SAFETY DATA SHEET
ISOBUTYL ALCOHOL
REVISION 4, DATE 28 NOV 19

1. IDENTIFICATION

Product Name	**Isobutyl Alcohol**
Other Names	2-Methylpropan-1-ol; Isobutanol
Uses	Use in textile processes, industrial cleaners and solvents for hard surface cleaning.
Chemical Family	No Data Available
Chemical Formula	C4H10O
Chemical Name	1-Propanol, 2-methyl-
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 3 Skin Corrosion/Irritation - Category 2 Serious Eye Damage/Irritation - Category 1 Specific Target Organ Toxicity (Single Exposure) - Category 3
Pictograms			
Signal Word			Danger
Hazard Statements		**H226**	Flammable liquid and vapour.
		H315	Causes skin irritation.
		H318	Causes serious eye damage.
		H335	May cause respiratory irritation.
		H336	May cause drowsiness or dizziness.
Precautionary Statements	Prevention	**P210**	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
		P233	Keep container tightly closed.
		P240	Ground and bond container and receiving equipment.
		P241	Use explosion-proof electrical/ventilating/lighting/equipment.
		P242	Use non-sparking tools.
		P243	Take action to prevent static discharges.
		P261	Avoid breathing fumes/mists/vapours/spray.
		P271	Use only outdoors or in a well-ventilated area.
		P280	Wear protective gloves/protective clothing/eye protection/face protection.
	Response	**P303 + P361 + P353**	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.
		P304 + P340	IF INHALED: Remove victim to fresh air and keep comfortable for breathing.
		P312	Call a POISON CENTER or doctor if you feel unwell.
		P332 + P313	If skin irritation occurs: Get medical attention.
		P362	Take off contaminated clothing.
		P370 + P378	In case of fire: Use dry chemical, alcohol resistant foam or dry sand for extinction.
		P305 + P351 + P338 + P310	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTRE/doctor.
	Storage	**P403 + P233**	Store in a well-ventilated place. Keep container tightly closed.
		P405	Store locked up.
	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)

Environmental Protection Authority (New Zealand)
Hazardous Substances and New Organisms Amendment Act 2015

HSNO Classifications	Physical Hazards	**3.1C**	Flammable liquid - medium hazard
	Health Hazards	**6.4A**	Substances that are irritating to the eye

3. COMPOSITION/INFORMATION ON INGREDIENTS

Ingredients

Chemical Entity	Formula	CAS Number	Proportion
Isobutyl alcohol	C4H10O	78-83-1	>=99 - <=100 %

4. FIRST AID MEASURES

Description of necessary measures according to routes of exposure

Swallowed	IF SWALLOWED: Rinse mouth. Keep respiratory tract clear. Do not induce vomiting. Do NOT give milk or alcoholic beverages. Immediately call a Poison Centre or doctor/physician for advice. If vomiting occurs, lean patient forward or place on left side (head-down position, if possible) to maintain an open airway and prevent aspiration. Never give anything by mouth to an unconscious person.
Eye	IF IN EYES: Immediately flush eyes with running water for several minutes, holding eyelids open and occasionally lifting the upper and lower lids. Protect unharmed eye. Remove contact lenses if present and easy to do. Continue rinsing for at least 15 minutes. Get immediate medical advice/attention, preferably from an ophthalmologist. Continue rinsing eyes during transport to hospital.
Skin	IF ON SKIN (or hair): Remove contaminated clothing and shoes immediately. Flush skin and hair with running water for at least 15 minutes. If skin irritation occurs, get medical advice/attention. Wash contaminated clothing and shoes before reuse.
Inhaled	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a Poison Centre or doctor/physician for advice. Apply resuscitation if victim is not breathing - Do not use direct mouth-to-mouth method if victim ingested or inhaled the substance; use alternative respiratory method or proper respiratory device - Administer oxygen if breathing is difficult.
Advice to Doctor	No specific antidote. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient. Keep victim calm and warm - Obtain immediate medical care. Ensure that attending medical personnel are aware of identity and nature of product(s) involved, and take precautions to protect themselves. Danger from lung aspiration must be weighed against toxicity when considering emptying the stomach. The decision of whether to induce vomiting or not should be made by a physician. If lavage is performed, suggest endotracheal and/or oesophageal control.
Medical Conditions Aggravated by Exposure	Repeated excessive exposure may aggravate preexisting liver and kidney disease. Skin contact may aggravate preexisting dermatitis.

5. FIRE FIGHTING MEASURES

General Measures	If safe to do so, move undamaged containers from fire area. Cool containers with water spray until well after fire is out. Avoid getting water inside containers.
Flammability Conditions	FLAMMABLE LIQUID & VAPOUR: Low flashpoint - Will be easily ignited by heat, sparks or flame.

Extinguishing Media	Use dry chemical, Carbon dioxide (CO2), 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 may travel to source of ignition and flash back. Most vapours are heavier than air and will collect in low or confined areas. Many liquids are lighter than water. Containers may explode when heated. Vapours from runoff may create an explosion hazard.
Hazardous Products of Combustion	During a fire, smoke may contain the original material in addition to combustion products of varying composition which may be toxic and/or irritating. Combustion products may include Carbon monoxide, Carbon dioxide.
Special Fire Fighting Instructions	Collect contaminated fire extinguishing water separately; This must not be discharged into drains. Fire residues and contaminated fire extinguishing water must be disposed off in accordance with local regulations.
Personal Protective Equipment	Wear positive pressure self-contained breathing apparatus (SCBA) and chemical protective clothing. SCBA and structural firefighting uniform provide VERY limited protection.
Flash Point	27 - 28 °C [Closed cup]
Lower Explosion Limit	1.7 %
Upper Explosion Limit	12 %
Auto Ignition Temperature	390 °C
Hazchem Code	•3Y

6. ACCIDENTAL RELEASE MEASURES

General Response Procedure	Ensure adequate ventilation - Ventilate enclosed spaces before entering. ELIMINATE all ignition sources - All equipment used when 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	Absorb with earth, sand or other non-combustible material. Use clean, non-sparking tools to collect material and place it in suitable, properly labelled containers for later disposal (see SECTION 13).
Containment	Stop leak if safe to do so – Prevent entry into waterways, drains or confined areas. Vapour-suppressing foam may be used to control vapours – Water spray may be used to knock down or divert vapour clouds.
Decontamination	Flushings and wash-waters must be contained and prevented from entering into soil, waterways and ground water.
Environmental Precautionary Measures	Spillages and decontamination runoff should be prevented from entering drains and watercourses - Vapours from runoff may create an explosion hazard.
Evacuation Criteria	Spill or leak area should be isolated immediately. Keep upwind and to higher ground. Keep unauthorised personnel away. Large spill: Immediately contact Police or Fire Brigade; Consider initial downwind evacuation of areas within at least 300 m.
Personal Precautionary Measures	SCBA and gas-tight suits should be worn when dealing with damaged or leaking containers and where there is no risk of ignition. SCBA and structural firefighting uniform provide VERY limited protection where there is a risk of ignition.

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. Handle in accordance with good industrial hygiene and safety practice. Open drums carefully as contents may be under pressure. Avoid formation of aerosols. Avoid breathing mist/vapours/aerosols and contact with eyes, skin and clothing. Do not ingest. Wear protective gloves/protective clothing/eye protection/face protection (see SECTION 8). FLAMMABLE LIQUID & VAPOUR: Keep away from heat, hot surfaces, sparks, open flames and other ignition sources - No smoking. Do not spray on a naked flame or any incandescent material. Ground and bond container and receiving equipment. Use explosion-proof equipment and non-sparking tools. Take action to prevent static discharges (which might cause ignition of organic vapours).
Storage	Store in a cool, dry and well-ventilated place, out of direct sunlight. Keep container tightly closed. Containers which are opened must be carefully resealed and kept upright to prevent leakage. 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). Store locked up. Electrical installations/working materials must comply with the technological safety standards.
Container	Store in original container. Containers, even those that have been emptied, can contain vapours. Do not cut, drill, grind,

weld or perform similar operations on or near empty containers.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

General	For Isobutyl alcohol (CAS No. 78-83-1): - Safe Work Australia Exposure Standard: TWA = 50 ppm (152 mg/m3). - New Zealand Workplace Exposure Standard: TWA = 50 ppm (152 mg/m3).
Exposure Limits	No Data Available
Biological Limits	No information available.
Engineering Measures	A system of local and/or general exhaust is recommended to keep employee exposures as low as possible. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area.
Personal Protection Equipment	- Respiratory protection: In case of inadequate ventilation, wear respiratory protection. Recommended: Organic vapour respirator. For emergency and other conditions where the exposure guideline may be exceeded, use an approved positive-pressure self-contained breathing apparatus or positive-pressure airline with auxiliary self-contained air supply (refer to AS/NZS 1715 & 1716). - Eye/face protection: Wear appropriate eye protection to prevent eye contact. Recommended: Use chemical goggles. If exposure causes eye discomfort, use a full-face respirator. - Hand protection: Wear protective gloves. Recommended: Use chemical resistant gloves, e.g. Viton, Butyl rubber, Polyethylene, Neoprene, Chlorinated polyethylene, Natural rubber (latex), Polyvinyl chloride (PVC or vinyl), Ethyl vinyl alcohol laminate (EVAL). - Skin/body protection: Wear appropriate personal protective clothing to prevent skin contact. Recommended: Use protective clothing chemically resistant to this material. Selection of specific items such as boots, apron or full body-suit will depend on operation. Choose body protection according to the amount and concentration of the hazardous substance(s) at the work place.
Special Hazards Precaustions	Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas.
Work Hygienic Practices	Do not eat, drink or smoke when using this product. Remove contaminated clothing immediately, wash skin areas with soap and water and launder clothing before reuse or dispose of properly.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State	Liquid
Appearance	Liquid
Odour	Alcohol-like
Colour	Colourless
pH	No Data Available
Vapour Pressure	11.8 - 12 hPa (@ 20 °C)
Relative Vapour Density	2.55 - 2.6 Air = 1
Boiling Point	108 °C
Melting Point	-107.8 - -108 °C
Freezing Point	No Data Available
Solubility	95 - 98 g/l in water 20°C
Specific Gravity	0.8
Flash Point	27 - 28 °C [Closed cup]
Auto Ignition Temp	390 °C
Evaporation Rate	0.74 - 0.82 (BuAc=1)
Bulk Density	No Data Available
Corrosion Rate	No Data Available
Decomposition Temperature	No Data Available

Density	0.8016 g/cm3
Specific Heat	No Data Available
Molecular Weight	No Data Available
Net Propellant Weight	No Data Available
Octanol Water Coefficient	0.65 log POW
Particle Size	No Data Available
Partition Coefficient	No Data Available
Saturated Vapour Concentration	No Data Available
Vapour Temperature	No Data Available
Viscosity	4 mPa.s (@ 200 °C)
Volatile Percent	No Data Available
VOC Volume	>99.5 %
Additional Characteristics	Organic solvents: >99.5 %
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	No information available.
Properties That May Initiate or Contribute to Fire Intensity	FLAMMABLE LIQUID & VAPOUR: Low flashpoint - Will be easily ignited by heat, sparks or flame.
Reactions That Release Gases or Vapours	Fire/decomposition will produce irritating, toxic and/or corrosive gases, including Carbon monoxide, Carbon dioxide, fumes, smoke.
Release of Invisible Flammable Vapours and Gases	Vapours will form explosive mixtures with air.

10. STABILITY AND REACTIVITY

General Information	No dangerous reaction known under conditions of normal use.
Chemical Stability	Stable under normal conditions.
Conditions to Avoid	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. Take action to prevent static discharges.
Materials to Avoid	Incompatible/reactive with strong oxidisers, strong mineral acids, nitric acid, sodium hydroxide, alkali metals, halogens.
Hazardous Decomposition Products	Fire/decomposition will produce irritating, toxic and/or corrosive gases, including Carbon monoxide, Carbon dioxide, fumes, smoke.
Hazardous Polymerisation	Hazardous polymerisation does not occur.

11. TOXICOLOGICAL INFORMATION

General Information	- Acute toxicity: May be harmful if swallowed. Swallowing can result in nausea, vomiting and central nervous system depression. May be harmful in contact with skin. Absorption through the skin may be a significant source of exposure. - Skin corrosion/irritation: Causes skin irritation. Skin irritation (Rabbit, 24 h). - Eye damage/irritation: Causes serious eye damage. Irreversible effects on the eye (Rabbit). - Respiratory/skin sensitisation: Not sensitising (Skin contact). - Germ cell mutagenicity: Animal testing did not show any mutagenic effects. - Carcinogenicity: Not listed as carcinogenic according to the International Agency for Research on Cancer (IARC).

- Reproductive toxicity: No evidence of impaired fertility was found in animal studies. No reproductive or developmental effects.
- STOT (single exposure): May cause respiratory irritation (respiratory system). May cause drowsiness or dizziness (Central nervous system). Can cause narcotic effects. Breathing in vapour can result in headaches, dizziness, drowsiness and nausea. Breathing in high concentrations can produce central nervous system depression, which can lead to loss of coordination, impaired judgement and if exposure is prolonged, unconsciousness.
- STOT (repeated exposure): Repeated excessive exposure may aggravate preexisting liver and kidney disease.
- Aspiration toxicity: If this liquid is swallowed, aspiration into the lungs may result in chemical pneumonitis.

Acute

Ingestion	Acute toxicity (Oral): - LD50, Rat (female): 3,350 mg/kg [Supplier's SDS].
Other	Acute toxicity (Dermal): - LD50, Rabbit (female): 2,460 mg/kg [Supplier's SDS].
Inhalation	Acute toxicity (Inhalation): - LC50, Rat: 18.18 mg/l (6 h) [Supplier's SDS].
Carcinogen Category	None

12. ECOLOGICAL INFORMATION

Ecotoxicity	Aquatic toxicity: - LC50, Fish (Pimephales promelas): 1,430 mg/l (96 h). - EC50, Crustacea (Daphnia pulex): 1,100 mg/l (48 h). - ErC50, Algae (Pseudokirchneriella subcapitata): 1,799 mg/l (72 h). - NOEC, Crustacea (Daphnia magna): 20 mg/l (21 d).
Persistence/Degradability	Readily biodegradable.
Mobility	No information available.
Environmental Fate	Do not dispose of waste into sewer. Do not contaminate ponds, waterways or ditches with chemical or used container.
Bioaccumulation Potential	Partition coefficient: n-octanol/water (log Pow): 1
Environmental Impact	No Data Available

13. DISPOSAL CONSIDERATIONS

General Information	Dispose of contents/container in accordance with local/regional/national regulations. All efforts to recycle material should be made. Incineration under approved, controlled conditions using incinerators suitable or designed for the disposal of hazardous chemical wastes, is the preferred method for disposal.
Special Precautions for Land Fill	Contaminated packaging: Empty remaining contents. Do not re-use empty containers. Do not burn or use a cutting torch on the empty drum.

14. TRANSPORT INFORMATION

Land Transport (Australia)
ADG Code

Proper Shipping Name	ISOBUTANOL (ISOBUTYL ALCOHOL)
Class	3 Flammable Liquids
Subsidiary Risk(s)	No Data Available

EPG	17 Liquids - Flammable, Toxic
UN Number	1212
Hazchem	•3Y
Pack Group	III
Special Provision	No Data Available

Land Transport (Malaysia)
ADR Code

Proper Shipping Name	ISOBUTANOL (ISOBUTYL ALCOHOL)
Class	3 Flammable Liquids
Subsidiary Risk(s)	No Data Available
EPG	17 Liquids - Flammable, Toxic
UN Number	1212
Hazchem	•3Y
Pack Group	III
Special Provision	No Data Available

Land Transport (New Zealand)
NZS5433

Proper Shipping Name	ISOBUTANOL (ISOBUTYL ALCOHOL)
Class	3 Flammable Liquids
Subsidiary Risk(s)	No Data Available
EPG	17 Liquids - Flammable, Toxic
UN Number	1212
Hazchem	•3Y
Pack Group	III
Special Provision	No Data Available

Land Transport (United States of America)
US DOT

Proper Shipping Name	ISOBUTANOL (ISOBUTYL ALCOHOL)
Class	3 Flammable Liquids
Subsidiary Risk(s)	No Data Available
ERG	129 Flammable Liquids (Polar / Water-Miscible / Noxious)
UN Number	1212
Hazchem	•3Y
Pack Group	III
Special Provision	No Data Available

Sea Transport
IMDG Code

Proper Shipping Name	ISOBUTANOL (ISOBUTYL ALCOHOL)
Class	3 Flammable Liquids
Subsidiary Risk(s)	No Data Available
UN Number	1212
Hazchem	3Y
Pack Group	III
Special Provision	No Data Available

EMS	F-E, S-D
Marine Pollutant	No

Air Transport
IATA DGR

Proper Shipping Name	ISOBUTANOL (ISOBUTYL ALCOHOL)
Class	3 Flammable Liquids
Subsidiary Risk(s)	No Data Available
UN Number	1212
Hazchem	•3Y
Pack Group	III
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)

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	HSR001097 (Reissued)

National/Regional Inventories

Australia (AIIC)	Listed
Canada (DSL)	Listed
Canada (NDSL)	Not Determined
Europe (EINECS)	Listed
Europe (REACh)	Not Determined
Japan (ENCS/METI)	Listed
Korea (KECI)	Listed
Malaysia (EHS Register)	Not Determined
Philippines (PICCS)	Listed
Switzerland (Giftliste 1)	Not Determined

Switzerland (Inventory of Notified Substances)	Not Determined
Taiwan (NCSR)	Listed
USA (TSCA)	Listed

16. OTHER INFORMATION

Related Product Codes	ISBUTA1000, ISBUTA1001, ISBUTA1002, ISBUTA1003, ISBUTA1004, ISBUTA1005, ISBUTA1006, ISBUTA1007, ISBUTA1008, ISBUTA1009, ISBUTA1010, ISBUTA1011, ISBUTA1012, ISBUTA1013, ISBUTA1014, ISBUTA1015, ISBUTA1020, ISBUTA1021, ISBUTA1027, ISBUTA1100, ISBUTA1200, ISBUTA1500, ISBUTA1501, ISBUTA1600, ISBUTA2000, ISBUTA2001, ISBUTA2100, ISBUTA2105, ISBUTA2110, ISBUTA2200, ISBUTA2201, ISBUTA2300, ISBUTA2301, ISBUTA2400, ISBUTA2500, ISBUTA3000, ISBUTA3010, ISBUTA3011, ISBUTA3020, ISBUTA3021, ISBUTA3022, ISBUTA3030, ISBUTA3100, ISBUTA3160, ISBUTA3300, ISBUTA3500, ISBUTA4000, ISBUTA4500, ISBUTA4501, ISBUTA4502, ISBUTA5000, ISBUTA5001, ISBUTA5100, ISBUTA5200, ISBUTA5500, ISBUTA6000, ISBUTA6500, ISBUTA6600, ISBUTA6900, ISBUTA7000, ISBUTA7100, ISBUTA8000, ISBUTA8008, ISBUTA8009, ISBUTA9000, ISBUTA9005
Revision	4
Revision Date	28 Nov 2019
Key/Legend	< Less Than > Greater Than **AICS** Australian Inventory of Chemical Substances **atm** Atmosphere **CAS** Chemical Abstracts Service (Registry Number) **cm^2** 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/cm^3** 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/m^3** 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 **m^3** Cubic Metre **mbar** Millibar **mg** Milligram **mg/24H** Milligrams per 24 Hours **mg/kg** Milligrams per Kilogram **mg/m^3** 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 Heath 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
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