

1. IDENTIFICATION

Product Name	Cold Pressed Orange Oil
Other Names	Orange Peel Oil, Cold Pressed
Uses	Flavour, fragrance, solvent or dispersing agent.
Chemical Family	No Data Available
Chemical Formula	Unspecified
Chemical Name	Orange, sweet, extract
Product Description	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

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
Sensitisation (Skin) - Category 1
Aspiration Hazard - Category 1
Acute Hazard To The Aquatic Environment - Category 1
Long-term Hazard To The Aquatic Environment - Category 1

Pictograms



Signal Word Danger

Hazard Statements

H226	Flammable liquid and vapour.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H304	May be fatal if swallowed and enters airways.
H410	Very toxic to aquatic life with long lasting effects.

Precautionary Statements

Prevention	P210	Keep away from heat/sparks/open flames/hot surfaces. No smoking.
	P261	Avoid breathing mist/vapours/spray.
	P273	Avoid release to the environment.
	P233	Keep container tightly closed.
	P240	Ground/bond container and receiving equipment.
	P241	Use explosion-proof electrical/ventilating/lighting and all other equipment.
	P242	Use only non-sparking tools.
	P243	Take precautionary measures against static discharge.
	P272	Contaminated work clothing should not be allowed out of the workplace.
	P280	Wear protective gloves/protective clothing/eye protection/face protection.
Response	P370 + P378	In case of fire: Use carbon dioxide (CO2), dry chemical, regular foam extinguishing agent or water spray for extinction.
	P301 + P310	IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.
	P331	Do NOT induce vomiting.
	P302 + P352	IF ON SKIN: Wash with plenty of soap and water.
	P333 + P313	If skin irritation or rash occurs: Get medical advice/attention.
	P391	Collect spillage.
	P362	Take off contaminated clothing and wash before reuse.
Storage	P403 + P235	Store in a well-ventilated place. Keep cool.
	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	6.3A	Substances that are irritating to the skin
		6.5B	Substances that are contact sensitisers
		6.1E	Substances that are acutely toxic –May be harmful, Aspiration hazard
	Environmental Hazards	9.1A	Substances that are very ecotoxic in the aquatic environment

3. COMPOSITION/INFORMATION ON INGREDIENTS

Ingredients

Chemical Entity	Formula	CAS Number	Proportion
Orange, sweet, extract	Unspecified	8028-48-6	100 %

4. FIRST AID MEASURES

Description of necessary measures according to routes of exposure

Swallowed	If swallowed: Rinse mouth, then drink 1 - 2 cups of water. Do NOT induce vomiting - Aspiration hazard. Immediately call a Poison Centre or doctor/physician. Never give anything by mouth to an unconscious person.
Eye	Eye contact: Immediately flush eyes with running water for several minutes, occasionally lifting the upper and lower eyelids. Remove contact lenses if present and easy to do. Continue rinsing for at least 15 minutes. If eye irritation persists, get medical advice/attention.
Skin	Skin contact: Remove contaminated clothing and shoes immediately. Flush skin with running water for at least 15 minutes/wash with plenty of soap and water. If skin irritation or rash 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. Apply resuscitation if victim is not breathing. Administer oxygen if breathing is difficult. Call a Poison Centre or doctor/physician if experiencing respiratory symptoms, or if you feel unwell.
Advice to Doctor	Treat symptomatically. Ensure that attending medical personnel are aware of identity and nature of the product(s) involved, and take precautions to protect themselves.
Medical Conditions Aggravated by Exposure	May cause an allergic skin reaction.

5. FIRE FIGHTING MEASURES

General Measures	If safe to do so, move undamaged containers from fire area. Cool container with flooding quantities of water until well after fire is out. Avoid getting water inside containers.
Flammability Conditions	FLAMMABLE LIQUID - May be ignited by heat, sparks or flames. Very dangerous when exposed to excessive heat or other sources of ignition such as sparks, open flames or flames of matches and cigarettes, welding operations, pilot lights and electric motors. Can accumulate static charge by flow or agitation.
Extinguishing Media	Use foam, dry chemical, Carbon dioxide, water spray or fog for extinction. Do NOT use water jets.
Fire and Explosion Hazard	Vapours may form explosive mixtures with air. Vapours may be ignited by static discharge. Vapours may travel to source of ignition and flash back. Most vapours are heavier than air and will spread along ground and will collect in low or confined areas. Containers may explode when heated. Vapours from runoff may create an explosion hazard.
Hazardous Products of Combustion	Fire may produce irritating, toxic, and/or corrosive gases, including Carbon monoxide, Carbon dioxide, smoke and other organic compounds.
Special Fire Fighting Instructions	Runoff from fire control or dilution water may pollute waterways.

Personal Protective Equipment	Self-contained breathing apparatus (SCBA) operated in positive pressure mode and complete protective clothing.
Flash Point	43 - 49 °C [Closed cup]
Lower Explosion Limit	0.7% (150°C)
Upper Explosion Limit	6.1% (262°C)
Auto Ignition Temperature	237 °C
Hazchem Code	3Y

6. ACCIDENTAL RELEASE MEASURES

General Response Procedure	Ventilate enclosed spaces before entering. ELIMINATE all ignition sources (no smoking, flares, sparks or flames). All equipment used in handling the product must be earthed. Do not touch or walk through spilled material. Avoid breathing mist/vapours. Avoid 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 absorbed material and place it into suitable containers for later disposal. Do NOT dispose directly into the environment or into the sewage system.
Containment	Stop leak if safe to do so. Contain spillage - Prevent entry into waterways, drains or confined areas. Containment techniques may include bunding, covering of drains and capping procedures. Vapour-suppressing foam may be used to control vapours; Water spray may be used to knock down or divert vapour clouds.
Decontamination	Clean area with soapy water and ventilate area.
Environmental Precautionary Measures	Collect spillage - Do not allow to enter drinking water supplier, waste water, or soil. Do not hose spills down drains, sewers or waterways. Inform respective authorities in case product reaches water or sewage system.
Evacuation Criteria	Spill or leak area should be isolated immediately. Keep unauthorised personnel away. Keep upwind and to higher ground.
Personal Precautionary Measures	Use personal protective equipment as described in Section 8. - 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 limited protection where there is a risk of ignition.

7. HANDLING AND STORAGE

Handling	Quick drench/shower facilities and eyewash fountains should be provided within the immediate work area for emergency use. Handle in accordance with good industrial hygiene, GMP and safety practice. Ensure adequate ventilation. Avoid breathing mist/vapours/spray. Avoid contact with eyes, skin and clothing. Wear protective gloves/protective clothing/eye protection/face protection. Keep away from heat and ignition sources (no smoking, flares, sparks or flames). Ground/bond container and receiving equipment. Use only non-sparking tools and explosion-proof equipment. Take precautionary measures against static discharge.
Storage	Store in a cool, dry, well-ventilated place. Keep container tightly closed. Protect from sunlight. Keep away from heat and ignition sources (no smoking, flares, sparks or flames). Keep away from strong oxidising agents, acids, strong alkalis and peroxides. Recommended storage temperature: Between -10°C and 27°C (Can be stored at ambient temperature, but material used for flavouring agent is best preserved by cool storage, below about 17°C). - To prevent oxidation, avoid long-term exposure to air. If storing partially filled containers, fill headspace with an inert gas such as Nitrogen or Carbon dioxide.
Container	Keep in the original container or suitable alternative. Suitable materials: Steel tanks or metal drums with internal protective film; Store in glass, lacquer lined steel or tin, aluminium or F/HDPE - Other plastics are NOT suitable.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

General	COMPONENT: d-Limonene (Terpene hydrocarbons) (CAS No. 5989-27-5): - American Industrial Hygiene Association (AIHA): TWA (8 h) = 30 ppm (165.6 mg/m3).
Exposure Limits	No Data Available
Biological Limits	No information available.
Engineering Measures	Use only in well-ventilated areas or with local exhaust ventilation. Promote direct mechanical ventilation and exhaust system to the outside environment. These measures help reduce exposure to product. Flameproof equipment is necessary in all areas where this chemical is used. Nearby equipment must be earthed.

Personal Protection Equipment	Respiratory protection: In case of inadequate ventilation, wear respiratory protection. Recommended filter device: Filter (Type A) for use against organic vapours. Eye/face protection: Wear appropriate eye protection to prevent eye contact. Recommended: Safety glasses/goggles or face shield. Hand protection: Wear solvent resistant gloves. Recommended glove material: Butyl rubber, Neoprene or PVC. Skin/body protection: Wear appropriate personal protective clothing to prevent skin contact. Recommended: Long sleeved shirt, long pants and closed shoes.
Special Hazards Precautions	No information available.
Work Hygienic Practices	Eating, drinking and smoking in work areas is prohibited. Wash hands thoroughly after handling and before eating, drinking or smoking. Contaminated clothing must be changed and washed before reuse. Remove clothing and protective equipment contaminated before entering eating areas.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State	Liquid
Appearance	Liquid
Odour	Characteristic, citrus, sweet
Colour	Yellow-orange to brown-red or slightly greenish
pH	No Data Available
Vapour Pressure	1.4 mmHg (20°C) - 2.0 mmHg (25°C) (@ No Data Available)
Relative Vapour Density	0.012 Air = 1
Boiling Point	175.5 - 178 °C
Melting Point	-74 - -96.9 °C
Freezing Point	approx. -75 °C
Solubility	Practically insoluble in water (13.8 mg/l @ 25°C) - Miscible with alcohol
Specific Gravity	0.838 - 0.855
Flash Point	43 - 49 °C [Closed cup]
Auto Ignition Temp	237 °C
Evaporation Rate	approx. 5.8 (Diethyl ether = 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	Log Kow = 2.78 - 4.88
Particle Size	No Data Available
Partition Coefficient	No Data Available
Saturated Vapour Concentration	No Data Available
Vapour Temperature	20 °C
Viscosity	0.99 mPa.s (Dynamic) - 1.17 mm ² /s (Kinematic) (@ 20 °C)
Volatile Percent	>92
VOC Volume	No Data Available
Additional Characteristics	No Data Available
Potential for Dust Explosion	Not applicable.
Fast or Intensely Burning Characteristics	No information available.
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 - May be ignited by heat, sparks or flames. Very dangerous when exposed to excessive heat or other sources of ignition such as sparks, open flames or flames of matches and cigarettes, welding operations, pilot lights and electric motors. Can accumulate static charge by flow or agitation. Vapours may be ignited by static discharge. Containers may explode when heated. Vapours from runoff may create an explosion hazard.
Reactions That Release Gases or Vapours	Fire may produce irritating, toxic, and/or corrosive gases, including Carbon monoxide, Carbon dioxide, smoke and other organic compounds.
Release of Invisible Flammable Vapours and Gases	Vapours may form explosive mixtures with air.

10. STABILITY AND REACTIVITY

Chemical Stability	Product is stable under normal conditions of temperature and pressure.
Conditions to Avoid	Keep away from heat and ignition sources (no smoking, flares, sparks or flames). Protect from sunlight.
Materials to Avoid	Incompatible with strong oxidising agents, acids (acidic clays and mineral acids), strong alkalis and peroxides.
Hazardous Decomposition Products	Fire/thermal decomposition may produce irritating, toxic, and/or corrosive gases, including Carbon monoxide, Carbon dioxide, smoke and other organic compounds.
Hazardous Polymerisation	No information available.

11. TOXICOLOGICAL INFORMATION

General Information	<p>Acute toxicity: Not expected to cause adverse effects following oral, dermal or inhalation exposure.</p> <p>Skin corrosion/irritation: Causes skin irritation with redness and dryness.</p> <p>Eye damage/irritation: Not expected to cause eye irritation.</p> <p>Respiratory/skin sensitisation: Not expected to cause respiratory sensitisation. May cause an allergic skin reaction.</p> <p>Germ cell mutagenicity: Not expected to cause genetic defects.</p> <p>Carcinogenicity: Not expected to cause cancer.</p> <p>Reproductive toxicity: Not expected to cause adverse effects on sexual function, fertility or development of offspring.</p> <p>STOT - single exposure: Not expected to produce specific target organ toxicity from a single exposure.</p> <p>STOT - repeated exposure: Not expected to produce specific target organ toxicity from repeated exposure.</p> <p>Aspiration toxicity: May be fatal if swallowed and enters airways.</p>
Acute	
Ingestion	<p>Acute toxicity - Oral:</p> <p>- LD50, Rat: >5,000 mg/kg</p>
Other	<p>Acute toxicity - Dermal:</p> <p>- LD50, Rabbit: >5,000 mg/kg bw (24 h)</p>
Carcinogen Category	None

12. ECOLOGICAL INFORMATION

Ecotoxicity	<p>Very toxic to aquatic life with long lasting effects.</p> <p>- Toxicity to Fish: $0.1 < LC50 \leq 1$ mg/l</p> <p>- Toxicity to Daphnia: $0.1 < EC50 \leq 1$ mg/l</p> <p>- Toxicity to Algae: $0.1 < ErC50 \leq 1$ mg/l</p>
Persistence/Degradability	Readily biodegradable (83.4% - 100% in 28 days).
Mobility	No information available.
Environmental Fate	<p>Organic product: Will increase the Chemical Oxygen Demand (COD) of environmental water. (COD = 2,850 g(O₂)/l or 3,280 g(O₂)/kg).</p> <p>Avoid release to the environment. Prevent entry into drains and waterways.</p>
Bioaccumulation Potential	Presents high bioaccumulative potential in aquatic organisms (Log Kow = 2.78 - 4.88).
Environmental Impact	No Data Available

13. DISPOSAL CONSIDERATIONS

General Information

Dispose of contents/container in accordance with local/regional/national regulations. Dispose of by landfill or incineration - Contact an approved waste disposal company for advice.

Special Precautions for Land Fill

Contaminated packaging: Empty containers should be washed thoroughly with detergent and water before being sent for reconditioning or disposal. The wash water should be treated as trade effluent.

14. TRANSPORT INFORMATION

Land Transport (Australia)

ADG Code

Proper Shipping Name	TERPENE HYDROCARBONS, N.O.S. (ORANGE OIL)
Class	3 Flammable Liquids
Subsidiary Risk(s)	No Data Available
EPG	15 Liquids - Flammable
UN Number	2319
Hazchem	3Y
Pack Group	III
Special Provision	No Data Available

Land Transport (Malaysia)

ADR

Proper Shipping Name	TERPENE HYDROCARBONS, N.O.S. (ORANGE OIL)
Class	3 Flammable Liquids
Subsidiary Risk(s)	No Data Available
EPG	15 Liquids - Flammable
UN Number	2319
Hazchem	3Y
Pack Group	III
Special Provision	No Data Available

Land Transport (New Zealand)

NZS5433

Proper Shipping Name	TERPENE HYDROCARBONS, N.O.S. (ORANGE OIL)
Class	3 Flammable Liquids
Subsidiary Risk(s)	No Data Available
EPG	15 Liquids - Flammable
UN Number	2319
Hazchem	3Y
Pack Group	III
Special Provision	No Data Available

Land Transport (United States of America)

US DOT

Proper Shipping Name	TERPENE HYDROCARBONS, N.O.S. (ORANGE OIL)
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Class	3 Flammable Liquids
Subsidiary Risk(s)	No Data Available
ERG	128 Flammable Liquids (Non-Polar / Water-Immiscible)
UN Number	2319
Hazchem	3Y
Pack Group	III
Special Provision	No Data Available

Sea Transport

IMDG Code

Proper Shipping Name	TERPENE HYDROCARBONS, N.O.S. (ORANGE OIL)
Class	3 Flammable Liquids
Subsidiary Risk(s)	No Data Available
UN Number	2319
Hazchem	3Y
Pack Group	III
Special Provision	No Data Available
EMS	F-E, S-D
Marine Pollutant	Yes

Air Transport

IATA DGR

Proper Shipping Name	TERPENE HYDROCARBONS, N.O.S. (ORANGE OIL)
Class	3 Flammable Liquids
Subsidiary Risk(s)	No Data Available
UN Number	2319
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)
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15. REGULATORY INFORMATION

General Information	Orange oil, sweet is listed in Appendix B of the SUSMP - Substances considered not to require control by scheduling (Low toxicity; Any use).
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Poisons Schedule (Aust)	Not Scheduled
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Environmental Protection Authority (New Zealand)

Hazardous Substances and New Organisms Amendment Act 2015

Approval Code	HSR002576
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National/Regional Inventories

Australia (AICS)	Listed
Canada (DSL)	Listed
Canada (NDSL)	Not Listed
China (IECSC)	Listed
Europe (EINECS)	232-433-8
Europe (REACH)	01-2119493353-35-
Japan (ENCS/METI)	Not Listed
Korea (KECI)	KE-27409
Malaysia (EHS Register)	Not Listed
New Zealand (NZIoC)	Listed
Philippines (PICCS)	Listed
Switzerland (Giftliste 1)	Not Determined
Switzerland (Inventory of Notified Substances)	Not Determined
Taiwan (NCSR)	Listed
USA (TSCA)	Not Listed

16. OTHER INFORMATION

Related Product Codes	OILORA2000, OILORA3500, OILORA5000, OILORA5500, OILORA6000
Revision	4
Revision Date	03 Jan 2017
Key/Legend	<p>< Less Than > Greater Than 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</p>

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
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