

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

**1.1 Product identifier**

Product name	METHYL-t-BUTYL ETHER
CAS-No.	1634-04-4
Product code	AR1125, CG1125, GP1125, LC1125, RP1125

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

Identified uses	Chemical for analysis and production.
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**1.3 Details of the supplier of the safety data sheet**

Company	Chem-Supply Pty Ltd 38 - 50 Bedford Street, Gillman SA 5013 Australia
Telephone number	(08) 8440 2000
Fax number	(08) 8440 2001

**1.4 Emergency Telephone Number**

Emergency phone	
Monday - Friday 8:30am - 5:00pm ACST	(08) 8440 2000
After hours: CHEMCALL	1800127406 / +6449179888

**1.5 Manufacturer**

Company	RCI LABSCAN LIMITED. 24 Rama 1 Road, Pathumwan, Bangkok 10330 Thailand
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**SECTION 2: Hazards identification**

**2.1 Classification of the substance or mixture**

**Classification according to WHS Regulations (Australia)**

Flammable liquids (Category 2), H225  
Skin irritation (Category 2), H315  
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	R38

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

**2.2 Label elements**

Pictogram



Signal word

Danger

Hazard statement(s)

H225	Highly flammable liquid and vapour.
H315	Causes skin irritation.

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.
P264	Wash hand thoroughly after handling.
P280	Wear protective gloves/eye protection/face protection.
P302 + P352	IF ON SKIN: Wash with plenty of soap and water.
P303 + P361 + P353	IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
P332 + P313	If skin irritation occurs: Get medical advice/attention.
P362	Take off contaminated clothing and wash before reuse.
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.

### 2.3 Other hazards

None

## SECTION 3: Composition/information on ingredients

### 3.1 Substances

Synonyms tert-Butyl methyl ether, 1, 1-Dimethylethyl methyl ether, 2-Methoxy-2-methylpropane, Methyl-1,1-dimethylethyl ether, tert-Butoxymethane, 2-Methyl-2-methoxypropane, MtBE, 2-Methyl butane-2-ol.

CAS-No	EC-No	EC-Index-No	Formula	Molecular Weight	Weight %
1634-04-4	216-653-1	603-181-00-X	(CH <sub>3</sub> ) <sub>3</sub> COCH <sub>3</sub>	88.15 g/mol	>99

### Hazardous ingredients according to WHS Regulations (Australia)

Component	Concentration	Classification
<b>Methyl-t-butyl ether</b>		
CAS-No 1634-04-4 EC-No 216-653-1 EC-Index-No 603-181-00-X	>99%	Flammable liquids (Category 2), H225 Skin irritation (Category 2), H315

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

Component	Concentration	Classification
<b>Methyl-t-butyl ether</b>		
CAS-No 1634-04-4 EC-No 216-653-1 EC-Index-No 603-181-00-X	>99%	F, Highly flammable, R11 Xi, Irritant, R38

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. If signs of poisoning appear, treat as for inhalation. Obtain medical attention. 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

After swallowing: caution if victim vomits. Risk of aspiration. Keep airways free.

## 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 Hazchem Code

3YE

### 5.5 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. 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

#### Exposure limit (Safe Work Australia)

TWA: 25 ppm (92 mg/m<sup>3</sup>)  
 STEL: 75 ppm (275 mg/m<sup>3</sup>)

### 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 nitrile 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 AX (EN 371).

##### 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
Odour	Characteristic
Odour Threshold	Not Available
pH	Not Available
Melting point/range	-108.6 °C

Boiling point/range	55.3 °C at 1013 hPa
Flash point	-28 °C (closed cup)
Evaporation rate	Not Available
Flammability (solid, gas)	Not Available
Explosion limits: lower	1.5 % (V)
upper	8.5 % (V)
Vapor Pressure	268 hPa at 20°C
Relative Vapor Density	2.60
Density	0.740 g/ml at 20°C
Water solubility	42 g/l at 20°C
Partition coefficient (n-octanol/water)	log Pow: 1.06
Auto-Ignition temperature	460 °C
Decomposition Temperature	Not Available
Viscosity	0.36 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 inflammable. Light-sensitive. Explosible with air in a vaporous/gaseous state.

### 10.2 Chemical stability

Stable under recommended storage conditions.

### 10.3 Possibility of hazardous reactions

The substance can react dangerously with oxidizing agent, strong acids, halogens, strong bases.

The substance forms an explosive mixture with air.

### 10.4 Conditions to avoid

Heat, flames and sparks.

### 10.5 Incompatible materials

Oxidizing agent, strong acids, halogens, strong bases.

Unsuitable working material is various plastics, rubber.

### 10.6 Hazardous decomposition products

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

## SECTION 11: Toxicological information

### 11.1 Information on toxicological effects

#### Acute toxicity

LC<sub>50</sub> (inhalation, rat): 85 mg/l /4h.

LD<sub>50</sub> (oral, rat): > 2000 mg/kg.

LD<sub>50</sub> (dermal, rabbit): 2000 mg/kg.

#### Acute oral toxicity

Absorption

Symptoms : nausea and vomiting. Aspiration may cause pulmonary oedema and pneumonitis.

#### Acute inhalation toxicity

Absorption

Symptoms: mucosal irritations, irritation symptoms in the respiratory tract. In high concentrations: unconsciousness.

**Skin corrosion/irritation**

Slight irritations. Danger of skin absorption. Drying out effect resulting in rough and chapped skin.

**Serious eye damage/eye irritation**

Not Available

**Respiratory or skin sensitization**

Sensitization test (Magnusson and Kligman): No sensitizing effect.

**Germ cell mutagenicity**

Bacterial mutagenicity: Salmonella typhimurium: negative.

Mutagenicity (mammal cell test): micronucleus negative.

**Carcinogenicity**

Not Available

**Reproductive toxicity**

Not Available

**Teratogenicity**

Not Available

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

Not Available

**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: drowsiness, dizziness, euphoria, excitation, spasms in certain circumstances narcosis.

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.promelas : 672 mg/l /96h.
Toxicity to daphnia and other aquatic invertebrates	EC <sub>50</sub> Daphnia magna: 651 mg/l /48h.
Toxicity to algae	IC <sub>50</sub> Desmodesmus subspicatus : >800 mg/l /72h.
Toxicity to bacteria	EC <sub>10</sub> Ps. Putida : 700 mg/l /18h.

**12.2 Persistence and degradability**

Biodegradability 2% /28 d, Not readily biodegradable.

**12.3 Bioaccumulative potential**

Partition coefficient (n-octanol/water) log Pow: 1.06 (experimental).  
No bioaccumulation is to be expected (log P o/w 1-3)

**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 (ADG Code)**

UN Number	2398
UN proper shipping name	METHYL tert-BUTYL ETHER
Transport hazard class(es)	3
Hazchem Code	3YE
Packing group	II
Environmental hazards	No
Special precautions for user	Yes

**Sea transport (IMDG)**

UN Number	2398
UN proper shipping name	METHYL tert-BUTYL ETHER
Transport hazard class(es)	3
Packing group	II
Marine pollutant	No
Special precautions for user	Yes
EmS	F-E S-D

**Air transport (IATA)**

UN Number	2398
UN proper shipping name	METHYL tert-BUTYL ETHER
Transport hazard class(es)	3
Packing 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**

<b>Regulatory Information</b>	Listed in the Australian Inventory of Chemical Substances (AICS).
<b>Poisons Schedule</b>	None scheduled

**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.
H315	Causes skin irritation.

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

F	Highly flammable
Xi	Irritant
R11	Highly flammable.
R38	Irritating to skin.

**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 Chem – Supply Pty Ltd Ph. (08) 8440 2000.

**Revision Date**

22/02/2018

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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.