

### 1. IDENTIFICATION

<b>Product Name</b>	<b>Surfactant LF 164</b>
<b>Other Names</b>	ALCOHOLS, C12-15, ETHOXYLATED PROPOXYLATED; Fatty Alcohol Alkoxylate; Polyoxyethylene Polyoxypropylene C12C15 ether
<b>Uses</b>	Nonionic surfactant, Emulsifier, Dispersing agent
<b>Chemical Family</b>	No Data Available
<b>Chemical Formula</b>	Unspecified
<b>Chemical Name</b>	Surfactant LF 164
<b>Product Description</b>	No Data Available

### Contact Details of the Supplier of this Safety Data Sheet

Organisation	Location	Telephone
Redox Pty Ltd	2 Swettenham Road Minto NSW 2566 Australia	+61-2-97333000
Redox Pty 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

<b>Hazard Classification</b>	Hazardous according to the criteria of the Globally Harmonised System of Classification and Labelling of Chemicals (GHS)		
<b>Hazard Categories</b>	Acute Toxicity (Oral) - Category 5		
<b>Hazard Statements</b>	<b>H303</b>	May be harmful if swallowed.	
<b>Precautionary Statements</b>	Response	<b>P312</b>	Call a POISON CENTER or doctor/physician if you feel unwell.

### National Transport Commission (Australia)

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

<b>Dangerous Goods Classification</b>	NOT 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

<b>HSNO Classifications</b>	Health Hazards	<b>6.1D</b>	Substances that are acutely toxic - Harmful
		<b>6.3B</b>	Substances that are mildly irritating to the skin
		<b>6.4A</b>	Substances that are irritating to the eye
	Environmental Hazards	<b>9.1A</b>	Substances that are very ecotoxic in the aquatic environment
<b>9.3C</b>		Substances that are harmful to terrestrial vertebrates	

## 3. COMPOSITION/INFORMATION ON INGREDIENTS

### Ingredients

Chemical Entity	Formula	CAS Number	Proportion
Fatty Alcohol Alkoxylate	No Data Available	68551-13-3	100.0 %

## 4. FIRST AID MEASURES

### Description of necessary measures according to routes of exposure

<b>Swallowed</b>	If the victim is unconscious or spasm, do not feed any food. Induce vomiting. If the patient is conscious, give them water and seek medical advice.
<b>Eye</b>	Lift eyelids and flush eye with running warm water for 15 minutes. Obtain medical attention.
<b>Skin</b>	Immediately wash skin with running warm water for 20 minutes. If irritation persists, seek medical attention. Remove contaminated clothing, shoes and leather accessories
<b>Inhaled</b>	Remove victim from exposure to fresh air. If not breathing, apply artificial respiration. If breathing is difficult, give oxygen. Seek medical attention.
<b>Advice to Doctor</b>	Treat symptomatically based on individual reactions of patient and judgement of doctor.
<b>Medical Conditions Aggravated by Exposure</b>	No information available on medical conditions which are aggravated from exposure to this product.

## 5. FIRE FIGHTING MEASURES

<b>General Measures</b>	If safe to do so, remove containers from the path of fire.
<b>Flammability Conditions</b>	Product is a combustible liquid.
<b>Extinguishing Media</b>	Small fires-foam, dry chemical, carbon dioxide and water spray. Large fires- water fog, fine water spray or foam.
<b>Fire and Explosion Hazard</b>	Product is a combustible liquid. Slight fire hazard when exposed to heat or flame. May burn but does not ignite readily.
<b>Hazardous Products of Combustion</b>	Combustible liquid. Slight fire hazard when exposed to heat or flame. May burn but does not ignite readily. Hazardous decomposition products are not known.
<b>Special Fire Fighting Instructions</b>	Clear fire area of all non-emergency personnel. Stay upwind. Keep out of low areas. Eliminate ignition sources. Move fire exposed containers from fire area if it can be done without risk. Do NOT allow fire fighting water to reach waterways, drains or sewers. Store fire fighting water for treatment.
<b>Personal Protective Equipment</b>	Fire fighters should wear a positive-pressure self-contained breathing apparatus (SCBA) and protective fire fighting clothing (includes fire fighting helmet, coat, trousers, boots and gloves). Clear fire area of all non-emergency personnel. Stay upwind. Keep out of low areas. Eliminate ignition sources.
<b>Flash Point</b>	>150 °C Closed Cup
<b>Lower Explosion Limit</b>	No Data Available
<b>Upper Explosion Limit</b>	No Data Available
<b>Auto Ignition Temperature</b>	No Data Available
<b>Hazchem Code</b>	No Data Available

## 6. ACCIDENTAL RELEASE MEASURES

<b>General Response Procedure</b>	Eliminate all sources of ignition. Increase ventilation. Avoid walking through spilled product as it may be slippery. Stop leak if safe to do so. Use clean, non-sparking tools and equipment.
<b>Clean Up Procedures</b>	Soak up spilled product using absorbent non-combustible material such as sand or soil. Avoid using sawdust or cellulose. When saturated, collect the material and transfer to a suitable, labelled chemical waste container and dispose of promptly.
<b>Containment</b>	Stop leak if safe to do so.
<b>Environmental Precautionary Measures</b>	Do not allow product to reach drains, sewers or waterways. If product does enter a waterway, advise the Environmental Protection Authority or your local Waste Authority
<b>Evacuation Criteria</b>	Evacuate all unnecessary personnel.
<b>Personal Precautionary Measures</b>	Personnel involved in the clean up should wear full protective clothing as listed in section 8.

## 7. HANDLING AND STORAGE

<b>Handling</b>	Ensure an eye bath and safety shower are available and ready for use. Observe good personal hygiene practices and recommended procedures. Wash thoroughly after handling. Take precautionary measures against static discharges by bonding and grounding equipment. Avoid contact with eyes, skin and clothing. Do not inhale product vapours.
<b>Storage</b>	Store in a cool, dry, well-ventilated area. Keep containers tightly closed when not in use. Inspect regularly for deficiencies such as damage or leaks. Protect against physical damage. Store away from incompatible materials including oxidizing agents and sources of ignition. Protect from direct sun- light, moisture and static discharges. This product has a UN classification of 3082 and a Dangerous Goods Class 9 (Miscellaneous) according to The Australian Code for the Transport of Dangerous Goods By Road and Rail. NOTE: This product is subject to special provision AU01 according to The ADG7. SP No. AU01 Environmentally Hazardous Substances meeting the descriptions of UN 3077 or UN 3082 are not subject to this Code when transported by road or rail in; (a) packagings that do not incorporate a receptacle exceeding 500 kg(L); or (b) IBCs.
<b>Container</b>	Store in original packaging as approved by manufacturer.

## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

<b>General</b>	No exposure standard has been established for this product by the Australian Safety and Compensation Council (ASCC).
<b>Exposure Limits</b>	No Data Available
<b>Biological Limits</b>	Currently, there are no Biological Exposure Indices (BEIs) determined for the components of this product.
<b>Engineering Measures</b>	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.
<b>Personal Protection Equipment</b>	RESPIRATOR: Wear an approved respirator where vapours are generated and engineering controls are inadequate (AS1715/1716). EYES: Chemical splash goggles (AS1336/1337). HANDS: Wear nitrile rubber gloves (AS2161). CLOTHING: Standard work uniform/clothing and safety footwear (AS3765/2210).
<b>Work Hygienic Practices</b>	No Data Available

## 9. PHYSICAL AND CHEMICAL PROPERTIES

<b>Physical State</b>	Liquid
<b>Appearance</b>	Liquid
<b>Odour</b>	Natural alcohol odour
<b>Colour</b>	Clear or Hazy
<b>pH</b>	5 - 7 1%
<b>Vapour Pressure</b>	<0.0013 kPa torr (@ 20 °C)
<b>Relative Vapour Density</b>	>1 Air = 1
<b>Boiling Point</b>	170 °C
<b>Melting Point</b>	No Data Available
<b>Freezing Point</b>	No Data Available
<b>Solubility</b>	Soluble in water 25°C
<b>Specific Gravity</b>	0.980-1.000
<b>Flash Point</b>	>150 °C Closed Cup
<b>Auto Ignition Temp</b>	No Data Available
<b>Evaporation Rate</b>	No Data Available
<b>Bulk Density</b>	No Data Available
<b>Corrosion Rate</b>	No Data Available
<b>Decomposition Temperature</b>	No Data Available
<b>Density</b>	No Data Available
<b>Specific Heat</b>	No Data Available
<b>Molecular Weight</b>	No Data Available
<b>Net Propellant Weight</b>	No Data Available
<b>Octanol Water Coefficient</b>	No Data Available
<b>Particle Size</b>	No Data Available
<b>Partition Coefficient</b>	No Data Available
<b>Saturated Vapour Concentration</b>	No Data Available
<b>Vapour Temperature</b>	No Data Available
<b>Viscosity</b>	No Data Available
<b>Volatile Percent</b>	No Data Available
<b>VOC Volume</b>	No Data Available
<b>Additional Characteristics</b>	No Data Available
<b>Potential for Dust Explosion</b>	Product is a liquid.
<b>Fast or Intensely Burning Characteristics</b>	No Data Available
<b>Flame Propagation or Burning Rate of Solid Materials</b>	No Data Available

<b>Non-Flammables That Could Contribute Unusual Hazards to a Fire</b>	No Data Available
<b>Properties That May Initiate or Contribute to Fire Intensity</b>	No Data Available
<b>Reactions That Release Gases or Vapours</b>	No Data Available
<b>Release of Invisible Flammable Vapours and Gases</b>	Flame might be invisible in daylight.

## 10. STABILITY AND REACTIVITY

<b>Chemical Stability</b>	Product is stable under normal conditions of use, storage and temperature. Combustible liquid.
<b>Conditions to Avoid</b>	Avoid high temperatures and fire.
<b>Materials to Avoid</b>	Avoid contact with strong acid and oxidizing agents.
<b>Hazardous Decomposition Products</b>	No dangerous decomposition products known.
<b>Hazardous Polymerisation</b>	Has not been reported.

## 11. TOXICOLOGICAL INFORMATION

<b>General Information</b>	LD50:>5,000 mg/kg(Big Mouse)
<b>EyeIrritant</b>	Eye contact may result in irritation.
<b>Ingestion</b>	Harmful if swallowed.
<b>Inhalation</b>	Inhalation of mist may cause irritation.
<b>SkinIrritant</b>	Skin contact may result in slight irritation.
<b>Carcinogen Category</b>	No Data Available

## 12. ECOLOGICAL INFORMATION

<b>Ecotoxicity</b>	LC50(fish):goldfish 96hrs 3.29mg/kg
<b>Persistence/Degradability</b>	No information available on persistence/degradability for this product.
<b>Mobility</b>	Soluble in Water
<b>Environmental Fate</b>	Do NOT let product reach waterways, drains and sewers.
<b>Bioaccumulation Potential</b>	No information available on bioaccumulation for this product.
<b>Environmental Impact</b>	No Data Available

## 13. DISPOSAL CONSIDERATIONS

<b>General Information</b>	Dispose of in accordance with all local, state and federal regulations. All empty packaging should be disposed of in accordance with Local, State, and Federal Regulations or recycled/reconditioned at an approved facility.
<b>Special Precautions for Land Fill</b>	Contact a specialist disposal company or the local waste regulator for advice.

## 14. TRANSPORT INFORMATION

### Land Transport (Australia)

ADG Code

<b>Proper Shipping Name</b>	SURFACTANT LF 164
<b>Class</b>	C2 Combustible Liquids - Flash Point >93°C, Closed Cup, Not Excluded Flammable
<b>Subsidiary Risk(s)</b>	No Data Available
<b>EPG</b>	47 Low To Moderate Hazard Substances
<b>UN Number</b>	No Data Available
<b>Hazchem</b>	No Data Available
<b>Pack Group</b>	No Data Available
<b>Special Provision</b>	SPAU01

### Land Transport (Malaysia)

ADR

<b>Proper Shipping Name</b>	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Contains Alcohol Alkoxylate)
<b>Class</b>	9 Miscellaneous Dangerous Goods and Articles
<b>Subsidiary Risk(s)</b>	No Data Available
<b>EPG</b>	47 Low To Moderate Hazard Substances
<b>UN Number</b>	3082
<b>Hazchem</b>	3Z
<b>Pack Group</b>	III
<b>Special Provision</b>	No Data Available

### Land Transport (New Zealand)

NZS5433

<b>Proper Shipping Name</b>	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Contains Alcohol Alkoxylate)
<b>Class</b>	9 Miscellaneous Dangerous Goods and Articles
<b>Subsidiary Risk(s)</b>	No Data Available
<b>EPG</b>	47 Low To Moderate Hazard Substances
<b>UN Number</b>	3082
<b>Hazchem</b>	3Z
<b>Pack Group</b>	III
<b>Special Provision</b>	No Data Available

### Land Transport (United States of America)

US DOT

<b>Proper Shipping Name</b>	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Contains Alcohol Alkoxylate)
<b>Class</b>	9 Miscellaneous Dangerous Goods and Articles
<b>Subsidiary Risk(s)</b>	No Data Available
<b>ERG</b>	171 Substances (Low to Moderate Hazard)
<b>UN Number</b>	3082
<b>Hazchem</b>	3Z
<b>Pack Group</b>	III
<b>Special Provision</b>	No Data Available

### Sea Transport

IMDG Code

<b>Proper Shipping Name</b>	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Contains Alcohol Alkoxylate)
<b>Class</b>	9 Miscellaneous Dangerous Goods and Articles
<b>Subsidiary Risk(s)</b>	No Data Available
<b>UN Number</b>	3082
<b>Hazchem</b>	3Z
<b>Pack Group</b>	III
<b>Special Provision</b>	No Data Available
<b>EMS</b>	FA,SF
<b>Marine Pollutant</b>	Yes

**Air Transport**  
IATA DGR

<b>Proper Shipping Name</b>	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Contains Alcohol Alkoxylate)
<b>Class</b>	9 Miscellaneous Dangerous Goods and Articles
<b>Subsidiary Risk(s)</b>	No Data Available
<b>UN Number</b>	3082
<b>Hazchem</b>	3Z
<b>Pack Group</b>	III
<b>Special Provision</b>	No Data Available

**National Transport Commission (Australia)**

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

<b>Dangerous Goods Classification</b>	NOT 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**

<b>General Information</b>	No Data Available
<b>Poisons Schedule (Aust)</b>	Not scheduled

**Environmental Protection Authority (New Zealand)**

Hazardous Substances and New Organisms Amendment Act 2015

<b>Approval Code</b>	HSR003165
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**National/Regional Inventories**

<b>Australia (AICS)</b>	Listed
<b>Canada (DSL)</b>	Not Determined
<b>Canada (NDSL)</b>	Not Determined
<b>China (IECSC)</b>	Not Determined
<b>Europe (EINECS)</b>	Not Determined
<b>Europe (REACH)</b>	Not Determined
<b>Japan (ENCS/METI)</b>	Not Determined

<b>Korea (KECI)</b>	Not Determined
<b>Malaysia (EHS Register)</b>	Not Determined
<b>New Zealand (NZIoC)</b>	Not Determined
<b>Philippines (PICCS)</b>	Not Determined
<b>Switzerland (Giftliste 1)</b>	Not Determined
<b>Switzerland (Inventory of Notified Substances)</b>	Not Determined
<b>Taiwan (NCSR)</b>	Not Determined
<b>USA (TSCA)</b>	Not Determined

## 16. OTHER INFORMATION

<b>Related Product Codes</b>	SUFLFA1000
<b>Revision</b>	3
<b>Revision Date</b>	18 Jul 2016
<b>Reason for Issue</b>	SDS updated
<b>Key/Legend</b>	<p>&lt; Less Than &gt; Greater Than  <b>AICS</b> Australian Inventory of Chemical Substances  <b>atm</b> Atmosphere  <b>CAS</b> Chemical Abstracts Service (Registry Number)  <b>cm<sup>2</sup></b> Square Centimetres  <b>CO<sub>2</sub></b> Carbon Dioxide  <b>COD</b> Chemical Oxygen Demand  <b>deg C (°C)</b> Degrees Celcius  <b>EPA (New Zealand)</b> Environmental Protection Authority of New Zealand  <b>deg F (°F)</b> Degrees Fahrenheit  <b>g</b> Grams  <b>g/cm<sup>3</sup></b> Grams per Cubic Centimetre  <b>g/l</b> Grams per Litre  <b>HSNO</b> Hazardous Substance and New Organism  <b>IDLH</b> Immediately Dangerous to Life and Health  <b>immiscible</b> Liquids are insoluble in each other.  <b>inHg</b> Inch of Mercury  <b>inH<sub>2</sub>O</b> Inch of Water  <b>K</b> Kelvin  <b>kg</b> Kilogram  <b>kg/m<sup>3</sup></b> Kilograms per Cubic Metre  <b>lb</b> Pound  <b>LC50</b> 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.  <b>LD50</b> 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.  <b>ltr</b> or <b>L</b> Litre  <b>m<sup>3</sup></b> Cubic Metre  <b>mbar</b> Millibar  <b>mg</b> Milligram  <b>mg/24H</b> Milligrams per 24 Hours  <b>mg/kg</b> Milligrams per Kilogram  <b>mg/m<sup>3</sup></b> Milligrams per Cubic Metre  <b>Misc</b> or <b>Miscible</b> Liquids form one homogeneous liquid phase regardless of the amount of either component present.  <b>mm</b> Millimetre  <b>mmH<sub>2</sub>O</b> Millimetres of Water  <b>mPa.s</b> Millipascals per Second  <b>N/A</b> Not Applicable  <b>NIOSH</b> National Institute for Occupational Safety and Health  <b>NOHSC</b> National Occupational Health and Safety Commission  <b>OECD</b> Organisation for Economic Co-operation and Development</p>



**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