

**SECTION 1: Identification of the substance/mixture and of the company/undertaking**

**1.1 Product identifier**

Product name METHYL ETHYL KETONE  
CAS-No. 78-93-3  
Product code AR1122, CG1122, EP1122, GP1122, LC1122, RP1122, XP1122

**1.2 Relevant identified uses of the substance or mixture and uses advised against**

Identified uses Chemical for analysis and production

**1.3 Details of the supplier of the safety data sheet**

Company RCI LABSCAN LIMITED.  
24 Rama 1 Road, Pathumwan, Bangkok 10330 Thailand  
Telephone number (662) 613-7911-4  
Fax number (662) 613-7915

**1.4 Emergency Telephone Number**

Emergency phone (662) 613-7911-4

**SECTION 2: Hazards identification**

**2.1 Classification of the substance or mixture**

**Classification according to Regulation (EC) No 1272/2008**

Flammable liquids (Category 2), H225  
Eye irritation (Category 2), H319  
Specific target organ toxicity - single exposure (Category 3), Central nervous system, H336  
For the full text of the H-Statements mentioned in this Section, see Section 16.

**Classification according to EU Directives 67/548/EEC or 1999/45/EC**

F	Highly flammable	R11
Xi	Irritant	R36
		R66
		R67

For the full text of the R-phrases mentioned in this Section, see Section 16.

**2.2 Label elements**

**Labelling according Regulation (EC) No 1272/2008**

Pictogram



Signal word Danger

Hazard statement(s)

H225 Highly flammable liquid and vapour.  
H319 Causes serious eye irritation.  
H336 May cause drowsiness or dizziness.  
EUH066 Repeated exposure may cause skin dryness or cracking.

Precautionary statement(s)

P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.

P233	Keep container tightly closed.
P240	Ground/bond container and receiving equipment.
P241	Use explosion-proof electrical/ventilating/lighting equipment.
P242	Use only non-sparking tools.
P243	Take precautionary measures against static discharge.
P261	Avoid breathing vapours.
P264	Wash hand thoroughly after handling.
P271	Use only outdoors or in a well-ventilated area.
P280	Wear protective gloves/eye protection/face protection.
P303 + P361 + P353	IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
P304 + P340	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P312	Call a POISON CENTER or doctor/physical if you feel unwell.
P337 + P313	If eye irritation persists: Get medical advice/attention.
P370 + P378	In case of fire: Use carbon dioxide, dry chemical or foam for extinction.
P403 + P235	Store in a well-ventilated place. Keep cool.
P405	Store locked up.

**2.3 Other hazards** None

### SECTION 3: Composition/information on ingredients

#### 3.1 Substances

Synonyms 2-Butanone, Butanone, Ethyl methyl ketone, Methyl acetone, MEK

CAS-No	EC-No	EC-Index-No	Formula	Molecular Weight	Weight %
78-93-3	201-159-0	606-002-00-3	C <sub>2</sub> H <sub>5</sub> COCH <sub>3</sub>	72.11 g/mol	>99

#### Hazardous ingredients according to Regulation (EC) No 1272/2008

Component	Concentration	Classification
<b>Methyl ethyl ketone</b>		
CAS-No 78-93-3 EC-No 201-159-0 EC-Index-No 606-002-00-3	>99%	Flammable liquids (Category 2), H225 Eye irritation (Category 2), H319 Specific target organ toxicity - single exposure (Category 3), Central nervous system, H336

#### Hazardous ingredients according to Directive 1999/45/EC

Component	Concentration	Classification
<b>Methyl ethyl ketone</b>		
CAS-No 78-93-3 EC-No 201-159-0 EC-Index-No 606-002-00-3	>99%	F, Highly flammable, R11 Xi, Irritant, R36 R66 R67

For the full text of the H-Statements and R-Phrases mentioned in this Section, see Section 16

## SECTION 4: First aid measures

### 4.1 Description of first aid measures

General advice	Show this safety data sheet to the doctor in attendance.
Inhalation	Move to fresh air in case of accidental inhalation of vapors. Keep patient warm. In case of shortness of breath, give oxygen. Apply artificial respiration only if patient is not breathing or under medical supervision. No artificial aspiration mouth to mouth or mouth to nose. Use suitable instruments/apparatus.
Skin contact	Remove contaminated clothing and wash affected skin with soap and water. Obtain medical attention. If signs of poisoning appear, treat as for inhalation. Wash contaminated clothing before reuse. Contaminated combustible material, e.g. clothing ignites more readily and burns fiercely.
Eye contact	If the substance has got into the eyes, immediately wash out with plenty of water at least 15 minutes. Obtain medical attention.
Ingestion	Rinse mouth. Do not induce vomiting. Keep patient warm. In case of shortness of breath, give oxygen. Apply artificial respiration only if patient is not breathing or under medical supervision. No artificial aspiration mouth to mouth or mouth to nose. Use suitable instruments/apparatus. Obtain medical attention. Never give anything by mouth to an unconscious person.

### 4.2 Most important symptoms and effects, both acute and delayed

The most important known symptoms and effects are described in section 2.2 and section 11.

### 4.3 Indication of any immediate medical attention and special treatment needed

Activate charcoal 20-40 g in 10% slurry. Risk of aspiration. No milk, no digestible oils. Keep air ways free. Laxative: Sodium Sulfate 1 tablespoon/250 ml of water after ingestion of large. Amount: Gastric lavage.

## SECTION 5: Firefighting measures

### 5.1 Extinguishing media

#### Suitable extinguishing media

Extinguish with carbon dioxide, dry chemical or foam. In the event of fire, cool tanks with water spray.

### 5.2 Special hazards arising from the substance or mixture

Vapors may form explosive mixture with air. Flash back possible over considerable distance.

### 5.3 Advice for firefighters

Wear self-contained breathing apparatus and protective suit.

### 5.4 Further information

Standard procedure for chemical fires. Take measures to prevent electrostatic charging. Prevent firefighting water from entering surface water or groundwater.

## SECTION 6: Accidental release measures

### 6.1 Personal precautions, protective equipment and emergency procedures

Evacuate personnel to safe areas. Do not breathe vapors or spray mist. Remove all sources of ignition. Wear a positive-pressure supplied-air respirator, flame retardant antistatic protective clothing. Shut off leaks if without risk. Keep people away from and upwind of spill/leak.

### 6.2 Environmental precautions

Contain or absorb leaking liquid with sand or earth, consults an expert. Prevent liquid entering sewers, basements and workpits. If substance has entered a water course or sewer or contaminated soil, advise police.

**6.3 Methods and materials for containment and cleaning up**

Spillage: May react with combustible substances creating fire or explosion hazard and formation of toxic fumes. Take necessary action to avoid static electricity discharge (which might cause ignition of organic vapors). Soak up with inert absorbent material (e.g. sand, silica gel). Prevent liquid entering sewers, basements and workpits; vapor may create explosive atmosphere. Transfer to covered steel drums. Dispose of promptly.

**6.4 Reference to other sections**

For disposal see **Section 13**.

**SECTION 7: Handling and storage****7.1 Precautions for safe handling**

Keep container tightly closed. Take necessary action to avoid static electricity discharge (which might cause ignition of organic vapors). Use only in area provided with appropriate exhaust ventilation. Do not breathe vapors or spray mist. Avoid contact with skin, eyes and clothing. Do not empty into drains.

**7.2 Conditions for safe storage, including any incompatibilities**

Keep tightly closed at room temperature in a dry, cool and well-ventilated place. Keep away from heat and sources of ignition. Keep out of direct sunlight and away from incompatible materials. Store in original container. Electrical equipment should be protected to the appropriate standard.

**7.3 Specific end use(s)**

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated.

**SECTION 8: Exposure controls/personal protection****8.1 Control parameters****Derived No Effect Level (DNEL)**

Application Area	Health Effects	Exposure	Value
Worker	Long-term Systemic effects	Inhalation	600 mg/m <sup>3</sup>
Worker	Long-term Systemic effects	Skin contact	1161 mg/kg Body weight
Consumer	Long-term Systemic effects	Inhalation	106 mg/m <sup>3</sup>
Consumer	Long-term Systemic effects	Ingestion	31 mg/kg Body weight
Consumer	Long-term Systemic effects	Skin contact	412 mg/kg Body weight

**Predicted No Effect Concentration (PNEC)**

Compartment	Value
Fresh water	55.8 mg/l
Fresh water sediment	284.74 mg/kg
Marine water	55.8 mg/l
Marine sediment	287.7 mg/kg
Soil	22.5 mg/kg

**8.2 Exposure controls****Appropriate engineering controls**

The product should only be used in areas from which all naked lights and other sources of ignition have been excluded. Ventilation hoods and fans required when working with organic solvents or in hot melt applications.

**Individual protection measures (Personal protective equipment, PPE)****Eye/face protection**

Goggles giving complete protection to eyes.

**Skin protection**

Chemical resistant apron / flame retardant antistatic protective clothing, heavy duty work shoes.

Handle with gloves

- Splash contact wears gloves from butyl rubber material.

The select protective gloves have to satisfy the specifications of EU Directive 89/686 EEC and standard EN 374 derived from it.

#### Respiratory protection

In case of insufficient ventilation, wear suitable respiratory equipment. Required when vapor/aerosols are generated filter A (EN141 or EN14387).

#### Environmental exposure controls

Prevent liquid entering sewers, basements and workpits

## SECTION 9: Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

Appearance: Form	Liquid
: Color	Colorless
Odor	Characteristic
Odor Threshold	Not Available
pH	Neutral at 20°C
Melting point/range	-86 °C
Boiling point/range	79.6 °C at 1013 hPa
Flash point	-4 °C (closed cup)
Evaporation rate	Not Available
Flammability (solid, gas)	Not Available
Explosion limits: lower	1.8 %(V)
upper	11.5 %(V)
Vapor Pressure	105 hPa at 20°C
Relative vapor density	2.48
Density	0.805 g/ml at 20°C
Water solubility	292 g/l at 20°C
Partition coefficient (n-octanol/water)	log Pow: 0.29
Auto-Ignition temperature	514 °C
Decomposition Temperature	Not Available
Viscosity	0.40 mPa.s at 20°C
Explosive properties	Not Explosive
Oxidizing properties	The substance or mixture is not classified as oxidizing.

## SECTION 10: Stability and reactivity

### 10.1 Reactivity

Highly flammable. Sensitivity to light and sensitive to air. Explosible with air in a vaporous/gaseous state.

### 10.2 Chemical stability

Stable under recommended storage conditions.

### 10.3 Possibility of hazardous reactions

Risk of explosion in contact with hydrogen peroxide / nitric acid, hydrogen peroxide / sulphuric acid.

The substance can react dangerously with oxidizing agents, chloroform / alkali, chromium trioxide (CrO<sub>3</sub>).

The substance forms an explosive mixture with air.

### 10.4 Conditions to avoid

Heat, flames and sparks.

### 10.5 Incompatible materials

Oxidizing agent, CrO<sub>3</sub>, hydrogen peroxide/nitric acid, conc. or sulfuric acid, chloroform/ alkali.

### 10.6 Hazardous decomposition products

Peroxide. Carbon monoxide, Carbon dioxides (Hazardous decomposition products from under fire condition).

## SECTION 11: Toxicological information

### 11.1 Information on toxicological effects

#### Acute toxicity

LD<sub>50</sub> (oral, rat): >2600 mg/kg.

LD<sub>50</sub> (dermal, rabbit): >8000 mg/kg.

#### Acute oral toxicity

Symptoms: nausea and vomiting.

#### Acute inhalation toxicity

Absorption: mucosal irritations.

#### Skin corrosion/irritation

Irritations: drying out effect resulting in rough and chapped skin.

#### Serious eye damage/eye irritation

Irritations.

#### Respiratory or skin sensitization

Sensitization test (guinea pig): No sensitizing effect.

#### Germ cell mutagenicity

Bacterial mutagenicity; Ames test is negative.

#### Carcinogenicity

Not Available

#### Reproductive toxicity

Not Available

#### Teratogenicity

Not Available

#### Specific target organ toxicity (STOT) - single exposure

May cause drowsiness or dizziness.

#### Specific target organ toxicity (STOT) - repeated exposure

Not Available

#### Aspiration hazard

Not Available

#### Further information

After accidental swallowing the substance may pose a risk of aspiration. Passage into the lung (vomiting) can result in a condition resembling pneumonia (chemical pneumonitis).

After absorption of large quantities: CNS disorders, drowsiness, dizziness, inebriation, drop in blood pressure, narcosis. Causes impaired function of respiratory tract, heart.

The product should be handled with the care usual when dealing with chemicals.

## SECTION 12: Ecological information

### 12.1 Toxicity

Toxicity to fish	LC <sub>50</sub> P.promeles : 3220 mg/l/96h.
Toxicity to daphnia and other aquatic invertebrates	EC <sub>50</sub> Daphnia magna : 5091 mg/l/48h.
Toxicity to algae	IC <sub>5</sub> Sc.quadricauda : ≥ 4300 mg/l/7d.
Toxicity to bacteria	EC <sub>5</sub> Ps. Putida: 1150 mg/l/16h.

### 12.2 Persistence and degradability

Biodegradability	Readily biodegradable.
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### 12.3 Bioaccumulative potential

Partition coefficient (n-octanol/water)	log Pow: 0.29
	No bioaccumulation is to be expected (log P o/w <1)

### 12.4 Mobility in soil

Not Available

### 12.5 Other adverse effects

Do not allow to enter waters, waste water or soil.

## SECTION 13: Disposal considerations

### 13.1 Waste treatment methods

#### Product

There are no uniform EC Regulations for the disposal of chemicals or residues. Chemical residues generally count as special waste. The disposal of the latter is regulated in the EC member countries through corresponding law and regulations. We recommend that you contact either the authorities in charge or approved waste disposal companies which will advise you on how to dispose of special waste or burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Observe all federal, state, and local environmental regulations.

#### Contaminated packaging

Disposal in compliance with official regulations. Handle contaminated packaging as hazardous waste in the same way of the substance itself. If not officially specified differently, non-contaminated packaging may be treated like household waste or recycled.

## SECTION 14: Transport information

### Land Transport (ADR/RID)

UN Number	1193
UN proper shipping name	METHYL ETHYL KETONE
Transport hazard class(es)	3
Packaging group	II
Environmental hazards	No
Special precautions for user	Yes

### Sea transport (IMDG)

UN Number	1193
UN proper shipping name	METHYL ETHYL KETONE
Transport hazard class(es)	3
Packaging group	II
Marine pollutant	No
Special precautions for user	Yes
EmS	F-E S-D

**Air transport (IATA)**

UN Number	1193
UN proper shipping name	METHYL ETHYL KETONE
Transport hazard class(es)	3
Packaging group	II
Environmental hazards	No
Special precautions for user	No

**River transport (AND/ADNR)**

(Not examined)

**SECTION 15: Regulatory information**

This safety datasheet complies with the requirements of Globally Harmonized System of Classification and Labelling of Chemicals (GHS)

**15.1 Safety, health and environmental regulations/legislation specific for the substance or Mixture**

Not Available

**15.2 Chemical Safety Assessment**

For this product a chemical safety assessment was not carried out.

**SECTION 16: Other information****Full text of H-Statements referred to under sections 2 and 3**

H225	Highly flammable liquid and vapour.
H319	Causes serious eye irritation.
H336	May cause drowsiness or dizziness.
EUH066	Repeated exposure may cause skin dryness or cracking.

**Full text of R-phrases referred to under sections 2 and 3**

F	Highly flammable
Xi	Irritant
R11	Highly flammable.
R36	Irritating to eyes.
R66	Repeated exposure may cause skin dryness or cracking.
R67	Vapours may cause drowsiness and dizziness.

**Recommended restrictions**

Take notice of labels and safety data sheets for the working. Chemicals Take necessary action to avoid static electricity discharge.

**Reference**

Globally Harmonized System of Classification and Labelling of Chemicals (GHS).

Labelling according to EC Directives 67/548 EEC and Regulation (EC) No 1272/2008.

Transportation information according to Recommendations on the Transport of Dangerous Goods, Model Regulations. Twelfth revised edition. United Nations.

Institute for Occupational Safety and Health of the German Social Accident Insurance in Sankt Augustin/Germany,

Source: IFA for Databases on hazardous substances (GESTIS).

**Further information**

Contact to RCI Labscan Limited.



**Revision Date**

01/05/2015

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The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process unless specified in the text.