SAFETY DATA SHEET

METHYLATED SPIRITS

Infosafe No.: 7EFB5
ISSUED Date : 06/12/2016
ISSUED by: JASOL AUSTRALIA

CLASSIFIED AS HAZARDOUS

1. IDENTIFICATION

GHS Product Identifier
METHYLATED SPIRITS

Product Code
2991240

Company Name
JASOL AUSTRALIA

Address
Level 3, 187 Todd Road PORT MELBOURNE
VIC AUSTRALIA

Telephone/Fax Number
Tel: 1800 334 679
Fax: 03 9580 9902

Emergency phone number
1800 629 953

Recommended use of the chemical and restrictions on use
Denatured ethanol, 95 % vol/vol.

2. HAZARD IDENTIFICATION

GHS classification of the substance/mixture
Classified as Hazardous according to the Globally Harmonised System of Classification and Labelling of Chemicals (GHS) including Work, Health and Safety Regulations, Australia.
Classified as Dangerous Goods according to the Australian Code for the Transport of Dangerous Goods by Road and Rail. (7th edition)
Acute Toxicity - Oral: Category 5
Flammable Liquids: Category 2
Hazardous to the Aquatic Environment - Acute Hazard: Category 2

Signal Word (s)
DANGER

Hazard Statement (s)
AUH001 Explosive when dry.
H225 Highly flammable liquid and vapour.
H401 Toxic to aquatic life.

Pictogram (s)
Flame

Precautionary statement – 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.
P273 Avoid release to the environment.
P280 Wear protective gloves/protective clothing/eye protection/face protection.

Precautionary statement – Response
P303+P361+P353 IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
P370+P378 In case of fire: Use for extinction.

Precautionary statement – Storage
P403+P235 Store in a well-ventilated place. Keep cool.

Precautionary statement – Disposal
P501 Dispose of contents/container to in accordance with local/regional/national/international regulations.

Other Information
LD 50 : Ethanol 7,060 mg/kg oral, rat
LDLo : Ethanol 1,400 mg/kg oral, human
LC 50 : Ethanol 20,000 ppm/10 hours, rat
LCLo : Ethanol 21,900 ppm, guinea pig

3. COMPOSITION/INFORMATION ON INGREDIENTS

Ingredients

Name	CAS	Proportion
Isopropyl alcohol	67- 63- 0	5 %
Ethanol	64- 17- 5	95 %

4. FIRST-AID MEASURES

First Aid Measures
If there are signs of drunkenness (intoxication or inebriation) then serious health effects may following (depending on the amount swallowed or inhaled).
Immediate medical attention should be sought and the affected person transferred and accompanied to the care of a doctor or hospital. Treat unconsciousness by placing the person in the coma position. Apply artificial respiration if breathing stops.

Inhalation
Remove promptly to fresh air. If there are signs of drunkenness (intoxication or inebriation) or respiratory irritation, dizziness, nausea or headache occurs, seek immediate medical attention.
Treat unconsciousness by placing the person in the coma position. Apply artificial respiration if breathing stops.

Ingestion
If a minor amount has been swallowed, dilute stomach contents by giving large amounts of water. Do not attempt to induce vomiting or give anything by mouth to an unconscious person. Seek medical attention.

Skin
Immediately remove contaminated clothing. Wash skins with water. Launder contaminated clothing before re-use.

Eye contact
Flush eye with running water for a minimum of 15 minutes. Seek medical attention promptly if irritation persists or any loss of vision occurs.

First Aid Facilities
Safety showers, eye wash stations and First Aid kits.

Advice to Doctor
Treat as for excess consumption of alcoholic drink. Supportive, hospital or even intensive care may be required. Advice on emergency

treatment of alcohol poisoning (ethyl alcohol, ethanol) is to be found in standard texts on Emergency Medicine.

Most important symptoms/effects, acute and delayed

No adverse health effects expected if the product is handled in accordance with this SDS and the product label.

5. FIRE-FIGHTING MEASURES

Fire Fighting Measures

Solution contains ethanol and isopropanol which are highly flammable liquids. They may give off flammable vapours and may form flammable mixtures with air (refer to flammability limits in Section 9). Burns with a colourless flame. The vapour is heavier than air and may travel along the ground; Distant ignition and flash back are possible.

Run off to sewers and drains may cause explosions. Isolate for at least 800 metres in all directions if tanks or tankers are involved. The use of compressed air for filling, discharging, mixing or handling is prohibited due to the vapour hazard.

All vessels must be earthed to avoid generation of static charges when agitating or transferring solvents. Avoid all ignition sources. Intrinsically safe equipment is necessary in areas where this chemical is being used.

Suitable Extinguishing Media

Alcohol resistant foam is desired. If not available use water based, dry chemical or carbon dioxide fire extinguishers.

Hazards from Combustion Products

Burning can produce carbon monoxide and/or carbon dioxide.

Specific Methods

Solutions may give off flammable vapours.

Use water to cool exposed containers. Heating can cause expansion or decomposition leading to violent rupture of containers.

If safe to do so, remove containers from path of fire. Spills and leaks may be washed away with copious volumes of water, fog or spray.

For major fires or where the atmosphere is either oxygen deficient or contains unacceptable levels of combustion products, firefighters must wear full fire kit and breathing apparatus.

Specific Hazards Arising From The Chemical

Burns with a colourless flame. The vapour is heavier than air and may travel along the ground ; distant ignition is possible. The use of compressed air for filling, discharging, mixing or handling is not recommended due to vapour hazard All vessels must be earthed to avoid generation of static charges when agitating or transferring solvents. Containers previously holding ethanol products must be degassed before entry or subjected to sources of ignition. Hazardous polymerisation will not occur. Incompatible with oxidising agents, aluminium containers should be avoided as aluminium alcoholates may be formed under certain conditions.

Hazchem Code

2YE

Other Information

Prevent spillages from entering natural waters.

6. ACCIDENTAL RELEASE MEASURES

Emergency Procedures

In the event of a spill eliminate all sources of ignition and take measures to prevent static discharge. No smoking. Use water spray to disperse vapour.

Clear area of all personnel not directly involved in the clean up.

All personnel involved in the containment and disposal procedures to wear protective equipment as described in Section 8 to prevent skin and eye contamination and inhalation of vapours.

Ventilate area well and ensure the atmosphere is safe before personnel return to the work area.

Methods And Materials For Containment And Cleaning Up

Stop and contain the spill for salvage or absorb in inert absorbent material (e.g. Soil, sand, vermiculite) for disposal by an approved method. Prevent run-off into drains and waterways.

If contamination of sewers or waterways has occurred, advise the local emergency services.

Spills & Disposal

Wash the cleaned-up area with copious volumes of water to remove any trace amounts of product. Spills can be converted to non-flammable mixtures by dilution with water.

Non-returnable containers should be de-gassed prior to disposal. Dispose of all waste containers and used drums in accordance with local authority guidelines.

7. HANDLING AND STORAGE

Handling and storage

Use in well ventilated areas away from all ignition sources. Intrinsically safe equipment only must be used in areas where this chemical is being used.

The use of compressed air for filling, discharging, mixing or handling is prohibited due to the vapour hazard. Containers must be earthed to avoid generation of static charges when agitating or transferring product.

Aqueous solutions containing not more than 24% Ethanol by volume are excdluded from Class 3 and are not subject to the provisions of the ADG Code (refer to ADG Code Special Provision 144).

Solutions contain Ethanol and Isopropanol which are highly flammable. They may give off flammable vapours and may form flammable mixtures with air (refer to flammability limits in Section 9).

Conditions for safe storage, including any incompatibilities

Store in tightly closed containers in cool, dry, isolated and well-ventilated areas away from heat, sources of ignition and incompatibles (see below). Store away from oxidizing agents. Keep containers closed at all times - check regularly for leaks.

Do not eat, drink or smoke in areas of use or storage. Observe State Regulations concerning the storage and handling of < 24% Ethanol Solutions. Store with all precautions required for handling flammable liquids.

The requirement of Australian Standard AS 1940 should be observed in addition to AS 1020, AS 1076, AS 2380 and AS 3000.

Empty containers retain residue (liquid and/or vapour) and are dangerous. Do not pressure cut, weld, braze, solder, drill, grind or expose such containers to heat, flame, sparks, static electricity, or other sources of ignition.

Unsuitable Materials

Not to be stored with explosives (Class 1), flammable gases in bulk (Class 2.1), poisonous gases (Class 2.3), spontaneously combustible substances (Class 4.2), oxidizing agents (Class 5.1), organic peroxides (Class 5.2), radioactive substances (Class 7).

Exemptions may apply.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Occupational exposure limit values

National Occupational Exposure Standard (NES), Safe Work Australia (formerly ASCC/NOHSC).

Ethanol:

TWA - 1000 ppm (1880 mg/m3)

Isopropanol:

TWA - 400 ppm (983 mg/m3)

STEL - 500 ppm (1230 mg/m3)

Other Exposure Information

All occupational exposures to atmospheric contaminants should be kept to as low a level as is workable (practicable) and in all cases to below the National Standard.

These exposure standards are guides to be used in the control of occupational health hazards. These exposure standards should not be used as fine dividing lines between safe and dangerous concentrations of chemicals. They are not a measure of relative toxicity.

TWA (Time Weighted Average): the time-weighted average airborne concentration over an eight-hour working day, for a five-day working week over an entire working life. According to current knowledge this concentration should neither impair the health of, nor cause undue discomfort to, nearly all workers.

STEL (Short-Term Exposure Limit): the average airborne concentration over a 15-minute period which should not be exceeded at any time during a normal eight-hour work day.

Appropriate Engineering Controls

Ventilation:

Local exhaust ventilation and/or mechanical (general) exhaust is recommended where vapours are likely to be generated. All such equipment must be intrinsically safe.

Special Consideration for Repair &/or Maintenance of Contaminated Equipment:

Empty containers retain residue (liquid and/or vapour) and are dangerous. Do not pressure cut, weld, braze, solder, drill, grind or expose such containers to heat, flame, sparks, static electricity, or other sources of ignition. Vapour is heavier than air - prevent concentration in hollows or sumps. Do not enter confined spaces where vapour may have collected. Keep containers closed when not in use.

Personal Protective Equipment

Skin Protection:

Avoid skin contact by the use of approved chemical resistant gloves and aprons - PVC or Neoprene (AS 2161).

Eye Protection:

Avoid eye contact by wearing chemical goggles with side-shields or face-shield (AS/NZS 1336) whenever exposed to vapour or mist or if there is a risk of splashing liquid in the eyes.
Safety showers with eye-wash should be provided in all areas where product is handled.
Respiratory Protection:
None should be needed if engineering, storage and handling controls are adequate to ensure that atmospheric contamination is kept below the National Standard.
Where vapour concentrations are likely to approach or exceed the National Standard, an approved organic vapour respirator (AS/NZS 1715 and 1716) must be worn.
In high vapour concentrations, or in suspected oxygen-deficient atmospheres such as empty vessels or confined spaces, use air-supplied hood.
Thermal Protection:
None should be needed under normal circumstances.
Smoking & Other Dusts:
Smoking must be prohibited in all areas where this product is used. See safety information on flammability above.

Hygiene Measures
Protective clothing (gloves, coveralls, boots, etc.) should be worn to prevent skin contact. Always wash hands before smoking, eating, drinking or using the toilet.
Wash contaminated clothing and other protective equipment before storing or re-using.

9. PHYSICAL AND CHEMICAL PROPERTIES

Form
Liquid

Appearance
Clear, colourless, mobile liquid. Miscible with water in all proportions.

Odour
Characteristic alcohol odour.
Ethanol odour is detectable at 80 - 100 ppm. Isopropanol odour is detectable at 40 - 200 ppm.

Boiling Point
78°C (Ethanol)
82.4°C (Isopropanol)
93°C (~ 10% v/v Ethanol)
88.5°C (~ 20% v/v Ethanol)
87°C (~ 24% v/v Ethanol)

Solubility in Water
Miscible with water in all proportions.

Specific Gravity
0.79

Vapour Pressure
44 mm Hg @ 20°C (Ethanol)
33 mm Hg at 20°C (Isopropanol)

Vapour Density (Air=1)
1.59 (air = 1) (Ethanol)
2.1 (air = 1) (Isopropanol)

Evaporation Rate
253 (n-Butyl Acetate = 100)
230 (n-But6yl Acetate = 100) (Isopropanol)

Flash Point
13°C (Ethanol)
12°C (Isopropanol)

Flammability
Flammable liquid. Vapour/air mixture may be flammable or explosive. Vapour heavier than air, risk of remote ignition. Ethanol flames may not be readily visible.

Auto-Ignition Temperature
392°C (Ethanol)

399°C (Isopropanol)

Flammable Limits - Lower
2-3.5% Ethanol

Flammable Limits - Upper
12-19% Ethanol

Other Information
Absorbs moisture from the air. Reacts with alkali metals, and with aluminium, to form ethanoates. Contact with oxidising agents may cause fire.

10. STABILITY AND REACTIVITY

Reactivity
Stable under normal temperature conditions and recommended use.

Conditions to Avoid
Heat, sparks, flame and build-up of static electricity.

Incompatible materials
Will react with strong oxidizing agents.

Hazardous Decomposition Products
Burning can produce carbon monoxide and/or carbon dioxide.

Hazardous Polymerization
Hazardous polymerisation will not occur.

11. TOXICOLOGICAL INFORMATION

Toxicology Information
LD50/oral/rat: 7060 mg/kg (literature data)
LC50/inhalation/rat: 38 mg/l/10 h (literature data)

Ingestion
Accidental swallowing is unlikely in the industrial setting. Swallowing ethanol can cause drunkenness or harmful central nervous system effects. The deliberate ingestion of ethanol is a known occupational risk.
As little as 50 - 100 ml intake in a shift in a 70kg worker may cause inebriation to the point where safety is impaired. Effects of a small intake may include excitation, euphoria, headache, dizziness, drowsiness, blurred vision, and fatigue.
Drinking a large amount may lead to severe acute intoxication, tremors, convulsions, loss of consciousness, coma, respiratory arrest and death. Aspiration into lungs may cause pneumonitis.

Inhalation
Vapour is moderately irritating to mucous membranes and respiratory tract. Inhalation of the vapour may result in drunkenness (see effects of swallowing above) or headache, nausea, incoordination, narcosis (sleepiness) and vomiting.
Early signs or symptoms may occur at airborne levels of 1000 to 5000 ppm.

Skin
Contact with skin may result in slight irritation and redness.

Eye
Vapours may irritate the eyes. Liquid and mists may severely irritate or damage the eyes.

Chronic Effects
Long term exposure by swallowing or repeated inhalation may cause degenerative changes in the liver, kidneys, gastrointestinal tract and heart muscle.
Prolonged or repeated contact and heavy skin contamination may cause skin drying and cracking and/or dermatitis with redness, itching, and swelling. This may lead to secondary infection.
Ongoing or repeated exposures at high concentrations may cause central nervous system symptoms similar to "Acute: Swallowed" above. Deliberate inhalation of the vapour is a known occupational risk.

Other Information
Nasal and eye irritation may occur at concentrations below the exposure standard. Exposure to ethanol in the work setting adds to any intake from alcoholic drinks and any health effects caused by the total intake of alcohol.
In work areas where exposures in excess of the occupational exposure limits occur, then the following may apply:
- Persons with pre-existing liver impairment, skin and respiratory disorders may be at an increased risk.

- Ethanol may cause adverse reproductive effects.
- Absorption of some drugs may be affected causing adverse health effects.
- Ingestion by pregnant women may cause serious effects in their newborn babies called "foetal alcohol syndrome".

The National Occupational Health & Safety Commission in Australia (NOHSC) does not classify ethanol as a carcinogen.
IARC has evaluated ethanol as a carcinogen on the basis of effects of drinking alcoholic beverages, but there is no known carcinogenic risk from occupational exposures.
There is extensive toxicological and epidemiological information on the health effects of ingesting alcoholic drinks containing ethanol.
Inhalation at levels at or exceeding the Occupational Exposure limits or any deliberate ingestion is known to lead to health effects which may be evident in themselves or lead to impaired functioning and consequent safety risks in the industrial setting.
A blood alcohol level in excess of 0.05g/100ml is regarded as likely to impair functioning for tasks such as operating machinery.

12. ECOLOGICAL INFORMATION

Ecotoxicity
Toxicity to fish (acute): LC50/Golden ide/: >1000 mg/l/48 h
Toxicity to daphnia: ec50/Daphnia magna/: >1000 mg/l/24 h

Persistence and degradability
Degree of elimination: 94%
Evaluation: biodegradable

Mobility
No data available

13. DISPOSAL CONSIDERATIONS

Waste Disposal
Suitable for incineration by approved agent under controlled conditions if permitted by local authorities, otherwise disposal must be in accordance with local waste authority requirements.
Product must be contained and not disposed to sewerage systems, drains or waterways. Advise flammable nature. Empty containers must be decontaminated by rinsing with water.

14. TRANSPORT INFORMATION

Transport Information
This material is a Class 3 - Flammable Liquid according to The Australian Code for the Transport of Dangerous Goods by Road and Rail.
Class 3 - Flammable Liquids are incompatible in a placard load with any of the following:
- Class 1, Explosives
- Class 2.1, Flammable Gases, if both the Class 3 and Class 2.1 dangerous goods are in bulk
- Class 2.3, Toxic Gases
- Class 4.2 Spontaneously Combustible Substances
- Class 5.1 Oxidising Agents and Class 5.2, Organic Peroxides
- Class 6 Toxic Substances (where the flammable liquid is nitromethane)
- Class 7 Radioactive Substances.

U.N. Number
1170

UN proper shipping name
ETHANOL (ETHYL ALCOHOL)

Transport hazard class(es)
3

Packing Group
II

Hazchem Code
2YE

IERG Number
14

15. REGULATORY INFORMATION

Regulatory information
Classified as hazardous according to criteria of GHS.

Poisons Schedule
S5

16. OTHER INFORMATION

Date of preparation or last revision of SDS
December, 2016

Contact Person/Point
The Company has taken care in compiling this information. No liability is accepted whether direct or indirect from its application since the conditions of final use are outside the Company's control. The end user is obliged to conform to relevant government regulations and/or patent laws applicable in their respective States of Countries.
24-Hour Emergency Telephone: AUS: 1800 629 953 NZ: Poisons 0800 764 766,

Signature of Preparer/Data Service
Technical Manager
Tel. (08) 9337 4844

END OF SDS