

Date of Issue/re-issue: 18/03/2019

Expiry: 01/04/2024

1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

Company Name **ECP Limited**
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| | | |
|---|--------------------|--------------------|
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|---|--------------------|--------------------|

| | | | | | | |
|----------------|---------------------|-------------|--------------------|------------------------|------------------|------------------------------|
| Product | 2-Methyl-2-Propanol | | | | Code | 3350 |
| CAS# | HSNO# | UN # | DG Class/es | Packing group # | Tracking? | Handlers Certificate? |
| 75-65-0 | HSR001097 | 1212 | 3 | III | No | No |

Recommended use: Laboratory Investigations

2. Hazards identification

2.1 GHS Classification

- Flammable Liquids (Category C)
- Acute toxicity, Oral (Category E)
- Acute toxicity, Inhalation (Category E)
- Acute toxicity, Dermal (Category E)
- Skin irritation (Category A)
- Serious eye damage (Category A)
- Aquatic toxicity (Acute or Chronic) (Category D)

2.2 GHS Label elements, including precautionary statements



Pictogram Signal word **Danger**

Hazard statement(s)

- H226 Flammable liquid and vapour.
- H303 May be harmful if swallowed.
- H313 May be harmful in contact with skin.
- H315 Causes skin irritation.
- H318 Causes serious eye damage.
- H333 May be harmful if inhaled.
- H401 Toxic to aquatic life.

Precautionary statement(s)

Prevention

- 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 skin thoroughly after handling.
- P273 Avoid release to the environment.
- P280 Wear protective gloves/protective clothing/eye protection/face protection.

Response

- P303 + P361 + P353 IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.

P304 + P312 IF INHALED: Call a POISON CENTER or doctor/physician if you feel unwell.
 P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
 P310 Immediately call a POISON CENTER or doctor/physician.
 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 dry sand, dry chemical or alcohol-resistant foam for extinction.

Storage

P403 + P235 Store in a well-ventilated place. Keep cool.

Disposal

P501 Dispose of contents/container to an approved waste disposal plant.

2.3 Other hazards

None

3. Composition/information on ingredients

3.1 Substances

Synonyms:

Trimethyl carbinol

tert-Butanol

tert-Butyl alcohol

Isobutyl alcohol

Formula: C₄H₁₀O

Molecular weight: 74.12 g/mol

| Component | | Concentration |
|--------------------|---------|---------------|
| Tert-Butyl alcohol | | |
| CAS No. | 75-65-0 | <= 100% |

4. First aid measures

4.1 Description of first aid measures

General advice

Consult a physician. Show this safety data sheet to the doctor in attendance.

If inhaled

If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact

Wash off with soap and plenty of water. Consult a physician.

In case of eye contact

Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

If swallowed

Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

4.2 Most important symptoms and effects, both acute and delayed

Drying, cracking of the skin, skin irritation.

4.3 Indication of any immediate medical attention and special treatment needed

No data available

5. Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media

Dry powder, dry sand.

Unsuitable extinguishing media

Do NOT use water jet.

5.2 Special hazards arising from the substance or mixture

Carbon oxides

5.3 Advice for firefighters

Wear self-contained breathing apparatus for firefighting if necessary.

5.4 Further information

In case of fire: Evacuate area. Fight fire remotely due to the risk of explosion. Use water spray to cool unopened containers.

6. Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas.

6.2 Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

6.3 Methods and materials for containment and cleaning up

Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal.

7. Handling and storage

7.1 Precautions for safe handling

Avoid contact with skin and eyes. Avoid inhalation of vapour or mist. Keep away from sources of ignition - No smoking. Take measures to prevent the build-up of electrostatic charge.

7.2 Conditions for safe storage, including any incompatibilities

Store in cool place. Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

7.3 Specific end use(s)

No data available

8. Exposure controls/personal protection

8.1 Control parameters

Occupational Exposure Limits Table

| Component | CAS No | Value | Control parameters | Basis |
|--------------------|---------|---------|----------------------------------|--|
| Tert-Butyl alcohol | 75-65-0 | WES-TWA | 100 ppm 303 mg/m ³ | New Zealand. Workplace Exposure Standards for Atmospheric Contaminants |

8.2 Exposure controls

Appropriate engineering controls

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

Personal protective equipment

Eye/face protection

Tightly fitting safety goggles. Faceshield (8-inch minimum). Use equipment for eye protection tested and approved under appropriate government standards.

Skin protection

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices.

Wash and dry hands

Splash contact

Material: Nitrile rubber

Minimum layer thickness: 0.2 mm

Break through time: 30 min

Body Protection

Complete suit protecting against chemicals, Flame retardant antistatic protective clothing. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection

Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards.

9. Physical and chemical properties

9.1 Information on basic physical and chemical properties

a) Appearance

Form: liquid

Colour: colourless, clear

b) Odour

alcohol-like

c) Melting point/freezing point

Melting point/range: -108 °C - lit.

d) Initial boiling point and boiling range

108 °C - lit.

e) Flash point

28 °C - closed cup

f) Evaporation rate

0.6

g) Upper/lower flammability or explosive limits

Upper explosion limit: 10.6 %(V)

Lower explosion limit: 1.7 %(V)

h) Vapour pressure

8 hPa at 20 °C

i) Vapour density

2.55

j) Relative density

0.803 g/cm³ at 25 °C

k) Water solubility

70 g/l at 20 °C - OECD Test Guideline 105 - completely miscible

l) Partition coefficient: n-octanol/water

log Pow: 1 at 25 °C

m) Auto-ignition temperature

427 °C

m) Viscosity

4.00 mm²/s at 20 °C -

10. Stability and reactivity

10.1 Conditions to avoid

Heat, flames and sparks.

10.2 Incompatible materials

Strong oxidizing agents, Acid chlorides, Acid anhydrides Strong oxidizing agents, Acid chlorides, Acid anhydrides

11. Toxicological information

11.1 Information on toxicological effects

Acute toxicity

LD50 Oral - Rat - female - 3,350 mg/kg

LC50 Inhalation - Rat - male and female - 4 h - 24.6 mg/l

LD50 Dermal - Rabbit - female - 2,460 mg/kg

LD50 Intraperitoneal - Rat - 720 mg/kg

Skin corrosion/irritation

Skin - Rabbit - Irritating to skin. - 24 h

Serious eye damage/eye irritation

Eyes - Rabbit - Risk of serious damage to eyes. - 24 h - OECD Test Guideline 405

Respiratory or skin sensitisation

No data available

Germ cell mutagenicity

Genotoxicity in vitro - Hamster - fibroblast - with and without metabolic activation - negative

Genotoxicity in vivo - Mouse - male and female - Oral - negative

Carcinogenicity

Carcinogenicity - Rat - Oral Tumorigenic: Equivocal tumorigenic agent by RTECS criteria. Skin and Appendages: Other: Tumours. Leukaemia

Carcinogenicity - Rat - Subcutaneous Tumorigenic: Carcinogenic by RTECS criteria. Gastrointestinal: Tumours. Liver: Tumours.

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

Reproductive toxicity

Reproductive toxicity - Rat - male and female - inhalation (vapour)

No significant adverse effects were reported

Specific target organ toxicity - single exposure

May cause respiratory irritation. - Respiratory Tract

May cause drowsiness or dizziness. - Central nervous system

Specific target organ toxicity - repeated exposure

No data available

Aspiration hazard

No data available

Potential health effects

Inhalation

May be harmful if inhaled. Causes respiratory tract irritation. Vapours may cause drowsiness and dizziness.

Ingestion

May be harmful if swallowed.

Skin

May be harmful if absorbed through skin. Causes skin irritation.

Eyes

Causes eye burns.

Signs and Symptoms of Exposure

Cough, shortness of breath, headache, nausea, vomiting, central nervous system depression.

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Additional Information

Repeated dose toxicity - Rat - male and female - inhalation (vapour)
RTECS: NP9625000

12. Ecological information

12.1 Toxicity

Toxicity to fish flow-through test

LC50 - Pimephales promelas (fathead minnow) - 1,430 mg/l - 96 h

Toxicity to daphnia and other aquatic invertebrates

static test EC50 - Daphnia pulex (Water flea) - 1,100 mg/l - 48 h

Toxicity to algae static test

EC50 - Pseudokirchneriella subcapitata - 1,799 mg/l - 72 h

Method: OECD Test Guideline 201

Toxicity to bacteria

Growth inhibition

IC50 - Sludge Treatment - > 1,000 mg/l - 16 h

12.2 Persistence and degradability

Biodegradability aerobic - Exposure time 28 d

Result: 70 - 80 % - Readily biodegradable

Method: OECD Test Guideline 301D

13. Disposal considerations

13.1 Waste treatment methods

Product

Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Offer surplus and non-recyclable solutions to a licensed disposal company.

Contaminated packaging

Dispose of as unused product.

14. Transport Information Table

| | | ADR/RID – European packaging certification | IMDG International Maritime Dangerous Goods Code | IATA – DGR International Air Travel Association – Dangerous Goods Regulations |
|-------------|---|---|---|--|
| 14.1 | UN Number | 1212 | 1212 | 1212 |
| 14.2 | UN Proper Shipping name | ISOBUTANOL | ISOBUTANOL | Isobutanol |
| 14.3 | Transport Hazard Class | 3 | 3 | 3 |
| 14.4 | Packaging group | III | III | III |
| 14.5 | Environmental Hazards | No | No | No |
| 14.6 | Special precautions for user | No data available | | |

15. Regulatory information

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

National regulatory information

HSNO Approval Code: HSR001097

HSNO Group Standard Approval: HSR002596 - Laboratory Chemicals and Reagent Kits Group
Standard 2006

Tracking Required: not required
Approved Handler Cert.: not required

16. Disclaimer

The information above is believed to be accurate and represents the best information currently available to us. However, the information is not a guarantee expressed or implied, with respect to such information, and we assume no liability resulting from its use. Anyone using the chemical described here should ensure that he or she has the appropriate training and has the expertise and any equipment required for safe handling. If clarification or further information is required, please contact ECP Ltd or refer to the official handler of dangerous goods within your own company. The user should also make their own investigations to determine the suitability of the product for their particular purposes. In no event shall the company be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential, or exemplary damages howsoever arising, even if the company has been advised of the possibility of such damages.

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