



Date of Issue : 01/11/07

**Emergency Telephone No. +612 9634-5560**  
**MATERIAL SAFETY DATA SHEET**  
**UV230 WHITE UV CURE UNDERCOAT**

Page 1 of 17  
Ref msds 00207

**1. IDENTIFICATION**

PRODUCT NAME : UV230 WHITE UV CURE UNDERCOAT  
OTHER NAMES : Not Applicable  
PRODUCT CODE : UV230  
AVAILABLE COLORS : White  
U.N. NUMBER : 1263  
DANGEROUS GOODS CLASS : 3.1 (Highly flammable liquid)  
SUBSIDIARY RISK : None  
PACKAGING GROUP : III  
HAZCHEM CODE : 3[Y]E  
POISONS SCHEDULE : S5  
EPG : 3C1  
USE : High build UV cure undercoat for use on absorbent timber surfaces.

For industrial use only in spray areas complying with relevant regulations.

**COMPANY / UNDERTAKING**

BC COATINGS  
2 Hume Road, Smithfield, N.S.W., 2164  
PHONE +612 9729-2000, FAX +612 9729-2279  
Emergency Telephone No. +612 9634-5560

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 source of information of all potential and 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 three 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 B.C. 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 B.C. Coatings .

B.C. 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 B.C. 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. COMPOSITION**

<b>CHEMICAL ENTITY</b>	<b>CAS No.</b>	<b>PROPORTION ( % w/w )</b>
Synthetic polymers (proprietary blend)	N/A	10 - 30
Petroleum Hydrocarbons (proprietary blend)	N/A	< 10
Styrene Monomer	100-42-5	10 - 30
(may contain 4-Tert-Butyl Catechol as stabilizer)	98-29-3	< 1
Acetone	67-64-1	< 10
Methyl Ethyl Ketone	78-93-3	< 10
Inert Fillers / Extenders / Pigments	N/A	30 - 60
Miscellaneous Additives	N/A	< 10

All components are registered in accordance with Australian Inventory of Chemical Substances.  
More detailed information available to medical staff in case of an emergency.

**3. 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 Worksafe Australia**

**CLASSIFICATION AND LABELLING ACCORDING TO NOHSC CODES**

CLASSIFICATION / SYMBOL : HIGHLY FLAMMABLE / F

CLASSIFICATION / SYMBOL : HARMFUL / Xn

GOVERNING DIRECTIVE : National Code of practice for the Labelling of Hazardous Substances.

LABEL NAME : Paint Related Material

**HAZARDS IDENTIFICATION**

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

**RISK PHRASES**

R11	Highly flammable.
R20/2122	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**

S7/9	Keep container tightly closed and in a 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
S25	Avoid contact with 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.

**3. HAZARDS IDENTIFICATION (continued)****HEALTH EFFECTS - ACUTE EXPOSURE**

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

The liquid is highly irritating and may be harmful if swallowed.

Tends to break into a foam if the patient vomits.

Ingestion can result in nausea, cramps, 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 or pulmonary oedema may cause potentially lethal chemical pneumonitis..

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

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

**EYE**

The vapor and the liquid are both highly irritating to the eyes.

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

**SKIN**

Contact with the skin may result in severe irritation and drying of the skin which may lead to dermatitis if contact is prolonged.

Material is capable of being absorbed by the skin. Toxic effects may result from skin absorption.

Capable of causing skin sensitisation and allergic skin reactions.

Open cuts, abraded or irritated skin should not be exposed to this material.

The material may accentuate any pre-existing skin condition.

**INHALED**

Vapor/mist concentrations above recommended exposure levels may be extremely irritating to mucous membranes, eyes, respiratory tract, and lungs and may cause headaches and dizziness, could be anaesthetic and may have other central nervous system effects.

Inhalation hazard is increased at higher temperatures. Toxic effects are increased by consumption of alcohol.

Repeated exposure may cause sensitisation and/or allergic reactions.

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

**HEALTH EFFECTS - CHRONIC EXPOSURE**

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

Chronic (long term) health effects can occur at some time after exposure to liquid hydrocarbons and can last for months or years:

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]

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

Capable of causing skin sensitisation and allergic skin reactions.

**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 liquid hydrocarbons.

**4. FIRST AID MEASURES**

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

**SWALLOWED**

Harmful if swallowed.

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.

Give milk or water to rinse out mouth and to drink to dilute the material

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

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.

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

**EYE**

Immediately and continuously irrigate with copious quantities of low pressure, fresh water for at least 15 minutes.

Eyelids should be held open.

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

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

Seek **IMMEDIATE** medical attention.

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

**SKIN**

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 seek medical advice.

Launder contaminated clothing before re-use.

Thoroughly dry contaminated shoes before re-use.

Discard internally contaminated gloves and shoes.

**INHALED** : If fumes or combustion products are inhaled :

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 breathing is difficult and/or 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.

**Poison Information Centres in each capital city can provide additional assistance for Scheduled Poisons.**

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

Treat symptomatically based on judgment of doctor and individual reactions of patient.

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

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

Skin sensitisation may result from a single acute exposure.

Sensitisation may cause difficulty in breathing similar to asthma.

Onset of symptoms may be delayed several hours after exposure.

Extreme care must be taken to prevent aspiration.

Material if aspirated into lungs may cause chemical pneumonitis.

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, ipetic 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.

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

HAZARDOUS - Liquid and vapour are highly flammable.

Fire hazard when exposed to heat, flame and/or oxidisers.

Polymerizes with evolution of heat at elevated temperatures.

Do not store or mix with strong oxidants since violent reactions occur.

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

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

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

In the case of incomplete combustion may form toxic materials such as carbon monoxide (CO), carbon dioxide (CO<sub>2</sub>), various hydrocarbons, acrid fumes and smoke.

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

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

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

Minimize breathing gases, vapour, fumes or decomposition products.

Firefighters should wear self-contained breathing apparatus with a full face piece and operated in positive pressure mode.

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

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

This product may form a floating fire hazard on water.

**FIRE FIGHTING MEDIA :**

Either allow fire to burn under controlled conditions or extinguish with alcohol stable foam, carbon dioxide (CO<sub>2</sub>), or dry chemical.

Try to cover liquid spills with foam.

Water spray may be ineffective, but should be used in case of larger fires, water spray be used to keep fire exposed containers cooled. Avoid spraying water directly into storage containers due to danger of boilover.

In case of fire, formation of carbon monoxide is possible.

Fire-men have to wear self-contained breathing apparatus.

**UV230 WHITE UV CURE UNDERCOAT- PART "A"****6. ACCIDENTAL RELEASE MEASURES****SPILLS AND DISPOSAL****FOR LARGE SPILLS AND FIRES immediately call your fire department.**

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

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.

May be violently or explosively reactive.

Keep hydrocarbon 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.

Do not empty into drains.

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

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/absorb 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.

**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.

**MAJOR SPILLS**

Consider evacuation.

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

Avoid breathing vapors and contact with skin and eyes. Wear breathing apparatus, protective gloves and full protective clothing.

Dyke the area with sand, earth or vermiculite, to prevent spreading and to prevent it entering sewers, drains or natural waterways.

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

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

Pump the liquid to a labelled salvage tank for recycling or later disposal.

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.

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

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

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.

**7. HANDLING and STORAGE****HANDLING AND STORAGE**

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

Observe manufacturer's storing and handling recommendations.

Store in original containers in a cool, dry, well-ventilated, approved flammable liquid storage area away from direct sunlight.

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

Sources of ignition, such as smoking, open flames, or ignition sources 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.

Keep container dry and tightly closed when not in use. Handle containers with care.

Open slowly in order to control possible pressure release.

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

Materials are stable on storage, but should be stored in a cool and well ventilated place away from sources of ignition, strong oxidizing agents (liquid chlorine, bromine, fluorine, concentrated oxygen, sodium hypochlorite, peroxides), acids, alkalis and odor sensitive materials.

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.

To prevent fire or explosion risk from static accumulation and discharge, effectively ground all equipment.

Irritating to eyes, skin and mucous membranes.

Harmful in contact with or absorbed through the skin.

Avoid contact with skin and eyes.

Use non-sparking tools and equipment especially when opening and closing containers.

Intense smelling. Keep away from foodstuffs and clothing.

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

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.

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.

**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 :**

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

No value has been assigned for this specific material by the N.H.M.R.C.

However, the Threshold Limit Value (TLV-TWA), as published by WORKSAFE [1991], for some of the individual constituents is listed below.

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

**LIQUID PETROLEUM HYDROCARBONS**

TLV-TWA : 100 ppm, 525 mg/m<sup>3</sup>

Exposure to liquid hydrocarbons at or below the recommended TLV-TWA and STEL is thought to minimise the risk of irritant effects and to produce neither significant narcosis or chronic injury.

**ACETONE**

TLV-TWA : 750 ppm (1,780 mg/m<sup>3</sup>) maximum / STEL 1,000 ppm (2,380 mg/m<sup>3</sup>)

**NOTICE OF INTENDED CHANGE**

TLV TWA : 500 ppm, 1188 mg/m<sup>3</sup>; STEL: 750 ppm, 1782 mg/m<sup>3</sup> A4

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

Odour Threshold Level : 3.6 ppm (detection), 699 ppm (recognition)

The odor threshold only serves as a warning of exposure.

Not smelling it does not mean you are not being exposed.

**METHYL ETHYL KETONE**

TLV-TWA : 150 ppm (445 mg/m<sup>3</sup>) maximum / STEL 330 ppm (890 mg/m<sup>3</sup>)

Methyl Ethyl Ketone may be a teratogen in humans.

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

Odour Threshold Level : 2 ppm (approximate)

The odor threshold only serves as a warning of exposure.

Not smelling it does not mean you are not being exposed.

**STYRENE MONOMER**

ES-TWA : 50 ppm (215 mg/m<sup>3</sup>) / STEL 100 ppm (428 mg/m<sup>3</sup>)

TLV-TWA : 20 ppm ( 85 mg/m<sup>3</sup>) / STEL 40 ppm (170 mg/m<sup>3</sup>) A4

Odour Threshold Level : 0.1 ppm (in air)

The odor threshold only serves as a warning of exposure.

Not smelling it does not mean you are not being exposed.

Note : This substance has been classified by the ACGIH as A4 NOT classifiable as causing cancer in humans.

**4-TERT-BUTYLCATECHOL**

CEL-TWA : 5 mg/m<sup>3</sup>

Severely irritating, can cause allergic dermatitis and can depigment skin.

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

**TLV-TWA** is the time weighted average 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 line between safe and dangerous conditions.

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 30 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 250 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.

**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.

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.

Keep away from foodstuffs, drinks and tobacco. Keep working clothes separate.

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 in 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.

Ensure that there is ready access to an emergency shower.

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.

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

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.

**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.

**9. PHYSICAL and CHEMICAL PROPERTIES****PHYSICAL DESCRIPTION / PROPERTIES**

APPEARANCE	: White, thixotropic liquid. Strong hydrocarbon odor.		
BOILING POINT (°C)	: 56.2		(Acetone)
VAPOR PRESSURE (kPa @ 25°C)	: 30.0		(Acetone)
RELATIVE VAPOR DENSITY	: 3.6	(Air = 1)	(Styrene Monomer)
SPECIFIC GRAVITY (@ 25°C)	: 1.350 ± 0.010	(Water =1)	
% VOLATILES (by volume)	: 10.5 ± 0.5		
EVAPORATION RATE	: 7.7	(Butyl Acetate =1)	(Acetone)
FLASH POINT (°C)	: < 0.0	(Tag Closed Cup)	(Acetone)
FLAMMABILITY LIMITS	: 3.0 LEL / 13.0 UEL (% Volume)		(Acetone)
AUTOIGNITION TEMPERATURE	: 490.0 °C		(Styrene)
SOLUBILITY IN WATER	: Negligible		
SOLUBILITY	: Soluble in many organic solvents.		
CHEMICAL REACTIVITY	: Stable.		
OTHER PROPERTIES	: Can readily form flammable mixture.		

**10. STABILITY and REACTIVITY****REACTIVITY / COMPATIBILITY**

Hazardous polymerization : May occur at elevated temperatures.  
Polymerization may be accompanied by generation of heat as exotherm. Process is self-accelerating as heating causes more rapid polymerization.  
If polymerization takes place in a container, there is a possibility of violent rupture of container.

## Conditions to avoid Hazardous Polymerization

Avoid elevated temperatures.  
Styrene vapors are uninhibited and may form polymers on vents and flame arresters of storage tanks, resulting in blockage of vents.

## Stability

: Stable under normal conditions  
Contains a stabilizer/polymerization inhibitor system that provides workable but not indefinite shelf life.

## Conditions to Avoid

: Heat, sparks, flame and build up of static electricity.

## Incompatibility (materials to avoid for purpose of transport, handling &amp; storage only)

: Avoid contact with strong alkalis, mineral acids, halogens, strong oxidizers such as liquid chlorine, bromine, fluorine, concentrated oxygen, sodium hypochlorite, peroxides, persulphates & etc.), alkylation catalysts, copper and copper alloys.

**HAZARDOUS COMBUSTION PRODUCTS**

Fumes, smoke carbon dioxide and carbon monoxide, in the case of incomplete combustion.

**11. TOXICOLOGICAL INFORMATION****TOXICITY**

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.

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

Limits shown for guidance only.

Follow applicable regulations (refer WORKSAFE Australia Exposure Standards).

**ACETONE**

Oral	LD <sub>50</sub> (rat)	: 5,800 mg/kg
Oral	Lowest Toxic Dose (man)	: 2,857 mg/kg - Coma
Dermal	LD <sub>50</sub> (rat)	: 20,000 mg/kg
Inhalation	LC <sub>50</sub> (rat)	: 50,100 mg/m <sup>3</sup> / 8 hr
Inhalation	Lowest Toxic Concentration (man)	: 12,000 ppm / 4 hr - nausea or vomiting; muscle weakness.
Inhalation	(human)	: Irritating to nose and throat, will cause nausea, vomiting, headache, dizziness.
Eye	(rabbit)	: Moderate irritant.
Skin	(rabbit)	: Irritating to skin. If allowed to remain, may cause smarting and reddening of the skin. Not readily absorbed.
Swallowed		: Harmful if swallowed, may cause gastric irritation and narcosis.

**METHYL ETHYL KETONE**

Oral	LD <sub>50</sub> (rat)	: 2,737 mg/kg. Moderately toxic.
Dermal	LD <sub>50</sub> Range (rabbit)	: 5,000 - 13,000 mg/kg. Practically non-toxic.
Inhalation	LC <sub>50</sub> (rabbit)	: 13,000 mg/kg
Inhalation	LC <sub>50</sub> (rat)	: 23,500 mg/m <sup>3</sup> / 8 hr - > 2,000 ppm for 2 hours.
Inhalation	(human)	: Irritating to nose and throat, will cause nausea, vomiting, headache, dizziness.
Skin	(rabbit)	: 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	(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.

**11. TOXICOLOGICAL INFORMATION - continued****TOXICITY (continued)****STYRENE MONOMER**

Oral	LD <sub>50</sub>	(rat)	:	4,370 mg/kg.
Oral	LD <sub>50</sub>	(rabbit)	:	> 5,010 mg/kg.
Inhalation	LC <sub>50</sub>	(rat)	:	2,800 ppm / 4 hr.
Inhalation	LC <sub>LO</sub>	(human)	:	10,000 ppm / 30m.
Inhalation	TC <sub>LO</sub>	(human)	:	600 ppm.
Inhalation		(human)	:	Irritating to nose and throat, will cause nausea, vomiting, headache, dizziness.
Skin		(rabbit)	:	May cause moderate irritation on prolonged or repeated contact. If allowed to remain, may cause smarting and reddening of the skin.
Eye		(rabbit)	:	Can cause strong-moderate irritation.

**4-TERT-BUTYLCATECHOL**

Oral	LD <sub>50</sub>	(rat)	:	2,820 mg/kg.
Dermal	LD <sub>50</sub>	(rabbit)	:	630 mg/kg.
Eye		(rabbit)	:	Can cause severe irritation.
Skin		(rabbit)	:	Can cause severe irritation.

**AROMATIC PETROLEUM HYDROCARBONS**

Oral	LD <sub>50</sub>	(rat)	:	5,000 mg/kg
Dermal	LD <sub>50</sub>	(rabbit)	:	> 2,000 mg/kg
Inhalation	TLCO	(human)	:	100 ppm Irritant
Inhalation	Lowest Toxic Concentration	(human)	:	200 ppm (CNS recording changes, hallucinations)
Eyes		(rabbit)	:	Moderate Irritant
Skin		(rabbit)	:	Mild Irritant

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, such as those contained in this product, irritate the skin and mucous membranes and are narcotic if inhaled in high concentrations.

**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 below the TWA-limit.

**12. ECOLOGICAL INFORMATION**

This product may enter the environment from industrial discharges, municipal waste treatment plant discharges, or spills.

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

**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**.

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 re-use empty containers without commercial cleaning or reconditioning.

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.

**STORAGE AND TRANSPORT**

Classified as a Dangerous Good (Class 3) for transport purposes.

SHIPPING NAME	: Paint Related Material		
UN No	: 1263	PACKAGING GROUP	: III
CLASS	: 3 (Flammable Liquid )	AS 1940 Class	: PG III
SUBSIDIARY RISK	: NOT ASSIGNED	HAZCHEM CODE	: 3[Y]E
EPG	: 3C1		
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		: 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 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.



**14. TRANSPORT INFORMATION (continued)**

Refer to Australian Code for the Transport of Dangerous Goods By Road and Rail (6<sup>th</sup> 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.

Materials are stable on storage, but should be stored in a cool, well ventilated area away from sources of ignition, oxidizing agents and odor sensitive materials.

Keep containers tightly closed when not in use and check regularly for leaks.

Use non-sparking tools and equipment.

**15. REGULATORY INFORMATION****RISK PHRASES**

R11	Highly flammable.
R20/2122	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**

S7/9	Keep container tightly closed and in a 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
S25	Avoid contact with 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.

**16. OTHER INFORMATION****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)