevated exposures - Full face air supplied or self contained breathing apparatus should be worn.

NOTE : Make sure the correct cartridges are used for the potential air contamination.

The effectiveness of an air purifying respirator is limited.

Use it only for a single, short term exposure.

For emergency and other conditions where the exposure guide line may be greatly exceeded, use an approved, positive pressure, self-contained breathing apparatus and an observer present for assistance.

For further information consult your Occupational Health and Safety Adviser.

9. PHYSICAL and CHEMICAL PROPERTIES

| | | | |
|--------------------------|-----------------|--|--|
| APPEARANCE | | : Clear, water white flammable liquid. Mixes with many organic solvents. Floats on water. | |
| ODOR | | : Slight kerosene odor. | |
| pH VALUE | | : Not applicable | |
| VAPOR PRESSURE | (kPa @ 20°C) | : 9.987 | (Methyl Ethyl Ketone) |
| VAPOR PRESSURE | (mm Hg @ 25°C) | : 75.0 | (Methyl Ethyl Ketone) |
| VAPOR PRESSURE | (kPa @ 38°C) | : 22.346 | (Methyl Ethyl Ketone) |
| VAPOR PRESSURE | (kPa @ 55°C) | : 43. 64 | (Methyl Ethyl Ketone) |
| RELATIVE VAPOR DENSITY | | : 2.42 | (Air = 1) (Methyl Ethyl Ketone) |
| BOILING POINT | (°C) | : 78.5 - 81.0 | (Methyl Ethyl Ketone) |
| SOLUBILITY IN WATER | (% by weight) | : 26.30 @ 20 °C | (APPRECIABLE) (Methyl Ethyl Ketone) |
| SPECIFIC GRAVITY | (@ 15°C) | : 0.805 ± 0.005 g/cm ³ | (Water =1) |
| FLASH POINT | (°C) | : - 7.0 | TAG CLOSED CUP (Methyl Ethyl Ketone) |
| EXPLOSIVE LIMITS | (% volume) | : 0.47 LEL / 11.5 UEL | |
| AUTOIGNITION TEMPERATURE | (°C) | : 515.0 | (Methyl Ethyl Ketone) |
| AUTOIGNITION TEMPERATURE | (°C) | : 254 | (Aromatic Hydrocarbon) |
| VOC CONTENT | | : 805 ± 5.0 gm / Litre | |
| EVAPORATION RATE | | : 5.6 - 6.0 | (Butyl Acetate =1) (Methyl Ethyl Ketone) |
| % VOLATILES | (by volume) | : 100.0 | |
| VISCOSITY | | : Not Available | |
| CHEMICAL REACTIVITY | | : Stable. | |
| OTHER PROPERTIES | | : Can readily form flammable mixture. | |

10. STABILITY and REACTIVITY

| | |
|--|---|
| Hazardous Polymerisation | : Will not occur. |
| Hazardous reactions | : None known |
| Stability (Thermal, Light, etc.) | : Stable |
| Conditions to Avoid | : Heat, sparks, flame and build up of static electricity. |
| Incompatibility (materials to avoid for purpose of transport, handling & storage only) | : Avoid contact with strong alkalis, mineral acids, halogens, strong oxidizers (liquid chlorine, concentrated oxygen, sodium hypochlorite, peroxides, chlorates, perchlorates, nitrates, & permanganates), amines, rubber, polyethylene and PVC, and most tank linings. Hazardous. |
| Hazardous composition products | : No unusual. |
| Reactivity | : No unusual. |
| Hazardous decomposition products | : No hazardous decomposition products when stored and handled correctly. Carbon monoxide, carbon dioxide, fumes and smoke in the case of incomplete combustion. |

All components are registered in accordance with Australian Inventory of Chemical Substances(ACIS).

11. TOXICOLOGICAL INFORMATION**TOXICITY**

Evidence from animal tests is available to indicate that repeated or prolonged exposure to hydrocarbon solvents could result in liver, kidney and central nervous disorders as well as anaemia and leukopenia (lowered white cell count).

Aromatic hydrocarbons irritate the skin and mucous membranes and are narcotic if inhaled in high concentrations.

Prolonged, repeated skin contact with low viscosity materials may defat the skin resulting in possible irritation and dermatitis.

High vapor concentrations are irritating to the respiratory tract may cause nausea, vomiting, headache, dizziness anaesthetic and may have other central nervous system effects.

Do NOT induce vomiting if swallowed

AROMATIC PETROLEUM HYDROCARBONS MIXTURE (CAS 8042-47-5)

| | | | |
|-----------------|------------------|----------|--|
| Oral | LD ₅₀ | (rat) | : > 2,000 mg/kg. Practically non-toxic. Based on testing of similar products and/or the components. |
| Dermal | LD ₅₀ | (rabbit) | : > 2,000 mg/kg. Practically non-toxic. Based on testing of similar products and/or the components. |
| Inhalation | LC ₅₀ | (rat) | : Practically non- toxic. Based on testing of similar products and/or the components. |
| Skin Irritation | | (rabbit) | : May cause slight irritation on prolonged or repeated contact. |
| Eye Irritation | | (rabbit) | : May cause slight irritation. |

Based on testing of similar products and/or the components.

METHYL ETHYL KETONE

| | | | |
|-----------------------|------------------|----------------|---|
| Oral | LD ₅₀ | (rat) | : 2,737 mg/kg. Moderately toxic. |
| Oral | LD ₅₀ | (mouse) | : 3,000 mg/kg |
| Dermal | LD ₅₀ | Range (rabbit) | : 5,000 - 13,000 mg/kg. Practically non-toxic. |
| Inhalation | LC ₅₀ | (rabbit) | : 13,000 mg/kg |
| Inhalation | LC ₅₀ | (rat) | : 23,500 mg/m ³ / 8 hr |
| Inhalation | LC ₅₀ | (rat) | : > 2,000 ppm for 2 hours. Moderately toxic. |
| Inhalation | LC ₅₀ | (mouse) | : 32 gm/m ³ /4H |
| Inhalation | | (human) | : Irritating to nose and throat, will cause nausea, vomiting, headache, dizziness. |
| Skin | | (rabbit) | : 500mg/24H - May cause moderate irritation on prolonged or repeated contact. If allowed to remain, may cause smarting and reddening of the skin. Not readily absorbed. |
| Eye | | (rabbit) | : Can cause strong-moderate irritation. |
| Eye Irritation Scores | | | : 47.0 at 24 hours, 39.0 at 48 hours, 33.0 at 72 hours, 23.0 at 4 hours, 17.0 at 7 days. |
| Eye | | (human) | : Burns, causes severe damage. Eye irritation reported in humans exposed to vapour as low as 350 ppm. |
| Swallowed | | | : Harmful if swallowed, may cause gastric irritation and narcosis. |

Toxicological data suggest that methyl ethyl ketone interacts with and enhances the neurotoxicity of n-hexane, 2,5-hexanedione and methyl-n-butyl ketone in the body but direct evidence implicating methyl ethyl ketone is lacking.

This chemical has not been adequately evaluated to determine whether brain or other nerve damage could occur with repeated exposure. However, many solvents and other petroleum-based chemicals have been shown to cause such damage.

Effects may include reduced memory and concentration, personality changes (withdrawal, irritability), fatigue, sleep disturbances, reduced coordination, and/or effects on nerves supplying internal organs (autonomic nerves) and/or nerves to the arms and legs (weakness, "pins and needles").

Methyl ethyl ketone has been shown to be weakly hepatotoxic in experimental animals at very high doses.

SPECIAL PROPERTIES / EFFECTS

Over-exposure, especially during spraying operations without the necessary precautions entails the risk of concentration-dependent irritating effects on eyes, nose, throat, and respiratory tract.

Delayed appearance of the complaints and development of hyper-sensitivity (difficult breathing, coughing, asthma) are possible. Hypersensitive persons may suffer from these effects even at low concentrations.



12. ECOLOGICAL INFORMATION

Do not allow to escape into waters, waste water or soil.

This chemical is a colorless, flammable liquid with a slightly aromatic odor.

It may enter the environment from industrial or municipal waste treatment plant discharges or spills.

ACUTE (SHORT-TERM) ECOLOGICAL EFFECTS

Acute toxic effects may include the death of animals, birds, or fish, and death or low growth rate in plants.

Acute effects are seen two to four days after animals or plants come in contact with a toxic chemical substance.

This product is expected to have slight acute toxicity to aquatic life.

No data are available on the short-term effects of this product on plants, birds, or land animals.

CHRONIC (LONG-TERM) ECOLOGICAL EFFECTS

Chronic toxic effects may include shortened lifespan, reproductive problems, lower fertility, and changes in appearance or behaviour.

Chronic effects can be seen long after first exposure(s) to a toxic chemical.

This product is expected to have a slight chronic toxicity to aquatic life.

No data are available on the long-term effects of this product on plants, birds, or land animals.

DISTRIBUTION AND PERSISTENCE IN THE ENVIRONMENT

This chemical is slightly persistent in water, with a half-life of between 2 to 20 days.

The half-life of a pollutant is the amount of time it takes for one-half of the chemical to be degraded.

About 60% of this product will eventually end up in air; the rest will end up in the water.

ABIOTIC EFFECTS

No information on abiotic effects of this product.

According to the definition provided in the Federal Register (1992), this product is a volatile organic compound (VOC) substance.

As a VOC, this product can contribute to the formation of photochemical smog in the presence of other VOCs.

BIOACCUMULATION IN AQUATIC ORGANISMS

Some substances increase in concentration, or bio-accumulate, in living organisms as they breathe contaminated air, drink contaminated water, or eat contaminated food.

These chemicals can become concentrated in the tissues and internal organs of animals and humans.

The concentration of this product found in fish tissues is expected to be slightly higher than the average concentration than the water from which the fish was taken.



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13. DISPOSAL CONSIDERATIONS

This product is NOT suitable for disposal by either landfill or via municipal sewers, drains, natural streams or rivers.

Consult an expert on disposal of any recovered material and ensure conformity to local disposal regulations.

It may be necessary to contain and dispose of this product as a HAZARDOUS WASTE.

Contact your state Environmental Program for specific recommendations.

Refer to State Land Waste Management Authority for specific recommendations. Advise of flammable/chemical nature.

Recycle product where possible.

Recycle containers where possible, or dispose of in an authorised landfill.

Do NOT reuse empty containers without commercial cleaning or reconditioning.

This product is ashless and can be burned directly in appropriate equipment by an approved agent provided local regulations are observed.

Do NOT pressurise, cut, heat, or weld containers.

Empty product containers may contain product residue.

14. TRANSPORT INFORMATION

Classified as a Dangerous Good (Class 3) (FLAMMABLE LIQUID) Dangerous Substance for the purpose of transport.
Refer to relevant regulations for storage and transport requirements.

| | | | |
|---|---|--------------------------------|----------------|
| PROPER SHIPPING NAME | : Paint Related Material, Thinners, LFP | PACKAGING GROUP | : II |
| UN NUMBER | : 1263 | SUBSIDIARY RISK | : NOT ASSIGNED |
| HAZCHEM CODE | : •3YE | EPG | : 3A1 |
| POISONS | : S5 | AS 1940 Class | : PG II |
| CLASS | : 3 (Flammable Liquid) | ADG CLASS | : 3 |
| IMO HAZARD CLASS | : INFLAMMABLE LIQUID/3.3 | | |
| ICAO / IATA CLASS | : 3 | | |
| PASSENGER PACKING INSTRUCTION | : 3 | PASSENGER MAX. QUANTITY / PACK | : 5L / 1L |
| CARGO MAX. QUANTITY | : 60L | | |
| STORAGE TEMPERATURE (°C): Ambient | | TRANSPORT TEMPERATURE (°C) | : Ambient |
| LOADING / UNLOADING TEMPERATURE(°C) | : Ambient | | |
| STORAGE / TRANSPORTATION PRESSURE (kPa) | : Atmospheric | | |
| ELECTROSTATIC ACCUMULATION HAZARD ? | : Yes, use proper grounding procedure. | | |
| USUAL SHIPPING CONTAINERS | : Closed head drums, pails, cans. | | |
| MATERIALS AND COATINGS SUITABLE | : Carbon Steel / Stainless Steel | | |
| MATERIALS AND COATINGS UNSUITABLE | : Natural Rubber / Butyl Rubber / E P D M / Polystyrene / Polyethylene / Polypropylene / Polyvinyl chloride / Polyvinyl alcohol / Polyacrylonitrile | | |

Class 3 flammable liquids shall NOT be loaded in the same vehicle or packed in the same freight containers with :-

- Class 1 Explosives
- Class 2.1 Flammable gases (when both in bulk)
- Class 2.3 Poisonous gases
- Class 4.2 Spontaneously combustible substances
- Class 5.1 Oxidizing agents
- Class 5.2 Organic peroxides
- Class 7 Radioactive substances
- Halogens (chlorinated compounds & etc.)
- Foodstuffs and foodstuff empties.

Refer to Australian Code for the Transport of Dangerous Goods By Road and Rail (7th Edition) for transport regulations and state Dangerous Goods regulations for storage requirements.

This material is a Scheduled Poison (S5) and must be stored, maintained and used in accordance with the relevant regulations.

15. REGULATORY INFORMATION

Leaks of gas or spills of liquid can readily form flammable mixtures at temperatures at or above flash point.

Hazardous according to criteria of NOHSC

Classified as dangerous goods according to the criteria of the ADG

CLASSIFICATION AND LABELLING ACCORDING TO NOHSC CODES

CLASSIFICATION / SYMBOL : HIGHLY FLAMABLE / F
CLASSIFICATION / SYMBOL : HARMFUL / Xn - IRRITANT / Xi
CLASSIFICATION : Dangerous Goods according to the Australian Dangerous Goods Code
GOVERNING DIRECTIVE : National Code of practice for the Labelling of Hazardous Substances.
LABEL NAME : Paint related material, Thinners, LFP

HAZARDS IDENTIFICATION**RISK PHRASES**

R10 Flammable.
R18 In use, may form flammable/explosive vapor-air mixture.
R20/21/22 Harmful by inhalation, in contact with skin and if swallowed.
R36/37/38 Irritating to eyes, respiratory system and skin.
R42/43 May cause sensitisation by inhalation and skin contact.

SAFETY ADVICE

S3/7/9 Keep container tightly closed in a cool, well ventilated place.
S16 Keep away from sources of ignition - No smoking.
S20/21 When using, do not eat, drink or smoke.
S23 Do not breathe gas/fumes/vapour/spray
S24/25 Avoid contact with skin and eyes.
S29 Do not empty into drains.
S33 Take precautionary measures against static discharges.
S36/37/39 Wear suitable protective clothing, gloves and eye/face protection.
S43B In case of fire use sand, earth, chemical powder or alcohol type foam
S51 Use only in well ventilated areas.

POISONS SCHEDULE : S5 according to SUSDP



16. OTHER INFORMATION

DATE OF CREATION / LAST REVISION : 27/06/12

PRINCIPAL REFERENCES

Supplier's Material Safety Data Sheet

In "Registry of Toxic Effects of Chemical Substances 1995" (Ed. D. Sweet),
(US Dept. of Health & Human Services: Cincinnati 1995)

ACRONYMS:

ADG Code : Australian Code for the Transport of Dangerous Goods by Road and Rail, 7th Edition
AICS : Australian Inventory of Chemical Substances
SWA : Safe Work Australia, formerly SWA and SWA
CAS Number : Chemical Abstracts Service Registry Number
Hazchem Code : Emergency action code of numbers and letters that provide information to emergency services especially firefighters
IARC : International Agency for Research on Cancer
NOS : Not otherwise specified
NTP : National Toxicology Program (USA)
R-Phrase : Risk Phrase
SUSDP : Standard for the Uniform Scheduling of Drugs & Poisons
UN Number : United Nations Number

Please read all labels carefully before using product.

Released by :