TRULUX SAFETY DATA SHEET

Provides critical information about hazardous chemicals.

1.1 COMPANY IDENTIFICATION

Company's Name:	Trulux Pty Ltd
Email address:	info@trulux.com.au
Website:	www.trulux.com.au
Contact number:	+61 (02) 9975 2655
Address:	C3/ 1-3 Rodborough Rd, Frenchs Forest NSW 2086 Australia

1.2 PRODUCT IDENTIFICATION

Trade name:	Macadamia Oil Refined
Reference number:	RMTR-0331A
Classification:	Refer to clause 2

1.3 RELEVANT IDENTIFIED USES OF THE SUBSTANCE OR MIXTURE AND USES ADVISED AGAINST

Identified uses:	Raw Material
Uses advised against:	None to our knowledge.

1.4 DETAILS OF THE SUPPLIER OF THE SUBSTANCE INFORMATION SHEET

Supplier's Company:	Trulux Pty Ltd
Website:	www.trulux.com.au
Address:	C3/ 1-3 Rodborough Rd, Frenchs Forest NSW 2086 Australia

1.5 EMERGENCY CONTACTS – INSTITUTIONAL CENTRES

Australia	Poisons Information Centre 13 11 26

2 HAZARDS IDENTIFICATION

Classification of the substance or mixture

NON-HAZARDOUS CHEMICAL. NON-DANGEROUS GOODS. According to the WHS Regulations and the ADG Code.

Poisons Schedule	Not Applicable
Classification	Not Applicable

Label elements

Hazard pictogram(s)	Not Applicable
Signal word	Not Applicable

Hazard statement(s)

Precautionary statement(s) Prevention	Not Applicable
Precautionary statement(s) Response	Not Applicable
Precautionary statement(s) Storage	Not Applicable
Precautionary statement(s) Disposal	Not Applicable

3 COMPOSITION/ INFORMATION ON INGREDIENTS

CAS No	%[weight]	Name
129811-19-4	See below	Macadamia Nut Oil

As triglycerides of:

CAS No	%[weight]	Name
112-80-1	60	oleic acid
2091-29-4	19	palmitoleic acid
60-33-3	1-3	linoleic acid
463-40-1	1-2	alpha-linolenic acid
Not Available	-	omega-6
Not Available	-	omega-3

4 FIRST AID MEASURES

Eye Contact

If this product comes in contact with the eyes:

- Wash out immediately with fresh running water.
- Ensure complete irrigation of the eye by keeping eyelids apart and away from the eye and moving the eyelids by occasionally lifting the upper and lower lids.
- Seek medical attention without delay; if pain persists or recurs seek medical attention.
- Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.

Skin Contact	If skin contact occurs: ● Immediately remove all contaminated clothing, including footwear. ● Flush skin and hair with running water (and soap if available). ● Seek medical attention in event of irritation
Inhalation	● If dust is inhaled, remove it from the contaminated area. ● Encourage the patient to blow their nose to ensure a clear passage of breathing. ● If irritation or discomfort persists seek medical attention.
Ingestion	● Immediately give a glass of water. ● First aid is not generally required. If in doubt, contact a Poisons Information Centre or a doctor.
Indication of any immediate medical attention and special treatment needed	Treat symptomatically.

5 FIRE FIGHTING MEASURES

Suitable extinguishing media:	Foam. Dry chemical powder. BCF (where regulations permit). Carbon dioxide. Water spray or fog - Large fires only.
Special hazards arising from the substance or mixture:	Avoid contamination with oxidising agents i.e. nitrates, oxidising acids, chlor bleaches, pool chlorine etc. as ignition may result
Advice for firefighters Fire Fighting	● Alert Fire Brigade and tell them location and nature of hazard. ● Wear full body protective clothing with breathing apparatus.

	• Prevent, by any means available, spillage from entering drains or water courses. • Use water delivered as a fine spray to control fire and cool adjacent areas. • Avoid spraying water onto liquid pools. • DO NOT approach containers suspected to be hot. • Cool fire exposed containers with water spray from a protected location. • If safe to do so, remove containers from path of fire
Advice for firefighters	• Combustible.
Fire/Explosion Hazard	• Slight fire hazard when exposed to heat or flame. • Heating may cause expansion or decomposition leading to violent rupture of containers. • On combustion, may emit toxic fumes of carbon monoxide (CO). • May emit acrid smoke. Mists containing combustible materials may be explosive. • Combustion products include: carbon dioxide (CO2) acrolein other pyrolysis products typical of burning organic material. • May emit poisonous fumes. • May emit corrosive fumes. • **CARE:** Water in contact with hot liquid may cause foaming and a steam explosion with wide scattering of hot oil and possible severe burns. Foaming may cause overflow of containers and may result in possible fire.

6 ACCIDENTAL RELEASE MEASURES

Personal precautions:	For personal protection see section 8.

Environmental precautions:	Prevent leakage or spillage. Do not discharge products into the aquatic environment without pre-treatment. See section 12
Methods for cleaning up:	
- Minor Spills	Slippery when spilt. ● Remove all ignition sources. ● Clean up all spills immediately. ● Avoid breathing vapours and contact with skin and eyes. ● Control personal contact with the substance, by using protective equipment. ● Contain and absorb spill with sand, earth, inert material or vermiculite. Wipe up. ● Place in a suitable, labelled container for waste disposal.
● Major Spills	**CARE:** Absorbent materials wetted with occluded oil must be moistened with water as they may auto-oxidize, become self heating and ignite. Some oils slowly oxidise when spread in a film and oil on clothes, mops, absorbents may autoxidise and generate heat, smoulder, ignite and burn. In the workplace oily rags should be collected and immersed in water. Slippery when split. Moderate hazard. ● Clear area of personnel and move upwind. Alert Fire Brigade and tell them location and nature of hazard. ● Wear breathing apparatus plus protective gloves. ● Prevent, by any means available, spillage from entering drains or water courses. ● No smoking, naked lights or ignition sources. ● Increase ventilation. ● Stop leak if safe to do so. ● Contain spill with sand, earth or vermiculite.

- Collect recoverable products into labelled containers for recycling.
- Absorb the remaining product with sand, earth or vermiculite.
- Collect solid residues and seal in labelled drums for disposal.
- Wash the area and prevent runoff into drains.
- If contamination of drains or waterways occurs, advise emergency services.

Personal Protective Equipment advice is contained in Section 8 of the SDS.

7 HANDLING AND STORAGE

Precautions for safe handling

Safe handling:

Rags wet / soaked with unsaturated hydrocarbons / drying oils may auto-oxidise; generate heat and, in-time, smoulder and ignite. This is especially the case where oil-soaked materials are folded, bunched, compressed, or piled together - this allows the heat to accumulate or even accelerate the reaction.

Oily cleaning rags should be collected regularly and immersed in water, or spread to dry in a safe-place away from direct sunlight or stored, immersed, in solvents in suitably closed containers.

- DO NOT allow clothing wet with material to stay in contact with skin.
- Avoid all personal contact, including inhalation. Wear protective clothing when risk of exposure occurs.
- Use in a well-ventilated area. Prevent concentration in hollows and sumps.
- DO NOT enter confined spaces until the atmosphere has been checked.

	• Avoid smoking, naked lights or ignition sources. Avoid contact with incompatible materials. • When handling, DO NOT eat, drink or smoke. • Keep containers securely sealed when not in use. • Avoid physical damage to containers. • Always wash hands with soap and water after handling. • Work clothes should be laundered separately. • Use good occupational work practice. • Observe manufacturer's storage and handling recommendations contained within this SDS. • Atmosphere should be regularly checked against established exposure standards to ensure safe working conditions.
Other information:	• Store in original containers. • Keep containers securely sealed. No smoking, naked lights or ignition sources. • Store in a cool, dry, well-ventilated area. • Store away from incompatible materials and foodstuff containers. • Protect containers against physical damage and check regularly for leaks. • Observe manufacturer's storage and handling recommendations contained within this SDS.

Conditions for safe storage, including any incompatibilities

Suitable container	• Glass container is suitable for laboratory quantities. • DO NOT use aluminium or galvanised containers. • Metal can or drum Packaging as recommended by manufacturer. • Check all containers are clearly labelled and free from leaks.

Storage incompatibility	Vegetable oils and some animal fats undergo undesirable deterioration reactions in the presence of oxygen from the air becoming rancid accompanying off-flavours and smells. The mechanism of autoxidation of vegetable oils is classically regarded as following a number of stages being: a usually slow initiation phase a usually rapid propagation and a termination phase The initiation phase involves the formation of a free radical from a triglyceride molecule in the fat: this may be promoted by the presence of heavy metals in the oil, or by heat or light. The next stage is the reaction of the triglyceride free radical with oxygen to produce a peroxide free radical, which can react with another triglyceride to produce a hydroperoxide and another triglyceride free radical. Steps 2 and 3 can repeat in a chain reaction until two peroxy free radicals collide and neutralise each other. Some drying oils produce cyclic peroxides instead of hydroperoxides. Autooxidation may also occur in saturated fatty acids and their esters. Mono Hydroperoxides are formed. Although all carbon atoms are subject to oxidation, preferential oxidation appears to occur towards the centre of the molecule. Autoxidation is assisted by higher ambient temperatures (the rate doubling for every ten degrees Centigrade rise) and by the presence of heavy metal ions, especially copper. The degree of unsaturation of the oil is also relevant to shelf-life; oils with a high linolenic fatty acid content (3 double bonds) being more prone that those with a higher saturated fatty acid content. Autoxidation can be minimized by the presence of antioxidants, which can act as free-radical inhibitors. Vegetable oils should therefore be stored in a cool place away from heat and light, and should only come into

Storage incompatibility	contact with inert (glass of stainless steel) containers which will not leach heavy metals. Blanketing under nitrogen should be considered in bulk storages. Avoid strong bases. Avoid reaction with oxidising agents · Materials soaked with plant/ vegetable derived (and rarely, animal) oils may undergo spontaneous combustion · The more unsaturated is the fatty acid component, the more susceptible is the oil to oxidation and spontaneous combustion. · Many vegetable and animal oils absorb oxygen from the air to form oxidation products. This oxidation process produces heat and the resultant increase in temperature accelerates the oxidation process. · Drying oils such as linseed, tung, poppy and sunflower oils and semi-drying oils such as soya bean, tall oil, corn, cotton and castor oils all absorb oxygen readily and thus experience the self-heating process. · Cotton fibres are readily ignited and if contaminated with an oxidisable oil, may ignite unless heat can be dissipated · Vegetable oils and some animal fats undergo undesirable deterioration reactions in the presence of oxygen from the air becoming rancid accompanying off-flavours and smells. The mechanism of autoxidation of vegetable oils is classically regarded as following a number of stages being: · a usually slow initiation phase · a usually rapid propagation · and a termination phase The initiation phase involves the formation of a free radical from a triglyceride molecule in the fat: this may be promoted by the presence of heavy metals in the oil, or by heat or light. The next stage is the reaction of the triglyceride free radical with oxygen to produce a peroxide free radical, which can react with another triglyceride to produce a hydroperoxide and another triglyceride free radical. Steps 2 and 3 can repeat in a chain reaction until two peroxy free

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8 EXPOSURE CONTROLS AND PERSONAL PROTECTION

Control Parameters

The product is not classified. No control parameters are to be mentioned.

Emergency limits

Material	TEEL-1	TEEL-2	TEEL-3
Octadecenoic acid, 9-; (Oleic acid)	220 mg/m3	2,400 mg/m3	15,000 mg/m3

Occupational Exposure Banding

Ingredients	Occupational Exposure Band Rating	Occupational Exposure Band Limit
linoleic acid	E	≤ 0.1 ppm
alpha-linolenic acid	E	≤ 0.1 ppm
Notes:	Occupational exposure banding is a process of assigning chemicals into specific categories or bands based on a chemical's potency and the adverse health outcomes associated with exposure. The output of this process is an occupational exposure band (OEB), which corresponds to a range of exposure concentrations that are expected to protect worker health	

Exposure Controls:

- General Engineering Measures: Local ventilation is usually preferred. If the ventilation is suitable, it is not essential to wear respiratory equipment.
- General Industrial Hygiene Practices: Avoid contact of chemicals with skin, inside of the eye and clothing. Ensure that eyewash stations and safety showers are close to the workstation location.

• General Hand Protections Measurements	Wear impermeable protective gloves.
• General Eye Protection Measures	Wear safety goggles.
• Other protection	Overalls P.V.C apron Barrier cream Skin cleansing cream Eye wash unit

9 PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Appearance:	Clear, pale straw yellow, tasteless liquid with a bland to slightly nutty odour; does not mix with water. It is possible to refine it to complete transparency, but the faint odour of macadamia nuts remains.
Physical state:	Liquid
Flash point (°C):	> 338 (COC)
Vapour pressure (kPa):	Negligible
Solubility in water:	Partly miscible
Vapour density (Air = 1):	> 1
Relative density (Water = 1):	0.912, 22.5 C
Volatile Component (%vol):	Negligible

10 STABILITY AND REACTIVITY

Reactivity:	See section 7
Chemical Stability:	Unstable in the presence of incompatible materials. Product is considered stable. Hazardous polymerisation will not occur.
Possibility of Hazardous:	See section 7
Conditions to Avoid:	See section 7
Incompatible Materials:	See section 7
Hazardous decomposition products:	See section 5

11 TOXICOLOGICAL INFORMATION

Information on toxicological effects:

Inhaled:	The material is not thought to produce adverse health effects or irritation of the respiratory tract (as classified by EC Directives using animal models). Nevertheless, good hygiene practice requires that exposure be kept to a minimum and that suitable control measures be used in an occupational setting. Inhalation hazard is increased at higher temperatures. Not normally a hazard due to non-volatile nature of product Inhalation of oil droplets or aerosols may cause discomfort and may produce chemical inflammation of the lungs.

	Fine mists generated from plant/ vegetable (or more rarely from animal) oils may be hazardous. Extreme heating for prolonged periods, at high temperatures, may generate breakdown products which include acrolein and acrolein-like substances.
Ingestion:	The material has NOT been classified by EC Directives or other classification systems as "harmful by ingestion". This is because of the lack of corroborating animal or human evidence. Fatty acid esters have fairly low toxicity
Skin Contact:	Skin contact is not thought to have harmful health effects (as classified under EC Directives); the material may still produce health damage following entry through wounds, lesions or abrasions. There is some evidence to suggest that the material may cause moderate inflammation of the skin either following direct contact or after a delay of some time. Repeated exposure can cause contact dermatitis which is characterised by redness, swelling and blistering. Open cuts, abraded or irritated skin should not be exposed to this material Entry into the blood-stream, through, for example, cuts, abrasions or lesions, may produce systemic injury with harmful effects. Examine the skin prior to the use of the material and ensure that any external damage is suitably protected
Eye:	Limited evidence or practical experience suggests that the material may cause eye irritation in a substantial number of individuals. Prolonged eye contact may cause inflammation characterised by a temporary redness of the conjunctiva (similar to windburn).

Chronic	Substance accumulation, in the human body, may occur and may cause some concern following repeated or long-term occupational exposure.
Toxicity	Oleic Acid Oral (rat) LD50: 25000 mg/kg[2] linoleic acid Oral (mouse) LD50: >50000 mg/kg[2]
Irritation	Oleic Acid Skin (human):15 mg/3d-I- moderate Skin (rabbit):500 mg mild linoleic acid Skin (human):75 mg/3d-I- moderate
Legend:	1. Value obtained from Europe ECHA Registered Substances - Acute toxicity 2.* Value obtained from manufacturer's SDS. Unless otherwise specified data extracted from RTECS - Register of Toxic Effect of chemical Substances

12 ECOLOGICAL INFORMATION

The product is not classified as hazardous for the environment. However, use according to good working practice and do not release it to the environment.

Persistence: Water/Soil	LOW
oleic acid	
palmitoleic acid	
linoleic acid	

alpha-linolenic acid	
Persistence: Air	LOW
oleic acid	
palmitoleic acid	
linoleic acid	
alpha-linolenic acid	

Bioaccumulative potential

oleic acid	LOW (LogKOW = 7.7294)
palmitoleic acid	HIGH (LogKOW = 6.7472)
linoleic acid	LOW (LogKOW = 7.05)
alpha-linolenic acid	HIGH (LogKOW = 6.46)

Mobility in soil

oleic acid	LOW (KOC = 11670)
palmitoleic acid	LOW (KOC = 3431)
linoleic acid	LOW (KOC = 11670)
alpha-linolenic acid	LOW (KOC = 11670)

13 DISPOSAL CONSIDERATIONS

Legislation addressing waste disposal requirements may differ by country, state and/ or territory. Each user must refer to laws operating in their area. In some areas, certain wastes must be tracked.

A Hierarchy of Controls seems to be common - the user should investigate:

- Reduction
- Reuse
- Recycling
- Disposal (if all else fails)

This material may be recycled if unused, or if it has not been contaminated so as to make it unsuitable for its intended use. If it has been contaminated, it may be possible to reclaim the product by filtration, distillation or some other means. Shelf life considerations should also be applied in making decisions of this type. Note that properties of a material may change in use, and recycling or reuse may not always be appropriate.

- DO NOT allow wash water from cleaning or process equipment to enter drains.
- It may be necessary to collect all wash water for treatment before disposal.
- In all cases disposal to sewer may be subject to local laws and regulations and these should be considered first.
- Where in doubt contact the responsible authority.
- Recycle wherever possible or consult the manufacturer for recycling options.
- Consult State Land Waste Authority for disposal. Bury or incinerate residue at an approved site.
- Recycle containers if possible, or dispose of in an authorised landfill.

14 TRANSPORT INFORMATION

Land transport (ADG)

NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

Air transport (ICAO-IATA / DGR)

NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS Sea transport

(IMDG-Code / GGVSee)

NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

Transport in bulk according to Annex II of MARPOL and the IBC code - Not Applicable

15 REGULATORY AND OTHER INFORMATION

National Inventory Status National Inventory Status

Australia - AIIC - Yes
Australia Non-Industrial Use - No (Macadamia Nut Oil; oleic acid; palmitoleic acid; linoleic acid; alpha-linolenic acid)
Canada - DSL - Yes
Canada - NDSL - No (Macadamia Nut Oil; oleic acid; palmitoleic acid; linoleic acid; alpha-linolenic acid)
China - IECSC - Yes
Europe - EINECS / ELINCS / NLP - No (Macadamia Nut Oil)
Japan - ENCS - No (Macadamia Nut Oil)
Korea - KECI - No (Macadamia Nut Oil) New Zealand - NZIoC Yes
Philippines - PICCS - Yes
USA - TSCA - No (Macadamia Nut Oil)
Taiwan - TCSI - Yes
Mexico - INSQ - No (Macadamia Nut Oil; palmitoleic acid)
Vietnam - NCI - Yes
Russia - ARIPS - No (Macadamia Nut Oil; palmitoleic acid; alpha-linolenic acid)
Legend: Yes = All CAS declared ingredients are on the inventory No = One or more of the CAS listed ingredients are not on the inventory and are not exempt from listing(see specific ingredients in brackets)

16 OTHER INFORMATION

When handled properly by qualified personnel, the product described herein does not present a significant health or safety hazard. Alteration of its characteristics by concentration, evaporation, addition or other substances, or other means may present hazards not specifically addressed herein and which must be evaluated by the user.

This sheet completes the technical sheets but it does not replace them. The information furnished herein is believed to be accurate and represents the best data currently available to us. No warranty, expressed or implied is made and Trulux Pty Ltd assumes no legal responsibility or liability whatsoever resulting from its use. This does not in any way excuse the user from knowing and applying all the regulations governing his activity. It is the sole responsibility of the user to take all precautions required in handling the product.

This listing must not be considered exhaustive. It does exonerate the user from ensuring that other legal obligations than those mentioned do not exist, relating to the use and storage of the product for which he solely is responsible.

The information and recommendations contained herein are to the best of the manufacturer's knowledge and belief accurate and reliable as of the date indicated. No representation warranty or guarantee, however, is made with regard to accuracy, reliability or completeness. Conditions of use of the material are under the control of the user; therefore, it is the user's responsibility to satisfy itself as to the suitability and completeness of such information for its own particular use.