Section 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME

METHYL ETHYL KETONE

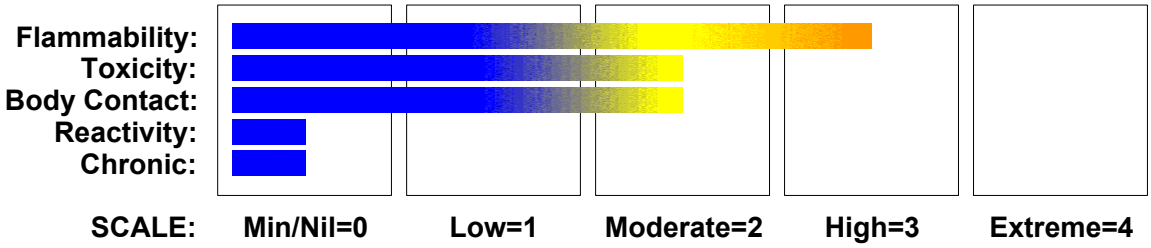
CAS RN

78-93-3

SUPPLIER

Company: APS (Asia Pacific Speciality Chemicals Ltd)
Address:
390 Marion Street
Bankstown
NSW, 2200
AUS
Telephone: (+61 2) 9795 5500
Fax: 02 9839 0219

HAZARD RATINGS



PRODUCT NUMBERS

MBK-E0405-0023
PTMI-E0041-5002
MMSB-E0405-0023
MTHK-E0405-0023

PRODUCT USE

As a solvent in lacquers, thinners, solvent cements, adhesives, glues, in paint removers, nail polish removers, nail polish and cleaning solvents. In the manufacture of smokeless gunpowder and colourless synthetic resins. The use of a quantity of material in an unventilated or confined space may result in increased exposure and an irritating atmosphere developing Before starting consider control of exposure by mechanical ventilation WARNING:Intentional misuse by concentrating/inhaling contents may be lethal.

SYNONYMS

C4- H8- O	CH3COC2H5
CH3COCH2CH3	2- butanone
ethyl methyl ketone	MEK
methyl acetone	butan- 2- one
butanone technical	BP

continued...

Section 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION ...

34170	34171
34172	Shell 83202
Era MEK	Redox
Exxon MEK	Parks
Chemport 3108LD	

Section 2 - COMPOSITION / INFORMATION ON INGREDIENTS

NAME	CAS RN	INT HAZ	%
methyl ethyl ketone	78-93-3	F+,Xi	>99
EC NO: 201-159-0 R CODES: R11,R36/37,R66,R67			

Section 3 - HAZARDS IDENTIFICATION

STATEMENT OF HAZARDOUS NATURE

CONSIDERED A DANGEROUS SUBSTANCE ACCORDING TO DIRECTIVE 67/548/EEC, POINT 4; AND HAZARDOUS ACCORDING TO OSHA 29 CFR 1910.1200 (USA).

POTENTIAL HEALTH EFFECTS

ACUTE HEALTH EFFECTS

SWALLOWED

Although ingestion is not thought to produce harmful effects (as classified under EC Directives), the material may still be damaging to the health of the individual, following ingestion, especially where pre-existing organ (e.g liver, kidney) damage is evident. Present definitions of harmful or toxic substances are generally based on doses producing mortality rather than those producing morbidity (disease, ill-health). Gastrointestinal tract discomfort may produce nausea and vomiting. In an occupational setting however, ingestion of insignificant quantities is not thought to be cause for concern.

EYE

Evidence exists, or practical experience predicts, that the material may cause eye irritation in a substantial number of individuals and/or may produce significant ocular lesions which are present twenty-four hours or more after instillation into the eye(s) of experimental animals.
Repeated or prolonged eye contact may cause inflammation characterised by temporary redness (similar to windburn) of the conjunctiva (conjunctivitis); temporary impairment of vision and/or other transient eye damage/ulceration may occur.

SKIN

Repeated exposure may cause skin dryness and cracking.
The material is not thought to produce adverse health effects or skin irritation following contact (as classified by EC Directives using animal models). Nevertheless, good hygiene practice requires that exposure be kept to a minimum and that suitable gloves be used in an occupational setting.

continued...

Section 3 - HAZARDS IDENTIFICATION ...

INHALED

Evidence shows, or practical experience predicts, that the material produces irritation of the respiratory system in a substantial number of individuals following inhalation.
Vapours may cause drowsiness and dizziness.
Although inhalation is not thought to produce harmful effects (as classified under EC Directives), the material may still produce health damage, especially where pre-existing organ (e.g liver, kidney) damage is evident. Present definitions of harmful or toxic substances are generally confined to doses producing mortality rather than those producing morbidity (disease, ill-health).

CHRONIC HEALTH EFFECTS

Principal routes of exposure are usually by skin contact/absorption and inhalation of vapour Prolonged or continuous skin contact with the liquid may cause defatting with drying, cracking, irritation and dermatitis following. The material is considered to have a low order of toxicity; however methyl ethyl ketone is often used in combination with other solvents and the toxic effects of the mix may be greater than either solvent alone. Combinations of n-hexane with methyl ethyl ketone and also methyl n-butyl ketone with methyl ethyl ketone show increase in peripheral neuropathy, a progressive disorder of nerves of extremities. Combinations with chloroform also show increase in toxicity.

Section 4 - FIRST AID MEASURES

SWALLOWED

If poisoning occurs, contact a doctor or Poisons Information Centre.
- If swallowed do NOT induce vomiting.
- If vomiting occurs, lean patient forward or place on left side (head-down position, if possible) to maintain open airway and prevent aspiration.
- Observe the patient carefully.
- Never give liquid to a person showing signs of being sleepy or with reduced awareness; i.e. becoming unconsciousness
- Give water to rinse out mouth, then provide liquid slowly and as much as casualty can comfortably drink.
- Seek medical advice.

EYE

If this product comes in contact with the eyes:
- Immediately hold eyelids apart and flush the eye continuously with running water.
- Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids.
- Continue flushing until advised to stop by the Poisons Information Centre or a doctor, or for at least 15 minutes.
- Transport to hospital or doctor without delay.
- Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.

SKIN

If skin contact occurs:
- Immediately remove all contaminated clothing, including footwear
- Flush skin and hair with running water (and soap if available).
- Seek medical attention in event of irritation.

continued...

Section 4 - FIRST AID MEASURES ...

INHALED

- If fumes or combustion products are inhaled remove from contaminated area.
- Lay patient down. Keep warm and rested.
- Prostheses such as false teeth, which may block airway, should be removed, where possible, prior to initiating first aid procedures.
- Apply artificial respiration if not breathing, preferably with a demand valve resuscitator, bag-valve mask device, or pocket mask as trained. Perform CPR if necessary.
- Transport to hospital, or doctor.

NOTES TO PHYSICIAN

for simple ketones:

BASIC TREATMENT

- Establish a patent airway with suction where necessary.
- Watch for signs of respiratory insufficiency and assist ventilation as necessary.
- Administer oxygen by non-rebreather mask at 10 to 15 l/min.
- Monitor and treat, where necessary, for pulmonary oedema .
- Monitor and treat, where necessary, for shock.
- DO NOT use emetics. Where ingestion is suspected rinse mouth and give up to 200 ml water (5mL/kg recommended) for dilution where patient is able to swallow, has a strong gag reflex and does not drool.
- Give activated charcoal.

ADVANCED TREATMENT

- Consider orotracheal or nasotracheal intubation for airway control in unconscious patient or where respiratory arrest has occurred.
- Consider intubation at first sign of upper airway obstruction resulting from oedema.
- Positive-pressure ventilation using a bag-valve mask might be of use.
- Monitor and treat, where necessary, for arrhythmias.
- Start an IV D5W TKO. If signs of hypovolaemia are present use lactated Ringers solution. Fluid overload might create complications.
- Drug therapy should be considered for pulmonary oedema.
- Hypotension with signs of hypovolaemia requires the cautious administration of fluids. Fluid overload might create complications.
- Treat seizures with diazepam.
- Proparacaine hydrochloride should be used to assist eye irrigation.

EMERGENCY DEPARTMENT

- Laboratory analysis of complete blood count, serum electrolytes, BUN, creatinine, glucose, urinalysis, baseline for serum aminotransferases (ALT and AST), calcium, phosphorus and magnesium, may assist in establishing a treatment regime. Other useful analyses include anion and osmolar gaps, arterial blood gases (ABGs), chest radiographs and electrocardiograph.
- Positive end-expiratory pressure (PEEP)-assisted ventilation may be required for acute parenchymal injury or adult respiratory distress syndrome.
- Consult a toxicologist as necessary.

BRONSTEIN, A.C. and CURRANCE, P.L.
EMERGENCY CARE FOR HAZARDOUS MATERIALS EXPOSURE: 2nd Ed. 1994

continued...

Section 4 - FIRST AID MEASURES ...

Section 5 - FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA

- Alcohol stable foam.
- Dry chemical powder.
- BCF (where regulations permit).
- Carbon dioxide.
- Water spray or fog - Large fires only.

FIRE FIGHTING

- Alert Fire Brigade and tell them location and nature of hazard.
- May be violently or explosively reactive.
- Wear breathing apparatus plus protective gloves.
- Prevent, by any means available, spillage from entering drains or water course.
- Consider evacuation (or protect in place).
- Fight fire from a safe distance, with adequate cover.
- If safe, switch off electrical equipment until vapour fire hazard removed.
- Use water delivered as a fine spray to control the fire and cool adjacent area.
- Avoid spraying water onto liquid pools.
- Do not approach containers suspected to be hot.
- Cool fire exposed containers with water spray from a protected location.
- If safe to do so, remove containers from path of fire.

FIRE/EXPLOSION HAZARD

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

Other combustion products include carbon dioxide (CO_2)

FIRE INCOMPATIBILITY

Avoid contamination with strong oxidising agents as ignition may result
Attacks, softens and may dissolve rubber, many plastics, paints and coatings

Section 6 - ACCIDENTAL RELEASE MEASURES

MINOR SPILLS

- Remove all ignition sources.
- Clean up all spills immediately.
- Avoid breathing vapours and contact with skin and eyes.
- Control personal contact by using protective equipment.

continued...

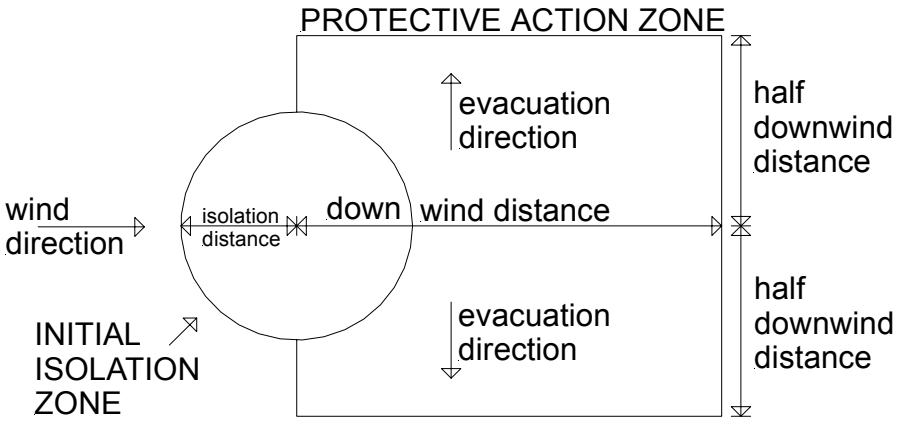
Section 6 - ACCIDENTAL RELEASE MEASURES ...

- Contain and absorb small quantities with vermiculite or other absorbent material.
- Wipe up.
- Collect residues in a flammable waste container.

MAJOR SPILLS

- Clear area of personnel and move upwind.
- Alert Fire Brigade and tell them location and nature of hazard.
- May be violently or explosively reactive.
- Wear breathing apparatus plus protective gloves.
- Prevent, by any means available, spillage from entering drains or water course.
- Consider evacuation (or protect in place).
- No smoking, naked lights or ignition sources.
- Increase ventilation.
- Stop leak if safe to do so.
- Water spray or fog may be used to disperse /absorb vapour.
- Contain spill with sand, earth or vermiculite.
- Use only spark-free shovels and explosion proof equipment.
- Collect recoverable product into labelled containers for recycling.
- Absorb remaining product with sand, earth or vermiculite.
- Collect solid residues and seal in labelled drums for disposal.
- Wash area and prevent runoff into drains.
- If contamination of drains or waterways occurs, advise emergency services.

PROTECTIVE ACTIONS FOR SPILL



From IERG (Canada/Australia)

Isolation Distance	25 metres
Downwind Protection Distance	300 metres

FOOTNOTES

1 PROTECTIVE ACTION ZONE is defined as the area in which people are at risk of harmful exposure. This zone assumes that random changes in wind direction confines the vapour plume to an area within 30 degrees on either side of the predominant wind direction, resulting in a crosswind protective action distance equal to the downwind protective action distance.

2 PROTECTIVE ACTIONS should be initiated to the extent possible, beginning with those closest to the spill and working away from the site in the downwind direction. Within the protective action zone a level of vapour concentration

continued...

Section 6 - ACCIDENTAL RELEASE MEASURES ...

may exist resulting in nearly all unprotected persons becoming incapacitated and unable to take protective action and/or incurring serious or irreversible health effects.

3 INITIAL ISOLATION ZONE is determined as an area, including upwind of the incident, within which a high probability of localised wind reversal may expose nearly all persons without appropriate protection to life-threatening concentrations of the material.

4 SMALL SPILLS involve a leaking package of 200 litres (55 US gallons) or less, such as a drum (jerrican or box with inner containers). Larger packages leaking less than 200 litres and compressed gas leaking from a small cylinder are also considered "small spills".
LARGE SPILLS involve many small leaking packages or a leaking package of greater than 200 litres, such as a cargo tank, portable tank or a "one-tonne" compressed gas cylinder.

5 Guide 127 is taken from the US DOT emergency response guide book.

6 IERG information is derived from CANUTEC - Transport Canada.

EMERGENCY RESPONSE PLANNING GUIDLINES (ERPG)

The maximum airborne concentration below which it is believed that nearly all individuals could be exposed for up to one hour WITHOUT experiencing or developing

life-threatening health effects is:

irreversible or other serious effects or symptoms which could impair an individual's ability to take protective action is:

other than mild, transient adverse effects without perceiving a clearly defined odour is:

American Industrial Hygiene Association (AIHA)

Section 7 - HANDLING AND STORAGE

PROCEDURE FOR HANDLING

Avoid generating and breathing mist
- Avoid all personal contact, including inhalation.
- Wear protective clothing when risk of exposure occurs.
- Use in a well-ventilated area.
- Prevent concentration in hollows and sumps.
- DO NOT enter confined spaces until atmosphere has been checked.
- Avoid smoking, naked lights, heat or ignition sources.
- When handling, DO NOT eat, drink or smoke.
- Vapour may ignite on pumping or pouring due to static electricity.
- DO NOT use plastic buckets.
- Earth and secure metal containers when dispensing or pouring product.
- Use spark-free tools when handling.
- Avoid contact with incompatible materials.
- Keep containers securely sealed.
- Avoid physical damage to containers.
- Always wash hands with soap and water after handling.
- Work clothes should be laundered separately.

continued...

Section 7 - HANDLING AND STORAGE ...

- Use good occupational work practice.
- Observe manufacturer's storing and handling recommendations.
- Atmosphere should be regularly checked against established exposure standards to ensure safe working conditions.

SUITABLE CONTAINER

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

STORAGE INCOMPATIBILITY

Avoid storage with oxidisers hypochlorites, e.g. pool chlorine, bleaches

STORAGE REQUIREMENTS

- Store in original containers in approved flame-proof area.
- No smoking, naked lights, heat or ignition sources.
- DO NOT store in pits, depressions, basements or areas where vapours may be trapped.
- Keep containers securely sealed.
- Store away from incompatible materials in a cool, dry well ventilated area.
- Protect containers against physical damage and check regularly for leaks.
- Observe manufacturer's storing and handling recommendations. DO NOT store above 50 deg. C.

Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

EXPOSURE CONTROLS

TLV TWA: 200 ppm BEI [ACGIH]
TLV STEL: 300 ppm BEI [ACGIH]
PEL TWA: 200 ppm, 590 mg/m³ [OSHA Z1]
TLV TWA: 200 ppm, 590 mg/m³; STEL: 300 ppm, 885 mg/m³
ES TWA: 150 ppm, 445 mg/m³; STEL: 300 ppm, 890 mg/m³
OES TWA: 200 ppm, 600 mg/m³; STEL: 300 ppm, 899 mg/m³ skin
MAK value: 200 ppm, 600 mg/m³
Designated H in List of MAK values: Danger of cutaneous absorption.
Absorption of such substances through the skin can pose an incomparably larger danger of toxicity than their inhalation. To avoid health risks when handling such substances, meticulous cleaning of the skin, hair and clothing is imperative.
MAK Category I Peak Limitation: For local irritants Allows excursions of twice the MAK value for 5 minutes at a time, 8 times per shift.
MAK Group C: There is no reason to fear risk of damage to the developing embryo when MAK and BAT values are observed.
MAK values, and categories and groups are those recommended within the Federal Republic of Germany
IDLH Level: 3000 ppm
Odour Threshold Value: Variously reported as 2 ppm and 4.8 ppm
Odour threshold: 2 ppm (detection); 5 ppm (recognition)
25 ppm (easy recognition); 300 ppm IRRITATING

Exposures at or below the recommended TLV-TWA are thought to prevent injurious systemic effects and to minimise objections to odour and

continued...

Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION ...

irritation. Where synergism or potentiation may occur stringent control of the primary toxin (e.g. n-hexane or methyl butyl ketone) is desirable and additional consideration should be given to lowering MEK exposures.

REPRODUCTIVE HEALTH GUIDELINES

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

Ingredient	ORG	UF	Endpoint	CR	TLV Adeq
methyl ethyl ketone	590 mg/m³	NA	NA	NA	Yes

These exposure guidelines have been derived from a screening level of risk assessment and should not be construed as unequivocally safe limits. ORGS represent an 8-hour time-weighted average unless specified otherwise.
CR = Cancer Risk/10000; UF = Uncertainty factor:
TLV believed to be adequate to protect reproductive health:
LOD: Limit of detection
Toxic endpoints have also been identified as:
D = Developmental; R = Reproductive; TC = Transplacental carcinogen
Jankovic J., Drake F.: A Screening Method for Occupational Reproductive American Industrial Hygiene Association Journal 57: 641-649 (1996)

PERSONAL PROTECTION




EYE

- Safety glasses with side shields; or as required,
- Chemical goggles.
- Contact lenses pose a special hazard; soft lenses may absorb irritants and all lenses concentrate them.

HANDS/FEET

- Barrier cream with polyethylene gloves or Butyl rubber gloves

Safety footwear
DO NOT use this product to clean the skin

RESPIRATOR

Selection of the Class and Type of respirator will depend upon the level of breathing zone contaminant and the chemical nature of the contaminant. Protection Factors (defined as the ratio of contaminant outside and inside the mask) may also be important.

continued...

Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION ...

Breathing Zone Level ppm (volume)	Maximum Protection Factor	Half-face Respirator	Full-Face Respirator
1000	10	a-AUS	-
1000	50	-	a-AUS
5000	50	Airline *	-
5000	100	-	a-2
10000	100	-	a-3
	100+		Airline**

* - Continuous Flow ** - Continuous-flow or positive pressure demand

OTHER

Overalls or
- Impervious protective clothing.
- Eyewash unit.

Ensure there is ready access to an emergency shower

ENGINEERING CONTROLS

Use in a well-ventilated area or Local exhaust ventilation may be required for safe working, i.e. to keep exposures below required standards, otherwise PPE is required.
CARE: Use of a quantity of this material in confined space or poorly ventilated area, where rapid build up of concentrated atmosphere may occur, could require increased ventilation and/or protective gear
General exhaust is adequate under normal operating conditions. Local exhaust ventilation may be required in special circumstances. If risk of overexposure exists, wear approved respirator. Supplied-air type respirator may be required in special circumstances. Correct fit is essential to ensure adequate protection. Provide adequate ventilation in warehouses and enclosed storage areas. Air contaminants generated in the workplace possess varying "escape" velocities which, in turn, determine the "capture velocities" of fresh circulating air required to effectively remove the contaminant.

Type of Contaminant:	Air Speed:
solvent, vapours, degreasing etc., evaporating from tank (in still air).	0.25-0.5 m/s (50-100 f/min)
aerosols, fumes from pouring operations, intermittent container filling, low speed conveyer transfers, welding, spray drift, plating acid fumes, pickling (released at low velocity into zone of active generation)	0.5-1 m/s (100-200 f/min.)
direct spray, spray painting in shallow booths, drum filling, conveyer loading, crusher dusts, gas discharge (active generation into zone of rapid air motion)	1-2.5 m/s (200-500 f/min.)
grinding, abrasive blasting, tumbling, high speed wheel generated dusts (released at high initial velocity into zone of very high rapid air motion)	2.5-10 m/s (500-2000 f/min.)

continued...

Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION ...

Within each range the appropriate value depends on:

Lower end of the range	Upper end of the range
1: Room air currents minimal or favourable to capture	1: Disturbing room air currents
2: Contaminants of low toxicity or of nuisance value only.	2: Contaminants of high toxicity
3: Intermittent, low production.	3: High production, heavy use
4: Large hood or large air mass in motion	4: Small hood-local control only

Simple theory shows that air velocity falls rapidly with distance away from the opening of a simple extraction pipe. Velocity generally decreases with the square of distance from the extraction point (in simple cases). Therefore the air speed at the extraction point should be adjusted, accordingly, after reference to distance from the contaminating source. The air velocity at the extraction fan, for example, should be a minimum of 1-2 m/s (200-400 f/min) for extraction of solvents generated in a tank 2 meters distant from the extraction point. Other mechanical considerations, producing performance deficits within the extraction apparatus, make it essential that theoretical air velocities are multiplied by factors of 10 or more when extraction systems are installed or used.
In confined spaces where there is inadequate ventilation, wear full-face air supplied breathing apparatus

Section 9 - PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL PROPERTIES

Liquid.
Does not mix with water.
Floats on water.

Molecular Weight: 72.12	Boiling Range (°C): 78-80
Melting Range (°C): -85.9	Specific Gravity (water=1): 0.81 @ 20 C
Solubility in water (g/L): Partly miscible	pH (as supplied): Not applicable
pH (1% solution): Not applicable	Vapour Pressure (kPa): 9.5 @ 20 C
Volatile Component (%vol): 100	Evaporation Rate: 5.7 Fast BuAc=1
Relative Vapour Density (air=1): 2.4 @ 20 C	Flash Point (°C): -6.7 closed cup
Lower Explosive Limit (%): 1.8	Upper Explosive Limit (%): 12.0
Autoignition Temp (°C): 474	Decomposition Temp (°C): Not available
State: Liquid	

APPEARANCE

Thin colourless highly flammable liquid; partly mixes with water (27.5%).
Less soluble at higher temperatures. Solubility of water in MEK: 12.5% at 25 deg. C.
Penetrating, sharp smell. Very volatile and vapour is heavier than air.

continued...

Section 9 - PHYSICAL AND CHEMICAL PROPERTIES ...

Mixes with alcohol, ether and hydrocarbon solvents, petrol, turps etc.
Attacks, softens and may dissolve rubber, many plastics, paints and coatings

Section 10 - CHEMICAL STABILITY AND REACTIVITY INFORMATION

CONDITIONS CONTRIBUTING TO INSTABILITY

- Presence of incompatible materials.
- Product is considered stable.
- Hazardous polymerisation will not occur.

Section 11 - TOXICOLOGICAL INFORMATION

methyl ethyl ketone

TOXICITY
Oral (rat) LD50: 2737 mg/kg
Inhalation (human) TCLo: 100 ppm/5 m
Inhalation (rat) LD50: 23500 mg/m3/8 hr
Dermal (rabbit) LD50: 6480 mg/kg

IRRITATION
Eye (human): 350 ppm -irritant
Eye (rabbit): 80 mg - irritant
Skin (rabbit): 402 mg/24 hr - mild
Skin (rabbit):13.78mg/24 hr open - mild

Section 12 - ECOLOGICAL INFORMATION

Hazardous Air Pollutant: Yes
Fish LC50 (96hr.) (mg/l): 1690-5640
Algae IC50 (72hr.) (mg/l): 110-4300
log Kow (Prager 1995): 0.26-0.29
log Kow (Sangster 1997): 0.29
log Pow (Verschueren 1983): 0.26
BOD5: 1.92
COD: 2.2
ThOD: 2.44
Half-life Soil - High (hours): 168
Half-life Soil - Low (hours): 24
Half-life Air - High (hours): 642
Half-life Air - Low (hours): 64.2
Half-life Surface water - High (hours): 168
Half-life Surface water - Low (hours): 24
Half-life Ground water - High (hours): 336
Half-life Ground water - Low (hours): 48
Aqueous biodegradation - Aerobic - High (hours): 168
Aqueous biodegradation - Aerobic - Low (hours): 24
Aqueous biodegradation - Anaerobic - High (hours): 672
Aqueous biodegradation - Anaerobic - Low (hours): 96
Aqueous biodegradation - Removal secondary treatment - High (hours): 100%
Aqueous biodegradation - Removal secondary treatment - Low (hours): 86%
Photooxidation half-life water - High (hours): 7.10E+05
Photooxidation half-life water - Low (hours): 1.80E+04

continued...

Section 12 - ECOLOGICAL INFORMATION ...

Photooxidation half-life air - High (hours): 642
Photooxidation half-life air - Low (hours): 64.2
First order hydrolysis half-life (hours): >50 YR

log Kow : 0.26-0.69
log Koc : 0.69
Koc : 34
Half-life (hr) air : 2.3
Half-life (hr) H2O surface water : 72-288
Henry's atm m3 /mol: 1.05E-05
BOD 5 if unstated: 1.5-2.24,46%
COD : 2.2-2.31,100%
ThOD : 2.44
BCF : 1
Toxicity Fish: LC50(96)13.16-277.8mg/L
Toxicity invertebrate: LD0 1g/L
Bioaccumulation : not sig
Anaerobic effects : some degrad
Effects on algae and plankton: algae LD0 125mg/L
Degradation Biological: sig
processes Abiotic: photox,RxnOH*,hydrl photol/deg notsig

Section 13 - DISPOSAL CONSIDERATIONS

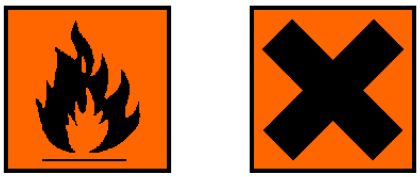
- Consult manufacturer for recycling options and recycle where possible .
- Consult State Land Waste Management Authority for disposal.
- Incinerate residue at an approved site.
- Recycle containers if possible, or dispose of in an authorised landfill.

Section 14 - TRANSPORTATION INFORMATION

Shipping Name:
ETHYL METHYL KETONE (METHYL ETHYL KETONE)
METHYL ETHYL KETONE
Hazard Class: 3
UN/NA Number: 1193
ADR Number: 33
Packing Group: II
Labels Required: flammable liquid
Additional Shipping Information:
International Transport Regulations:
IMO: 3

continued...

Section 15 - REGULATORY INFORMATION



RISK

Highly flammable.
Irritating to eyes and respiratory system.
Repeated exposure may cause skin dryness and cracking.
Vapours may cause drowsiness and dizziness.

Name	Score	WGK
methyl ethyl ketone	1	Source: VwVwS

SAFETY

Keep out of reach of children. Keep container in a well ventilated place. Keep away from sources of ignition. No smoking. Avoid contact with eyes. Take precautionary measures against static discharges.

REGULATIONS

methyl ethyl ketone (CAS: 78-93-3) is found on the following regulatory lists:
European Customs Inventory of Chemical Substances
European Inventory of Existing Chemical Substances (EINECS)
European Union (EU) List of Dangerous Substances (Annex I)
German Pregnancy Risk Group Classifications & Germ Cell Mutagens
Swiss Federal Office of Public Health Giftliste Inventory

Section 16 - OTHER INFORMATION

RISK

Explanation of Risk Codes used in the Ingredient Table

R11	Highly flammable.
R36/37	Irritating to eyes and respiratory system.
R66	Repeated exposure may cause skin dryness and cracking.
R67	Vapours may cause drowsiness and dizziness.

This document is copyright. Apart from any fair dealing for the purposes of private study, research, review or criticism, as permitted under the Copyright Act, no part may be reproduced by any process without written permission from CHEMWATCH. TEL (+61 3) 9572 4700.