



Manufacturers of UTHANE Polyurethane Coatings
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MATERIAL SAFETY DATA SHEET
PE230 / PE330 POLYESTER HARDENER

Date of Issue : 02/07/07

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Ref msds00084B

Hazardous according to criteria of Worksafe Australia

1. IDENTIFICATION

PRODUCT NAME : PE230 P.E UNDERCOAT HARDENER – PART “B”
OTHER NAMES : PE330 P.E SEALER HARDENER – PART “B”
PROPER SHIPPING NAME : ORGANIC PEROXIDE TYPE D, LIQUID - (Methyl Ethyl Ketone Peroxide 40%)
AVAILABLE COLORS : Clear
U.N. NUMBER : 3105
DANGEROUS GOODS CLASS : 5.2
SUBSIDIARY RISK : 9
PACKAGING GROUP : II
HAZCHEM CODE : 2WE
POISONS SCHEDULE : S5
EPG : 5K1
USE : Initiator for curing polyester resins/finishes.

For Industrial Use Only In 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 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.

PE230 / PE330 POLYESTER HARDENER**2. COMPOSITION**

CHEMICAL ENTITY	CAS No.	PROPORTION (%Wt)
Dimethyl Phthalate	131-11-3	40 - 100%
Methyl Ethyl Ketone Peroxide	1338-23-4	40 %
Methyl Ethyl Ketone	78-93-3	0 - 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

Hazardous according to criteria of Worksafe Australia

HAZARDS IDENTIFICATION

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

RISK STATEMENT

R10	Flammable
R34	Causes burns
R41	Risk of serious damage to eyes
R21/22	Harmful in contact with skin and if swallowed
R36/37	Irritating to eyes and respiratory system.

SAFETY STATEMENT

S3/7/9	Keep container tightly closed in a cool, well ventilated place
S16	Keep away from sources of ignition - No smoking.
S17	Keep away from combustible material
S20/21	When using, do not eat, drink or smoke.
S23	Do not breathe gas/fumes/vapour/spray
S29	Do not empty into drains.
S36/37/39	Wear suitable protective clothing, gloves and eye/face protection.
S51	Use only in well ventilated areas.

HEALTH EFFECTS - ACUTE EXPOSURE

TARGET ORGANS : Central nervous system, eyes, skin, gastro-intestinal tract, blood, liver and kidneys
ROUTES OF ENTRY : Ingestion, inhalation, skin contact, eye contact, absorption

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

SWALLOWED

Corrosive if swallowed.
May burn mouth, gullet and stomach.
If ingested (swallowed), decomposition may occur in the stomach leading to the production of oxygen gas.
This may cause distension of the stomach.
Ingestion may cause toxic myocarditis.

EYE

Corrosive.
May cause damage to the cornea which may affect vision if immediate first aid action not taken.
Vapor may cause irritation.



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PE230 / PE330 POLYESTER HARDENER

3. HAZARDS IDENTIFICATION – continued

SKIN

Corrosive.

May cause delayed chemical burns.

In some cases, transient whitening of the affected area may occur.

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

Irritating to the respiratory tract.

Vapor/mist concentrations above recommended exposure levels may be extremely irritating to mucous membranes, eyes, respiratory tract, and lungs.

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

Not known.

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.

PE230 / PE330 POLYESTER HARDENER**4. FIRST AID MEASURES**

Poison Information Centres in each State capital city can provide additional assistance for scheduled poisons.
Eye wash fountains and safety showers should be easily accessible.

SWALLOWED

Harmful if swallowed.

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

Immediately rinse the mouth out with water. Give water to drink.

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, which can be fatal.

Seek medical attention without delay.

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.

Seek medical attention if exposure has been prolonged or severe or if signs or symptoms such as redness, swelling, blistering or irritation develop or persist.

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 required, seek medical attention.

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.

ADVICE TO DOCTOR

A case of toxic myocarditis has been reported following ingestion.

If eye contact, refer to eye specialist.

Treat symptomatically.

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.

PE230 / PE330 POLYESTER HARDENER**5. FIRE FIGHTING MEASURES****FOR LARGE SPILLS AND FIRES IMMEDIATELY CALL YOUR FIRE DEPARTMENT.****FIRE AND EXPLOSION HAZARD**

Flammable gases and vapors.

Burns fiercely when ignited.

Decomposes very slowly at ambient temperatures to give off oxygen.

Containers involved in a fire can constitute an explosion risk if confined.

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

Jetting of burning liquid and fireballs can also occur.

Organic peroxides provide oxygen for combustion, so simple smothering actions are not effective against established fires.

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.

Due to possibility of re-ignition, extinguished residues must be thoroughly cooled before approaching.

In the case of incomplete combustion may form toxic materials such as carbon monoxide (CO), carbon dioxide (CO₂), various hydrocarbons, fumes and smoke.

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

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.

Self-accelerating decomposition temperature (SADT) ≈ 60 °C.

CONDITIONS TO AVOID

Exposure to direct sunlight, heat or sources of ignition and contamination.

Avoid contamination with any materials.

Never mix directly with accelerators or promoters.

Do not confine in closed systems or equipment.

Do not return unused product to original container.

FIRE FIGHTING MEDIA

Large quantities of fine water spray.

FIRE FIGHTING PROCEDURES

If employees are expected to fight fires, they must be trained and equipped as stated in the appropriate regulations.

Fight fires only from a safe distance and with adequate cover.

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

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

Explosion hazard for product under confinement includes possibility of containers "rocketing" and production of fireballs.

For large fires action may be need to be limited to cooling adjacent exposures with water to prevent fire spread.

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

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

PE230 / PE330 POLYESTER HARDENER**6. ACCIDENTAL RELEASE MEASURES****SPILLS****FOR LARGE SPILLS AND FIRES immediately call your fire department.**

May be violently or explosively reactive.

Stop liquid at the source if safe to do so.

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

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.

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

Consider evacuation.

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

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

No smoking, naked lights or ignition sources.

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

Avoid breathing vapors and contact with skin and eyes.

Wear breathing apparatus, protective gloves and full protective clothing.

If possible collect spillage in clean plastic containers with vented lids.

Alternatively, absorb spillage on inert material such as vermiculite, perlite or clean sand.

Addition of water is recommended.

Keep chemicals 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.

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.

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

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.

PE230 / PE330 POLYESTER HARDENER**7. HANDLING and STORAGE****HANDLING**

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

Observe manufacturer's storing and handling recommendations.

Packing as supplied by manufacturer.

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.

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

Handle containers with care.

Open slowly in order to control possible pressure release.

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.

Irritating to eyes, skin and mucous membranes.

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

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.

STORAGE REQUIREMENT

Store in upright original vented container in accordance with local statutory requirements and applicable standards for organic peroxides.

Store in an approved storage area away from direct sunlight.

Keep container dry and tightly closed when not in use.

Check all containers are clearly labelled.

Protect containers against physical damage and check regularly for leaks.

Avoid exposure to temperatures above 35 °C.

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

Materials are stable on storage, but should be stored in a cool and well ventilated place away from sources of ignition, acids, alkalis, reducing agents, oxidising agents, rust, transition metals and their compounds (such as iron, copper, brass, bronze, cobalt, nickel, lead), resins, promoters, accelerators, combustible materials and odor sensitive materials.

Do NOT pressurise, cut, or heat containers.

Empty product containers may contain product residue.

Do NOT reuse empty containers without commercial cleaning or reconditioning.

CONDITIONS TO AVOID

Exposure to direct sunlight, heat or sources of ignition and contamination.

Avoid contamination with any materials.

Never mix directly with accelerators or promoters.

Do not confine in closed systems or equipment.

Do not return unused product to original container.

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".

PE230 / PE330 POLYESTER HARDENER**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.

Use away from all ignition sources.

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

While good natural ventilation may be adequate in most cases, local exhaust ventilation may be required.

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.

All electrical equipment should conform to the requirements of AS3000 for location of Class 1 Zone 1.

The effectiveness of an air purifying respirators are limited. Use them only for single, short term exposures.

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

As with any organic peroxide, PE230/PE330 HARDENER is regarded as being flammable and therefore presents a fire risk.

Flammable liquid.

Can readily form flammable mixtures with air.

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

Electrical equipment should conform to the requirements of AS3000 for location of Class 1 Zone 1.

Prevent build up of flammable vapors.

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

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

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.

PE230 / PE330 POLYESTER HARDENER**8. EXPOSURE CONTROLS - continued**

EXPOSURE LIMITS : 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.

Di-Methyl Phthalate

TLV-TWA : 5 mg/m³
STEL : Not Available
IDLH Level : Not Available
Odour Threshold Value : Not Available

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

Methyl Ethyl Ketone Peroxide

TLV-TWA : 0.2 ppm / 1.5 mg/m³
STEL : Peak Limitation
IDLH Level : Not Available
Odour Threshold Value : Not Available

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/m³
STEL : 300 ppm / 890 mg/m³
IDLH Level : Not Available
Odour Threshold Value : Not Available

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

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.

PE230 / PE330 POLYESTER HARDENER**8. EXPOSURE CONTROLS - continued**

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, over an entire working life which, according to current knowledge nearly all workers may be repeatedly exposed day after day should neither impair the health of, nor cause undue discomfort to, nearly all workers. 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.

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 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.

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.

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.

PE230 / PE330 POLYESTER HARDENER**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 standard of cleanliness and personal hygiene.

Keep away from foodstuffs, drinks and tobacco.

Keep working clothes separate.

Laundry 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.

P.V.C. gloves should be worn when handling.

Hand protection should comply with AS2161.

Trousers, long sleeved shirt and closed in shoes or safety footwear should be worn as a general precaution.

A PVC apron, rubber or PVC boots or a chemical splash suit may be required for some activities particularly where a definite risk of splashing is present.

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

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.

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

PE230 / PE330 POLYESTER HARDENER**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.

An approved organic vapors canister and full face shield mask should be used if the atmosphere is not otherwise hazardous, e.g. oxygen deficient.

Where ventilation is not adequate, respiratory protection may be required.

Above this level, a self-contained breathing apparatus (complying with AS1716 and be selected in accordance with AS1715) 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.

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.

Eye protection should comply with AS1337 and be selected and used in accordance with AS1336.

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.

PE230 / PE330 POLYESTER HARDENER**9. PHYSICAL and CHEMICAL PROPERTIES****PHYSICAL DESCRIPTION / PROPERTIES**

APPEARANCE		: Clear, colourless, mobile liquid.	
BOILING POINT	(°C)	: 118 °C	Decomposes
MELTING POINT	(°C)	: Not Applicable	
VAPOR PRESSURE	(kPa @ 55°C)	: 50	
RELATIVE VAPOR DENSITY		: Not Determined	(Air = 1)
SPECIFIC GRAVITY	(@ 25°C)	: 1.15 ± 0.05	(Water =1)
% VOLATILES	(by volume)	: 100.0	
EVAPORATION RATE		: < 1.0	(Butyl Acetate =1)
FLASH POINT	(°C)	: 68 °C	(SETAFLASH)
FLAMMABILITY LIMITS	(% volume)	: Not Determined	
SOLUBILITY IN WATER	(% by weight)	: 1% Miscible	
Self-Accelerating Decomposition Temperature (SADT)		: ≈ 60 °C.	
pH VALUE		: Not Determined	
CHEMICAL REACTIVITY		: Decomposes slowly at ambient temperatures to give off oxygen	
OTHER PROPERTIES		: Can readily form flammable mixture.	

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

Hazardous polymerization	: Cannot occur
Stability	: Decomposes very slowly at ambient temperatures to give off oxygen.
Conditions to Avoid	: Heat, sparks, flame and build up of static electricity. Exposure to direct sunlight, heat or sources of ignition and contamination. Avoid contamination with any materials. Never mix directly with accelerators or promoters. Do not confine in closed systems or equipment. Do not return unused product to original container.
Incompatibility (materials to avoid for purpose of transport, handling & storage only)	: Acids, alkalis, reducing agents, oxidising agents, rust, transition metals & their compounds (such as iron, copper, brass, bronze, cobalt, nickel, lead), resins, promoters, accelerators and combustible materials.
Hazardous Decomposition or By Products	: Flammable gases and vapors.

PE230 / PE330 POLYESTER HARDENER**11. TOXICOLOGICAL INFORMATION****TOXICITY**

Do NOT induce vomiting if swallowed

Prolonged, repeated skin contact may result in possible irritation and dermatitis.

Limits shown for guidance only.

Follow applicable regulations (refer WORKSAFE Australia Exposure Standards).

Oral	LD ₅₀	(rat)	: range reported 484 mg/kg to 500 mg/kg
Oral	TD _{L0}	(human)	: 480 mg/kg
Inhalation	LC ₅₀	(rat)	: 200 ppm / 4 hours
Inhalation	LC ₅₀	(mice)	: 170 ppm / 4 hours

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.

It is a colorless liquid at room temperature and is flammable.

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

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 has high acute toxicity to aquatic life and causes injury to various agricultural and ornamental crops.

Insufficient data are available to evaluate or predict the short-term effects of this product to 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 has high chronic toxicity to aquatic life.

Insufficient data are available to evaluate or predict the long-term effects of this product to plants, birds, or land animals.

WATER SOLUBILITY

This product is moderately soluble in water.

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 somewhat higher than the average concentration of this product in the water from which the fish was taken.



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PE230 / PE330 POLYESTER HARDENER

13. DISPOSAL CONSIDERATIONS

Contaminated material must be disposed of promptly.

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

Disposal may be by chemical decomposition or burning small quantities under controlled conditions.

Approval may be required from relevant authorities.

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.

Mix with a less combustible material and incinerate in appropriate equipment by an approved agent provided local regulations are observed.

Do NOT pressurise, cut, or heat weld containers.

Empty product containers may contain product residue.

PE230 / PE330 POLYESTER HARDENER**14. TRANSPORT INFORMATION**

Classified as a Dangerous Good (Class 5.2) 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 5.2) for transport purposes.

PROPER SHIPPING NAME	: ORGANIC PEROXIDE TYPE D, LIQUID - (Methyl Ethyl Ketone Peroxide 40%)		
U.N. NUMBER	: 3105	PACKAGING GROUP	: II
D.G. CLASS	: 5.2	AS 1940 Class	: PG II
SUBSIDIARY RISK	: 9		
HAZCHEM CODE	: Not Available	IMO HAZARD CLASS	: Not Available
HAZARD CATEGORY	: Harmful, Corrosive, Flammable		
EPG	: 5K1	IERG NUMBER	: 32
SPECIAL SHIPPING INFORMATION	: IMDG 5.2		
STORAGE TEMPERATURE	(°C) : Ambient		
TRANSPORT TEMPERATURE	(°C) : Ambient		
LOADING / UNLOADING TEMPERATURE	(°C) : Ambient		
STORAGE / TRANSPORTATION PRESSURE (kPa)	: Atmospheric		
ELECTROSTATIC ACCUMULATION HAZARD ?	: Use proper grounding procedure.		

Class 5.2 Organic Peroxides incompatible in a placard load with any of the following :-

- Class 1 Explosives
- Class 2.1 Flammable gases (when both in bulk)
- Class 2.2 Non-Flammable, Non-Toxic gases
- Class 2.3 Toxic gases
- Class 3 Flammable Liquids
- Class 4.1 Flammable Solids
- Class 4.2 Spontaneously Combustible substances
- Class 4.3 Dangerous When Wet
- Class 5.1 Oxidizing agents
- Class 5.2 Organic peroxides
- Class 7 Radioactive substances
- Class 8 Corrosive substances
- Foodstuffs and foodstuff empties.

Refer to Australian Code for the Transport of Dangerous Goods By Road and Rail (6th Edition), the IMO regulations for sea freight and the IATA Regulations for air freight transport regulations

Refer to state Dangerous Goods regulations for storage requirements.

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

15. REGULATORY INFORMATION

No information available

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)