



SAFETY DATA SHEET
DENATURED ALCOHOL - SMS F6 BLENDS
REVISION 4, DATE 09 DEC 20

1. IDENTIFICATION

Product Name	Denatured Alcohol - SMS F6 Blends
Other Names	Methylated Spirits 100% F6 SMS; Methylated Spirits SMS 95 F6; Methylated Spirits SMS 95 F6 HG
Uses	Various.
Chemical Family	No Data Available
Chemical Formula	C ₂ H ₆ O
Chemical Name	Ethanol, denatured
Product Description	No Data Available

Contact Details of the Supplier of this Safety Data Sheet

Organisation	Location	Telephone
Redox Ltd	2 Swettenham Road Minto NSW 2566 Australia	+61-2-97333000
Redox Ltd	11 Mayo Road Wiri Auckland 2104 New Zealand	+64-9-2506222
Redox Inc.	3960 Paramount Boulevard Suite 107 Lakewood CA 90712 USA	+1-424-675-3200
Redox Chemicals Sdn Bhd	Level 2, No. 8, Jalan Sapir 33/7 Seksyen 33, Shah Alam Premier Industrial Park 40400 Shah Alam Sengalor, Malaysia	+60-3-5614-2111

Emergency Contact Details

For emergencies only; DO NOT contact these companies for general product advice.

Organisation	Location	Telephone
Poisons Information Centre	Westmead NSW	1800-251525 131126
Chemcall	Australia	1800-127406 +64-4-9179888
Chemcall	Malaysia	+64-4-9179888
Chemcall	New Zealand	0800-243622 +64-4-9179888
National Poisons Centre	New Zealand	0800-764766
CHEMTREC	USA & Canada	1-800-424-9300 CN723420 +1-703-527-3887



2. HAZARD IDENTIFICATION

Poisons Schedule (Aust)

Not Scheduled



Globally Harmonised System

Hazard Classification		Hazardous according to the criteria of the Globally Harmonised System of Classification and Labelling of Chemicals (GHS)	
Hazard Categories		Flammable Liquids - Category 2 Serious Eye Damage/Irritation - Category 2A	
Pictograms		 	
Signal Word		Danger	
Hazard Statements		H225	Highly flammable liquid and vapour.
		H319	Causes serious eye irritation.
Precautionary Statements	Prevention	P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
		P233	Keep container tightly closed.
		P280	Wear protective gloves/protective clothing/eye protection/face protection.
		P240	Ground and bond container and receiving equipment.
		P241	Use explosion-proof electrical/ventilating/lighting and all other equipment.
		P242	Use non-sparking tools.
		P243	Take action to prevent static discharges.
	Response	P370 + P378	In case of fire: Use carbon dioxide (CO2), dry chemical, alcohol resistant foam or water spray for extinction.
		P337 + P313	If eye irritation persists: Get medical advice/attention.
		P303 + P361 + P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower].
		P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
		P403 + P235	Store in a well-ventilated place. Keep cool.
	Storage	P403 + P235	Store in a well-ventilated place. Keep cool.
	Disposal	P501	Dispose of contents/container in accordance with local / regional / national / international regulations.

National Transport Commission (Australia)

Australian Code for the Transport of Dangerous Goods by Road & Rail (ADG Code)

Dangerous Goods Classification	Dangerous Goods according to the criteria of the Australian Code for the Transport of Dangerous Goods by Road & Rail (ADG Code)
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Environmental Protection Authority (New Zealand)

Hazardous Substances and New Organisms Amendment Act 2015

HSNO Classifications	Physical Hazards	3.1B	Flammable liquid - high hazard
	Health Hazards	6.4A	Substances that are irritating to the eye

3. COMPOSITION/INFORMATION ON INGREDIENTS*Ingredients*

Chemical Entity	Formula	CAS Number	Proportion
Ethanol	C2H6O	64-17-5	>95 - 100 %
Denatonium benzoate	C21H29N2O.C7H5O2	3734-33-6	<=0.0016 %
Water	H2O	7732-18-5	Balance %

4. FIRST AID MEASURES*Description of necessary measures according to routes of exposure*

Swallowed	IF SWALLOWED: Rinse mouth, then give a glass of water to drink. Do not induce vomiting. Get immediate medical advice/attention. If vomiting occurs, give further water. Never give anything by mouth to an unconscious person.
Eye	IF IN EYES: Immediately flush eyes with (lukewarm) running water for several minutes, holding eyelids open and occasionally lifting the upper and lower lids. Remove contact lenses if present and easy to do. Continue rinsing for at least 15 - 20 minutes. Get medical advice/attention.
Skin	IF ON SKIN (or hair): Remove and isolate contaminated clothing and shoes. Immediately wash skin and hair thoroughly with non-abrasive soap and running water/shower. In case of gross contamination, drench contaminated clothing and skin with running water before removing clothes. If skin irritation occurs, get medical advice/attention. Wash contaminated clothing and shoes before reuse. *In case of burns, immediately cool affected skin for as long as possible with cold water. Do not remove clothing if adhering to skin. Cover with a clean, dry dressing until medical help is available. If blistering occurs, do NOT break blisters.
Inhaled	IF INHALED: Remove victim to fresh air and keep warm and at rest in a position comfortable for breathing. Remove contaminated clothing and loosen remaining clothing. If respiratory symptoms persist, get medical advice/attention. Give artificial respiration if victim is not breathing. Administer oxygen if breathing is difficult.
Advice to Doctor	Treat symptomatically. Symptoms of pulmonary oedema can be delayed up to 48 hours after exposure. Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves.
Medical Conditions Aggravated by Exposure	No information available.

5. FIRE FIGHTING MEASURES

General Measures	If safe to do so, move undamaged containers from fire area. Cool container with water spray until well after fire is out. Avoid getting water inside containers.
Flammability Conditions	HIGHLY FLAMMABLE LIQUID & VAPOUR: Low flashpoint – Will be easily ignited by heat, sparks or flames at ambient temperatures.
Extinguishing Media	Use dry chemical, Carbon dioxide (CO2), alcohol-resistant foam or water spray for extinction - Do not use water jets. Alcohol resistant foam is the preferred firefighting medium but, if it is not available, fine water spray can be used. *Caution: Use of water spray when fighting fire may be inefficient.
Fire and Explosion Hazard	Risk of violent reaction or explosion! Vapours will form explosive mixtures with air. Vapours will travel to source of ignition and flash back. Containers may explode when heated. Many liquids are lighter than water. Many vapours are heavier than air and will collect in low or confined areas.
Hazardous Products of Combustion	Fire may produce irritating, toxic and/or corrosive gases, including carbon monoxide and/or carbon dioxide, hydrocarbons.
Special Fire Fighting Instructions	Contain runoff from fire control or dilution water - Runoff may pollute waterways; Vapours from runoff may create an explosion hazard.
Personal Protective Equipment	Wear positive pressure self-contained breathing apparatus (SCBA) and chemical-protective clothing should be worn. SCBA and structural firefighting uniform provide limited protection.

Flash Point	11 - 13 °C [Closed cup]
Lower Explosion Limit	3.4 %
Upper Explosion Limit	19 %
Auto Ignition Temperature	392 - 422 °C
Hazchem Code	•2YE

6. ACCIDENTAL RELEASE MEASURES

General Response Procedure	Ensure adequate ventilation - Ventilate enclosed spaces before entering. ELIMINATE all ignition sources - All equipment used in handling the product must be earthed. Do not touch or walk through spilled material. Avoid breathing vapours and contact with eyes, skin and clothing.
Clean Up Procedures	Collect recoverable product into labelled containers for recycling or salvage. Absorb non-recoverable spill with earth, sand or other non-combustible material – Use clean, non-sparking tools to collect absorbed material and place it in suitable containers for later disposal (see SECTION 13).
Containment	Stop leak if you can do it without risk. Prevent entry into waterways, drains or confined areas. Dike far ahead of large spill for later disposal. Vapour-suppressing foam may be used to control vapours. Water spray may be used to knock down or divert vapour clouds.
Decontamination	After spill, wash area with water, preventing run off from entering drains.
Environmental Precautionary Measures	Spillages and decontamination runoff should be prevented from entering drains and watercourses. If a significant quantity of material enters drain system, notify emergency services.
Evacuation Criteria	Spill or leak area should be isolated immediately. Keep unauthorised personnel away. Keep upwind and to higher ground. Large spill: Immediately contact Police or Fire Brigade; Consider initial downwind evacuation of areas within at least 300 m.
Personal Precautionary Measures	Wear protective equipment to prevent skin and eye contamination and the inhalation of vapours (see SECTION 8).

7. HANDLING AND STORAGE

Handling	Safety showers and eyewash facilities should be provided within the immediate work area for emergency use. Ensure adequate ventilation - Use only outdoors or in a well-ventilated area. Keep exposure to the product to a minimum and minimise the quantities kept in work areas. Handle in accordance with good industrial hygiene and safety practice. Avoid breathing mist/vapours/spray and contact with eyes, skin and clothing. Do not ingest. Wear protective gloves/protective clothing/eye protection/face protection (see SECTION 8). HIGHLY FLAMMABLE LIQUID & VAPOUR: Keep away from heat, hot surfaces, sparks, open flames and other ignition sources - No smoking. Ground and bond container and receiving equipment. Use explosion-proof equipment and non-sparking tools. Take action to prevent static discharges. Avoid contact or contamination of product with incompatible materials.
Storage	Store in a cool, dry and well-ventilated place, out of direct sunlight. Keep container standing upright and tightly closed when not in use - check regularly for leaks. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources - No smoking. Keep away from foodstuffs and incompatible materials (see SECTION 10).
Container	Keep in the original container.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

General	For Ethanol (CAS No. 64-17-5): - Safe Work Australia Exposure Standard: TWA = 1,000 ppm (1,880 mg/m3). - New Zealand Workplace Exposure Standard: TWA = 1,000 ppm (1,880 mg/m3).
Exposure Limits	No Data Available
Biological Limits	No information available.
Engineering Measures	Ensure ventilation is adequate to maintain air concentrations below Exposure Standards. Use only in well ventilated

areas. In poorly ventilated areas, mechanical explosion proof extraction ventilation is recommended.

Personal Protection Equipment

- Respiratory protection: Where an inhalation risk exists, wear respiratory protection. Recommended: Type A (organic vapour) respirator. At high levels, wear self-contained breathing apparatus (SCBA) or an air-line respirator (refer to AS/NZS 1715 & 1716).
- Eye/face protection: Wear appropriate eye protection to avoid eye contact. Recommended: Wear splash-proof goggles.
- Hand protection: Wear protective gloves. Recommended: Wear nitrile or neoprene gloves.
- Skin/body protection: Wear appropriate personal protective clothing to avoid skin contact. Recommended: When using large quantities or where heavy contamination is likely, wear coveralls.

Special Hazards Precautions

Vapour heavier than air - prevent concentration in hollows or sumps. Do NOT enter confined spaces where vapour may have collected.

Work Hygienic Practices

Do not eat, drink or smoke when using this product. Always wash hands before smoking, eating, drinking or using the toilet. Wash contaminated clothing and other protective equipment before storing or re-using. Advise laundry of nature of contamination when sending contaminated clothing to laundry.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State	Liquid
Appearance	Clear liquid
Odour	Characteristic, alcohol
Colour	Colourless
pH	No Data Available
Vapour Pressure	5.9 kPa (Ethanol) (@ 20 °C)
Relative Vapour Density	1.59 Air = 1
Boiling Point	78 °C (Ethanol)
Melting Point	-117 °C
Freezing Point	No Data Available
Solubility	Soluble in water
Specific Gravity	0.79 - 0.81 (Ethanol)
Flash Point	11 - 13 °C [Closed cup]
Auto Ignition Temp	392 - 422 °C
Evaporation Rate	2.53 (n-Butyl acetate = 1)
Bulk Density	No Data Available
Corrosion Rate	No Data Available
Decomposition Temperature	No Data Available
Density	No Data Available
Specific Heat	No Data Available
Molecular Weight	No Data Available
Net Propellant Weight	No Data Available
Octanol Water Coefficient	No Data Available
Particle Size	No Data Available
Partition Coefficient	No Data Available
Saturated Vapour Concentration	No Data Available
Vapour Temperature	No Data Available
Viscosity	No Data Available
Volatile Percent	No Data Available
VOC Volume	100% [Green Building Council of Australia]
Additional Characteristics	No information available.
Potential for Dust Explosion	Not applicable.

Fast or Intensely Burning Characteristics	Risk of violent reaction or explosion!
Flame Propagation or Burning Rate of Solid Materials	No information available.
Non-Flammables That Could Contribute Unusual Hazards to a Fire	Caution: Use of water spray when fighting fire may be inefficient.
Properties That May Initiate or Contribute to Fire Intensity	HIGHLY FLAMMABLE LIQUID & VAPOUR: Low flashpoint – Will be easily ignited by heat, sparks or flames at ambient temperatures.
Reactions That Release Gases or Vapours	Fire/decomposition may produce irritating, toxic and/or corrosive gases, including carbon monoxide and/or carbon dioxide, hydrocarbons.
Release of Invisible Flammable Vapours and Gases	Vapours will form explosive mixtures with air.

10. STABILITY AND REACTIVITY

General Information	This product is unlikely to react or decompose under normal storage conditions.
Chemical Stability	Stable under recommended storage conditions.
Conditions to Avoid	Avoid direct sunlight. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. Take action to prevent static discharge.
Materials to Avoid	Incompatible/reactive with oxidising agents, acids, strong alkalis.
Hazardous Decomposition Products	Fire/decomposition may produce irritating, toxic and/or corrosive gases, including carbon monoxide and/or carbon dioxide, hydrocarbons.
Hazardous Polymerisation	No information available.

11. TOXICOLOGICAL INFORMATION

General Information	<ul style="list-style-type: none"> - Acute toxicity: Low toxicity. Ingestion may result in gastrointestinal irritation, nausea, vomiting, abdominal pain, diarrhoea, headache, dizziness and drowsiness with large doses. Toxic effects may result from skin absorption. - Skin corrosion/irritation: Not regarded as irritating to skin. Prolonged contact may result in drying and defatting of the skin, rash and dermatitis. - Eye/face protection: Causes serious eye irritation. Exposure may result in lacrimation, irritation, pain and redness. - Respiratory/skin sensitisation: Ethanol does not induce skin sensitisation in animals. - Germ cell mutagenicity: Ethanol has no mutagenic or genotoxic potential. - Carcinogenicity: While exposure to Ethanol through consuming alcoholic beverages is associated with an increased risk of carcinogenicity, the risks increase in a dose-dependent manner and are not considered relevant at doses relating to occupational exposure and using consumer products containing the substance. IARC has classified that 'alcohol consumption is carcinogenic to humans (Group 1)' and that 'ethanol in alcoholic beverages is carcinogenic to humans (Group 1)'. - Reproductive toxicity: Ethanol does not show specific reproductive or developmental toxicity. While exposure to the chemical through consuming alcoholic beverages is associated with an increased risk of reproductive and developmental toxicity, these risks increase in a dose-dependent manner and are not considered relevant at doses relating to occupational exposure and using consumer products containing the substance. - STOT (single exposure): Inhalation may cause irritation to the respiratory system, nose and throat irritation, coughing and headache. Over exposure may cause central nervous system depression may result in nausea, dizziness and drowsiness. - STOT (repeated exposure): This product has the potential to cause adverse health effects with chronic over exposure. Liver damage may occur with high level of chronic ingestion. - Aspiration toxicity: No information available.
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Acute

Ingestion	Acute toxicity (Oral): - LD50, Rats: >2,000 mg/kg bw. [NICNAS]. - LD50, Mouse: 3,450 mg/kg [Supplier's SDS]. - LD50, Rat: 7,060 mg/kg [Supplier's SDS].
Other	Acute toxicity (Dermal): - LD50, Rats: >2,000 mg/kg bw. [NICNAS].
Inhalation	Acute toxicity (Inhalation): - LC50, Rats: 124.7 mg/L (4 h) [NICNAS].
Carcinogen Category	None

12. ECOLOGICAL INFORMATION

Ecotoxicity	Aquatic toxicity: - LC50, Fish (Oncorhynchus mykiss): >10,000 mg/l (96 h). - LC50, Fish (Pimephales promelas): >13,400 mg/l ((96 h). - EC50, Algae/aquatic plants (Chlorella vulgaris): 1,000 mg/l (96 h) Growth inhibition. Expected not to be an environmental hazard (Ethanol).
Persistence/Degradability	Biodegradation is expected (Ethanol).
Mobility	No information available.
Environmental Fate	Prevent entry into drains and waterways.
Bioaccumulation Potential	Bioaccumulation is unlikely (Ethanol).
Environmental Impact	No Data Available

13. DISPOSAL CONSIDERATIONS

General Information	Dispose of material through a licensed waste contractor and in accordance with local/regional/national regulations.
Special Precautions for Land Fill	Decontamination and destruction of containers should be considered.

14. TRANSPORT INFORMATION**Land Transport (Australia)**

ADG Code

Proper Shipping Name	ETHANOL (ETHYL ALCOHOL)
Class	3 Flammable Liquids
Subsidiary Risk(s)	No Data Available
EPG	14 Liquids - Highly Flammable
UN Number	1170
Hazchem	+2YE
Pack Group	II
Special Provision	No Data Available

Land Transport (Malaysia)

ADR Code

Proper Shipping Name	ETHANOL (ETHYL ALCOHOL)
Class	3 Flammable Liquids
Subsidiary Risk(s)	No Data Available
EPG	14 Liquids - Highly Flammable
UN Number	1170
Hazchem	•2YE
Pack Group	II
Special Provision	No Data Available

Land Transport (New Zealand)

NZS5433

Proper Shipping Name	ETHANOL (ETHYL ALCOHOL)
Class	3 Flammable Liquids
Subsidiary Risk(s)	No Data Available
EPG	14 Liquids - Highly Flammable
UN Number	1170
Hazchem	•2YE
Pack Group	II
Special Provision	No Data Available

Land Transport (United States of America)

US DOT

Proper Shipping Name	ETHANOL (ETHYL ALCOHOL)
Class	3 Flammable Liquids
Subsidiary Risk(s)	No Data Available
ERG	127 Flammable Liquids (Polar / Water-Miscible)
UN Number	1170
Hazchem	•2YE
Pack Group	II
Special Provision	No Data Available

Sea Transport

IMDG Code

Proper Shipping Name	ETHANOL (ETHYL ALCOHOL)
Class	3 Flammable Liquids
Subsidiary Risk(s)	No Data Available
UN Number	1170
Hazchem	•2YE
Pack Group	II
Special Provision	No Data Available
EMS	F-E, S-D
Marine Pollutant	No

Air Transport

IATA DGR

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Proper Shipping Name	ETHANOL (ETHYL ALCOHOL)
Class	3 Flammable Liquids
Subsidiary Risk(s)	No Data Available
UN Number	1170
Hazchem	•2YE
Pack Group	II
Special Provision	No Data Available

National Transport Commission (Australia)

Australian Code for the Transport of Dangerous Goods by Road & Rail (ADG Code)

Dangerous Goods Classification	Dangerous Goods according to the criteria of the Australian Code for the Transport of Dangerous Goods by Road & Rail (ADG Code)
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15. REGULATORY INFORMATION

General Information	No Data Available
Poisons Schedule (Aust)	Not Scheduled

Environmental Protection Authority (New Zealand)

Hazardous Substances and New Organisms Amendment Act 2015

Approval Code	HSR001144
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National/Regional Inventories

Australia (AIIIC)	Listed
Canada (DSL)	Not Determined
Canada (NDSL)	Not Determined
China (IECSC)	Not Determined
Europe (EINECS)	Not Determined
Europe (REACH)	Not Determined
Japan (ENCS/METI)	Not Determined
Korea (KECI)	Not Determined
Malaysia (EHS Register)	Not Determined
New Zealand (NZIoC)	Listed
Philippines (PICCS)	Not Determined
Switzerland (Giftliste 1)	Not Determined
Switzerland (Inventory of Notified Substances)	Not Determined

Taiwan (NCSR)

Not Determined

USA (TSCA)

Not Determined

16. OTHER INFORMATION

Related Product Codes	MESPSP0800, MESPSP3900, MESPSP4000, MESPSP4001, MESPSP4002, MESPSP4100, MESPSP4110, MESPSP4200, MESPSP4220, MESPSP4300, MESPSP4400, MESPSP4410, MESPSP4500
Revision	4
Revision Date	09 Dec 2020
Reason for Issue	SDS updated
Key/Legend	<p>< Less Than > Greater Than</p> <p>AICS Australian Inventory of Chemical Substances atm Atmosphere CAS Chemical Abstracts Service (Registry Number) cm² Square Centimetres CO₂ Carbon Dioxide COD Chemical Oxygen Demand deg C (°C) Degrees Celcius EPA (New Zealand) Environmental Protection Authority of New Zealand deg F (°F) Degrees Farenheit g Grams g/cm³ Grams per Cubic Centimetre g/l Grams per Litre HSNO Hazardous Substance and New Organism IDLH Immediately Dangerous to Life and Health immiscible Liquids are insoluable in each other. inHg Inch of Mercury inH₂O Inch of Water K Kelvin kg Kilogram kg/m³ Kilograms per Cubic Metre lb Pound LC50 LC stands for lethal concentration. LC50 is the concentration of a material in air which causes the death of 50% (one half) of a group of test animals. The material is inhaled over a set period of time, usually 1 or 4 hours. LD50 LD stands for Lethal Dose. LD50 is the amount of a material, given all at once, which causes the death of 50% (one half) of a group of test animals. ltr or L Litre m³ Cubic Metre mbar Millibar mg Milligram mg/24H Milligrams per 24 Hours mg/kg Milligrams per Kilogram mg/m³ Milligrams per Cubic Metre Misc or Miscible Liquids form one homogeneous liquid phase regardless of the amount of either component present. mm Millimetre mmH₂O Millimetres of Water mPa.s Millipascals per Second N/A Not Applicable NIOSH National Institute for Occupational Safety and Health NOHSC National Occupational Health and Safety Commission OECD Organisation for Economic Co-operation and Development Oz Ounce PEL Permissible Exposure Limit Pa Pascal ppb Parts per Billion ppm Parts per Million ppm/2h Parts per Million per 2 Hours</p>

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ppm/6h Parts per Million per 6 Hours
psi Pounds per Square Inch
R Rankine
RCP Reciprocal Calculation Procedure
STEL Short Term Exposure Limit
TLV Threshold Limit Value
tne Tonne
TWA Time Weighted Average
ug/24H Micrograms per 24 Hours
UN United Nations
wt Weight