



# SAFETY DATA SHEET

Revision date: 12-Oct-2023

Revision Number 6

## Section 1: Identification

### Product identifier

**Product Name** OIL OF LEMON

**Product Code(s)** 000000033015

### Other means of identification

**CAS No.** 8008-56-8

**Chemical name** Lemon oil

**Synonyms** Lemon Oil 4% Citral; Oil Lemon 4% Citral Natural; AAOIL00499; ESLEM4CIT; Lemon Oil (GBLEM31012); Lemon Oil Cold Pressed; Oil Lemon Cold Pressed; AAOIL00500; Lemon Essence Oil; AAOIL00074; Oil of Lemon Italian 513708; Oil of Lemon Organic Certified

### Recommended use of the chemical and restrictions on use

**Recommended use** Aromatic applications.

**Uses advised against** No information available

### Details of the supplier of the safety data sheet

#### Supplier

Ixom Operations Pty Ltd (Bronson & Jacobs division) - incorporated in Australia  
Street Address: 166 Totara Street  
Mt Maunganui South  
New Zealand

Telephone Number: +64 9 309 2528

Facsimile: +64 9 0508 366 364

### Emergency telephone number

**Emergency Telephone** 0 800 734 607 (ALL HOURS)

Please ensure you refer to the limitations of this Safety Data Sheet as set out in the "Other Information" section at the end of this Data Sheet.

## Section 2: Hazard identification

Classified as a Dangerous Good according to NZS 5433 Transport of Dangerous Goods on Land; DANGEROUS GOODS.

Classified as hazardous according to criteria in the Hazardous Substances (Hazard Classification) Notice 2020.

### GHS Classification

Flammable liquids	Category 3
Aspiration hazard	Category 1
Skin corrosion/irritation	Category 2
Skin sensitization	Category 1

Acute aquatic toxicity	Category 1
Chronic aquatic toxicity	Category 1

**Label elements****Signal word**

Danger

**Hazard statements** H226 - Flammable liquid and vapor

H304 - May be fatal if swallowed and enters airways

H315 - Causes skin irritation

H317 - May cause an allergic skin reaction

H410 - Very toxic to aquatic life with long lasting effects

**Precautionary Statements - Prevention**

Avoid breathing dust/fume/gas/mist/vapors/spray.

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

Keep container tightly closed.

Ground and bond container and receiving equipment.

Use explosion-proof electrical/ ventilating / lighting/ .? / equipment.

Use non-sparking tools.

Take action to prevent static discharges.

Wash hands thoroughly after handling.

Contaminated work clothing must not be allowed out of the workplace.

Wear protective gloves/clothing and eye/face protection.

Avoid release to the environment.

**Precautionary Statements - Response**

Specific treatment (see First aid on this SDS).

Get medical advice/attention if you feel unwell.

**Skin**

IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/ shower.

If skin irritation or rash occurs: Get medical advice/attention.

Take off contaminated clothing and wash it before reuse.

**Ingestion**

IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.

Do NOT induce vomiting.

**Fire**

In case of fire: Use extinguishing media as outlined in Section 5 of this Safety Data Sheet to extinguish..

**Spill**

Collect spillage.

**Precautionary Statements - Storage**

Store locked up.

Store in a well-ventilated place. Keep cool.

**Precautionary Statements - Disposal**

Dispose of contents/container in accordance with local, regional, national, and international regulations as applicable.

**Other hazards which do not result in classification**

No information available.

### Section 3: Composition/information on ingredients

Chemical name	CAS No.	Weight-%
Lemon oil	8008-56-8	100

#### Additional information

Contains >55-95% d-limonene; <10% citral.

### Section 4: First-aid measures

#### Description of first aid measures

<b>General advice</b>	For advice, contact a Poisons Information Centre (e.g. phone Australia 13 11 26; New Zealand 0800 764 766) or a doctor. Show this safety data sheet to the doctor in attendance. Immediate medical attention is required.
<b>Inhalation</b>	Remove to fresh air and keep at rest in a position comfortable for breathing. If breathing is irregular or stopped, administer artificial respiration. Get immediate medical attention. Aspiration into lungs can produce severe lung damage. Delayed pulmonary edema may occur.
<b>Eye contact</b>	Rinse thoroughly with plenty of water for at least 15 minutes, lifting lower and upper eyelids. Consult a physician.
<b>Skin contact</b>	Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. May cause an allergic skin reaction. In the case of skin irritation or allergic reactions see a physician.
<b>Ingestion</b>	ASPIRATION HAZARD IF SWALLOWED - CAN ENTER LUNGS AND CAUSE DAMAGE. Do NOT induce vomiting. If vomiting occurs spontaneously, keep head below hips to prevent aspiration. Clean mouth with water and drink afterwards plenty of water. Never give anything by mouth to an unconscious person. Get immediate medical attention.

#### Most important symptoms and effects, both acute and delayed

**Symptoms** Itching. Rashes. Hives. Redness. Difficulty in breathing. Coughing and/ or wheezing. Dizziness.

**Effects of Exposure** No information available.

#### Indication of any immediate medical attention and special treatment needed

**Note to physicians** May cause sensitization by skin contact. Delayed pulmonary edema may occur. Treat symptomatically. Because of the danger of aspiration, emesis or gastric lavage should not be employed unless the risk is justified by the presence of additional toxic substances.

### Section 5: Fire-fighting measures

**Hazchem code** 3Y

#### Suitable Extinguishing Media

**Suitable Extinguishing Media** Foam. Dry chemical or CO<sub>2</sub>.

**Unsuitable extinguishing media** CAUTION: Use of water spray when fighting fire may be inefficient.

#### **Specific hazards arising from the chemical**

**Specific hazards arising from the chemical** Flammable liquid. Risk of ignition. Keep product and empty container away from heat and sources of ignition. Containers may explode when heated. In the event of fire, cool tanks with water spray. Runoff may create fire or explosion hazard. Product is or contains a sensitizer. May cause sensitization by skin contact. Environmentally hazardous. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.

**Hazardous combustion products** Oxides of carbon.

#### **Special protective actions for fire-fighters**

**Special protective equipment and precautions for fire-fighters** Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Use personal protection equipment.

### **Section 6: Accidental release measures**

#### **Personal precautions, protective equipment and emergency procedures**

**Personal precautions** Evacuate personnel to safe areas. Use personal protective equipment as required. See section 8 for more information. Avoid contact with skin, eyes or clothing. Avoid breathing vapors or mists. Ensure adequate ventilation. Keep people away from and upwind of spill/leak. ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area). Pay attention to flashback. Take precautionary measures against static discharges. All equipment used when handling the product must be grounded. Do not touch or walk through spilled material.

**Other information** Ventilate the area. Refer to protective measures listed in Sections 7 and 8.

**For emergency responders** Shut off ignition sources. Clear area of all unprotected personnel. Use personal protection recommended in Section 8.

#### **Environmental precautions**

**Environmental precautions** Prevent further leakage or spillage if safe to do so. Prevent product from entering drains. Do not allow to enter into soil/subsoil. Refer to protective measures listed in Sections 7 and 8. See Section 12 for additional Ecological Information.

#### **Methods and material for containment and cleaning up**

**Methods for containment** Stop leak if you can do it without risk. A vapor suppressing foam may be used to reduce vapors. Dike far ahead of spill to collect runoff water. Keep out of drains, sewers, ditches and waterways. Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal.

**Methods for cleaning up** Take precautionary measures against static discharges. Dam up. Soak up with inert absorbent material. Use non-sparking tools. Pick up and transfer to properly labeled containers.

#### **Precautions to prevent secondary hazards**

**Prevention of secondary hazards** Clean contaminated objects and areas thoroughly observing environmental regulations.

### **Section 7: Handling and storage**

**Precautions for safe handling****Advice on safe handling**

Avoid contact with skin, eyes or clothing. Avoid breathing dust/fume/gas/mist/vapors/spray. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Use grounding and bonding connection when transferring this material to prevent static discharge, fire or explosion. Use with local exhaust ventilation. Use spark-proof tools and explosion-proof equipment. Take precautionary measures against static discharges. Keep in an area equipped with sprinklers. Use personal protection equipment. Use according to package label instructions. Handle in accordance with good industrial hygiene and safety practice.

**General hygiene considerations**

Do not eat, drink or smoke when using this product. Remove and wash contaminated clothing and gloves, including the inside, before re-use. Contaminated work clothing should not be allowed out of the workplace. Regular cleaning of equipment, work area and clothing is recommended. Wash hands before breaks and immediately after handling the product. Wear suitable gloves and eye/face protection. Avoid contact with skin, eyes or clothing.

**Conditions for safe storage, including any incompatibilities****Storage Conditions**

Store locked up. Keep containers tightly closed in a cool, well-ventilated place. Keep away from heat, sparks, flame and other sources of ignition (i.e., pilot lights, electric motors and static electricity). Do not store near combustible materials. Keep in an area equipped with sprinklers. Keep in properly labeled containers. Protect from direct sunlight. Store in accordance with local regulations. Store in accordance with the particular national regulations. Store away from incompatible materials described in Section 10. Keep out of the reach of children. Keep container closed when not in use.

**Incompatible materials**

Strong oxidizing agents, strong acids, and strong bases.

**Section 8: Exposure controls/personal protection****Control parameters****Exposure Limits**

No value assigned for this specific material by the New Zealand Workplace Health & Safety Authority.

**Appropriate engineering controls****Engineering controls**

Ensure adequate ventilation, especially in confined areas. Vapour heavier than air - prevent concentration in hollows or sumps. DO NOT enter confined spaces where vapour may have collected.

**Individual protection measures, such as personal protective equipment**

The selection of PPE is dependent on a detailed risk assessment. The risk assessment should consider the work situation, the physical form of the chemical, the handling methods, and environmental factors.

OVERALLS, SAFETY SHOES, SAFETY GLASSES, GLOVES, RESPIRATOR.



Eye/face protection



Glasses.



<b>Hand protection</b>	Impervious gloves.
<b>Skin and body protection</b>	Overalls. Wear suitable protective clothing. Antistatic boots.
<b>Respiratory protection</b>	If determined by a risk assessment an inhalation risk exists, wear an organic vapour respirator meeting the requirements of AS/NZS 1715 and AS/NZS 1716.
<b>Environmental exposure controls</b>	No information available.

## Section 9: Physical and chemical properties

### Information on basic physical and chemical properties

<b>Physical state</b>	Liquid
<b>Appearance</b>	No information available
<b>Color</b>	Colourless to Greenish Yellow
<b>Odor</b>	Characteristic Lemon
<b>Odor threshold</b>	No information available

<u>Property</u>	<u>Values</u>	<u>Remarks • Method</u>
<b>pH</b>	No data available	None known
<b>Melting point / freezing point</b>	approx. -90 °C	None known
<b>Boiling point / boiling range</b>	approx. 175 °C	Initial boiling point
<b>Flash point</b>	45 - 54 °C	CC (closed cup)
<b>Evaporation rate</b>	No data available	None known
<b>Flammability (solid, gas)</b>	No data available	None known
<b>Flammability Limit in Air</b>		None known
<b>Upper flammability or explosive limits</b>	6.1	
<b>Lower flammability or explosive limits</b>	0.7	
<b>Vapor pressure</b>	approx. 2 mmHg	@ 25 °C
<b>Vapor density</b>	Approx.4.7	(air = 1)
<b>Relative density</b>	0.840 - 0.872	@ 20 °C
<b>Water solubility</b>	&Approx. 0.0138&	@ 25 °C
<b>Solubility(ies)</b>	Immiscible in water. Soluble in alcohol.	None known
<b>Partition coefficient</b>	~4.23	None known
<b>Autoignition temperature</b>	237 °C	None known
<b>Decomposition temperature</b>		None known
<b>Kinematic viscosity</b>	No data available	None known
<b>Dynamic viscosity</b>	No data available	None known

### Other information

<b>VOC Content (%)</b>	approx. >92
<b>Particle characteristics</b>	

## Section 10: Stability and reactivity

### Reactivity

<b>Reactivity</b>	No information available.
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### Chemical stability

<b>Stability</b>	Stable under normal conditions.
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### Explosion data

**Sensitivity to mechanical impact** None.**Sensitivity to static discharge** Yes.**Possibility of hazardous reactions****Possibility of hazardous reactions** Heating can cause expansion or decomposition of the material, which can lead to the containers exploding.**Conditions to avoid****Conditions to avoid** Heat, flames and sparks. Static discharge (electrostatic discharge). Avoid contact with combustible substances. Direct sunlight. Exposure to air.**Incompatible materials****Incompatible materials** Strong oxidizing agents, strong acids, and strong bases.**Hazardous decomposition products****Hazardous decomposition products** Oxides of carbon.**Section 11: Toxicological information****Acute toxicity****Information on likely routes of exposure****Product Information** No adverse health effects expected if the chemical is handled in accordance with this Safety Data Sheet and the chemical label. Symptoms or effects that may arise if the chemical is mishandled and overexposure occurs are:**Inhalation** May cause irritation. Aspiration into lungs can produce severe lung damage. May cause pulmonary edema. Pulmonary edema can be fatal.**Eye contact** May cause irritation.**Skin contact** Causes skin irritation. Repeated exposure may cause skin dryness or cracking. May cause sensitization by skin contact. Repeated or prolonged skin contact may cause allergic reactions with susceptible persons.**Ingestion** Potential for aspiration if swallowed. May cause lung damage if swallowed. Aspiration may cause pulmonary edema and pneumonitis. May be fatal if swallowed and enters airways. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.**Symptoms** Itching. Rashes. Hives. Redness. Difficulty in breathing. Coughing and/ or wheezing. Dizziness.**Acute toxicity****Numerical measures of toxicity**  
No information available

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
Lemon oil	= 2840 mg/kg ( Rat )	-	-

**Delayed and immediate effects as well as chronic effects from short and long-term exposure**

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<b>Skin corrosion/irritation</b>	Causes skin irritation.
<b>Serious eye damage/eye irritation</b>	No information available.
<b>Respiratory or skin sensitization</b>	May cause sensitization by skin contact.
<b>Germ cell mutagenicity</b>	No information available.
<b>Carcinogenicity</b>	No information available.
<b>Reproductive toxicity</b>	No information available.
<b>STOT - single exposure</b>	No information available.
<b>STOT - repeated exposure</b>	No information available.
<b>Aspiration hazard</b>	May be fatal if swallowed and enters airways.
<b>Data used to identify the health effects</b>	Refer to Section 16 for Key literature references and sources for data used to compile the SDS.

## Section 12: Ecological information

### Ecotoxicity

**Aquatic ecotoxicity** Keep out of waterways. Very toxic to aquatic life with long lasting effects.

**Terrestrial ecotoxicity** There is no data for this product.

**Persistence and degradability** No information available.

### Bioaccumulative potential

**Bioaccumulation** There is no data for this product.

### **Component Information**

#### Mobility in soil

**Mobility** No information available.

#### Other adverse effects

No information available.

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## Section 13: Disposal considerations

### Waste treatment methods

#### Waste from residues/unused products

Should not be released into the environment.  
Dispose of product in packaging/container in a way that is consistent with the Hazardous Substances (Disposal) Notice 2017 and the Act, and Hazardous Substances (Amendments and Revocations) Notice 2020.

Treat the chemical using a method that changes the characteristics or composition of the chemical so that the chemical is no longer a hazardous chemical; or export the chemical from New Zealand as waste.

Class 2, 3 and 4 chemicals - may not be disposed of into or onto a landfill or sewage facility. They may only be burnt in certain situations. Class 2.1.1, 3.1 and 4.1.1 chemicals may only be discharged into the environment as waste if the substance will not at any time come into contact with class 1 or class 5 substances; and there will be no ignition source in the vicinity of the disposal site at any time and if the substance were to ignite, no person, or place where a person may legally be, would be exposed to an unsafe level of heat radiation..

#### Contaminated packaging

Empty containers pose a potential fire and explosion hazard. Do not cut, puncture or weld containers.

For packages that have been in direct contact with hazardous substances, the person must ensure that the package is rendered incapable of containing any substance. It must be disposed of in a manner that is consistent with the requirements for disposal of the substance that it contained, taking into account the material the package is manufactured from.

Packages may only be reused or recycled if the package has been treated to remove any residual contents of the hazardous chemical (class 1, 2, 3, 4, or 5); or the contents of the residue in the package are below the threshold for the chemical to be classified as hazardous (class 6, 8, or 9 chemical)..

## Section 14: Transport information

### ROAD AND RAIL TRANSPORT

Classified as a Dangerous Good according to NZS 5433 Transport of Dangerous Goods on Land; DANGEROUS GOODS.

UN number or ID number  
Proper shipping name  
Transport hazard class(es)  
Packing group  
Hazchem code  
IATA

1197  
EXTRACTS, LIQUID, for flavour or aroma  
3  
III  
3Y  
Classified as Dangerous Goods by the criteria of the International Air Transport Association (IATA) Dangerous Goods Regulations for transport by air; DANGEROUS GOODS.

UN number  
UN proper shipping name  
Transport hazard class(es)  
Packing group

1197  
EXTRACTS, LIQUID, for flavour or aroma  
3  
III

### IMDG

Classified as Dangerous Goods by the criteria of the International Maritime Dangerous Goods Code (IMDG Code) for transport by sea; DANGEROUS GOODS.

UN number  
UN proper shipping name  
Transport hazard class(es)  
Packing group

1197  
EXTRACTS, LIQUID, for flavour or aroma  
3  
III

### Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

No information available

**Special precautions for user**

Please refer to the applicable dangerous goods regulations for additional information

## Section 15: Regulatory information

### Safety, health and environmental regulations/legislation specific for the substance or mixture

**EPA New Zealand HSNO approval code or group standard** HSR002576 - Food Additives and Fragrance Materials (Flammable)

**National regulations** There are no applicable tolerable exposure limits or environmental exposure limits according to the EPA Controls for Hazardous Substances

**Certified handlers, tracking and controlled substance license requirements** Certified handlers are required for some substances. This includes substances requiring a controlled substance license, and most explosives, vertebrates toxic agents, and certain fumigants. Acutely toxic substances which are a Category 1 or 2, such as pesticides also require Certified handlers. Please check the Health and Safety at Work Act 2015 for further information

Tracking is required for some highly hazardous substances. These substances need to be under the control of an appropriately trained person or appropriately secured. Please check the Health and Safety at Work Act 2015 for further information

Controlled substance licenses are required to possess certain explosives, vertebrate toxic agents and fumigants. See Part 7 of the Health and Safety at Work Regulation 2017 for more information

### International Regulations

**The Montreal Protocol on Substances that Deplete the Ozone Layer** Not applicable

**The Stockholm Convention on Persistent Organic Pollutants** Not applicable

**The Rotterdam Convention** Not applicable

### International Inventories

<b>NZIoC</b>	All the constituents of this material are listed on the New Zealand Inventory of Chemicals or are regulated through the Food Standards Australia New Zealand (FSANZ).
<b>TSCA</b>	Contact supplier for inventory compliance status.
<b>DSL/NDSL</b>	Contact supplier for inventory compliance status.
<b>EINECS/ELINCS</b>	Contact supplier for inventory compliance status.
<b>ENCS</b>	Contact supplier for inventory compliance status.
<b>IECSC</b>	Contact supplier for inventory compliance status.
<b>KECL</b>	Contact supplier for inventory compliance status.
<b>PICCS</b>	Contact supplier for inventory compliance status.
<b>AIIC</b>	This material is listed on the Australian Inventory of Industrial Chemicals.
<b>TCSI</b>	Contact supplier for inventory compliance status.

#### Legend:

**NZIoC** - New Zealand Inventory of Chemicals

**TSCA** - United States Toxic Substances Control Act Section 8(b) Inventory

**DSL/NDSL** - Canadian Domestic Substances List/Non-Domestic Substances List

**EINECS/ELINCS** - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances

**ENCS** - Japan Existing and New Chemical Substances

**IECSC** - China Inventory of Existing Chemical Substances

**KECL** - Korean Existing and Evaluated Chemical Substances

**PICCS** - Philippines Inventory of Chemicals and Chemical Substances

**AIIC- Australian Inventory of Industrial Chemicals**

**TCSI** - Taiwan Chemical Substance Inventory

## Section 16: Other information

**Prepared By** This Safety Data Sheet has been prepared by Ixom Operations Pty Ltd (Toxicology and SDS Services).

**Revision date:** 12-Oct-2023

**Reason(s) For Issue:** 5 Yearly Revised Primary SDS

### Revision Note:

\*\*\*Indicates updated data since last publication.

### Key or legend to abbreviations and acronyms used in the safety data sheet

#### Legend

SVHC: Substances of Very High Concern for Authorization:  
 PBT: Persistent, Bioaccumulative, and Toxic (PBT) Substances  
 vPvB: Very Persistent and very Bioaccumulative (vPvB) Substances  
 STOT: Specific Target Organ Toxicity  
 ATE: Acute Toxicity Estimate  
 LC50: 50% Lethal Concentration  
 LD50: 50% Lethal Dose

#### Legend Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

TWA	TWA (time-weighted average)	STEL	STEL (Short Term Exposure Limit)
Ceiling	Maximum limit value	*	Skin designation
**	Hazard Designation	+	Sensitizers
C	Carcinogen		

#### Key literature references and sources for data used to compile the SDS

Agency for Toxic Substances and Disease Registry (ATSDR)  
 U.S. Environmental Protection Agency ChemView Database  
 European Food Safety Authority (EFSA)  
 Environmental Protection Agency  
 Acute Exposure Guideline Level(s) (AEGL(s))  
 U.S. Environmental Protection Agency Federal Insecticide, Fungicide, and Rodenticide Act  
 U.S. Environmental Protection Agency High Production Volume Chemicals  
 Food Research Journal  
 Hazardous Substance Database  
 International Uniform Chemical Information Database (IUCLID)  
 National Institute of Technology and Evaluation (NITE)  
 Australia National Industrial Chemicals Notification and Assessment Scheme (NICNAS)  
 NIOSH (National Institute for Occupational Safety and Health)  
 National Library of Medicine's ChemID Plus (NLM CIP)  
 National Library of Medicine's PubMed database (NLM PUBMED)  
 U.S. National Toxicology Program (NTP)  
 New Zealand's Chemical Classification and Information Database (CCID)  
 Organization for Economic Co-operation and Development Environment, Health, and Safety Publications  
 Organization for Economic Co-operation and Development High Production Volume Chemicals Program  
 Organization for Economic Co-operation and Development Screening Information Data Set  
 World Health Organization

#### Disclaimer

This SDS summarises to our best knowledge at the date of issue, the chemical health and safety hazards of the material and general guidance on how to safely handle the material in the workplace. Since Ixom Operations Pty Ltd cannot anticipate or control the conditions under which the product may be used, each user must, prior to usage, assess and control the risks arising from its use of the material.

If clarification or further information is needed, the user should contact their Bronson & Jacobs representative or Ixom Operations Pty Ltd at the contact details on page 1.

Ixom Operations Pty Ltd's responsibility for the material as sold is subject to the terms and conditions of sale, a copy of which is available upon request.

Bronson and Jacobs incorporating the businesses of Woods and Woods and Keith Harris and Australian Botanical Products.

**End of Safety Data Sheet**