



MATERIAL SAFETY DATA SHEETS

SECTION: 1.1 PRODUCT IDENTIFICATION

Product Name: Lime Essential Oil
Botanical Name: *Citrus aurantifolia*
Synonyms: *Limonia aurantifolia, Limon spinosum, Citrus limonia*
INCI Name: Citrus aurantifolia (Lime) oil
CAS #: 8008-26-2
County of Origin: Italy

SECTION: 1.2 COMPANY IDENTIFICATION

Company: New Directions Aromatics Inc.
Address: 6781-Columbus Road, Mississauga, ON., L5T 2G9 Canada
Telephone No: 905-362-1915
FAX: 905-362-1926

24 HOUR EMERGENCY TELEPHONE NUMBER: (613)-996-6666 CANUTEC

SECTION: 2. COMPOSITION / INFORMATION INGREDIENTS

Contents: α -pinene, β -pinene, sabinene, myrcene, limonene, γ -terpinene, terpinolene, octanal, nonanal, tetradecanal, pentadecanal, geranial, trans- α -bergaptene, caryophyllene, β -bisabolene, neryl acetate, geranyl acetate, α -terpineol, linalool.

Component	CAS#	EINECS#	%	Classification
Limonene (p-1,8-menthadiene)	5989-27-5	227-813-5	30 – 90%	R10-38-43-50/53
b-pinene	127-91-3	204-872-5	3 – 20%	R10-43-50/53-65
g-terpinene	99-85-4	202-794-6	1 – 12%	R10-65
a-pinene	80-56-8	201-291-9	1 – 4%	R10-43-50/53-65
Neral	5392-40-5	226-394-6	1 – 5%	R38-43

SECTION: 3. HAZARDS IDENTIFICATION

N/A

Medical Information: N/A

SECTION: 4. FIRST AID MEASURES

Eye Contact: Contact with eyes can produce burning sensation. Irrigate with water immediately, continue flushing eyes with water for 15 minutes. Seek medical attention if irritation persists.

Inhalation: Remove to fresh air. Give oxygen if breathing is labored and seek medical advice. Avoid casual breathing. Signs of over exposure are dizziness and nausea.

Ingestion: Rinse mouth; dilute with milk or water and consult a physician immediately. Do not induce vomiting. Never-give anything by mouth if victim is unconscious, is rapidly-losing or is Convulsing.

Skin Contact: Skin contact can produce irritation, or itching of the skin. Remove contaminated clothing Wash with soap and plenty of water. Seek medical attention if irritation persists.

SECTION: 5. FIRE FIGHTING MEASURES

Flammable Limits: Flash Point 46 °C

Extinguishing media: Carbon Dioxide, dry chemical or foam. Closed containers may build up pressure at elevated temperature



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Special Procedures:	Determine the need to evacuate or isolate the area according to your local emergency plan.
Unusual Firefighting Hazards:	None identified.
Protective Equipment:	Self-contained breathing apparatus and protective clothing should be worn when fighting fires involving essential oils or chemicals.
Combustion Product:	Carbon Monoxide, Carbon Dioxide

SECTION: 6. ACCIDENTAL RELEASE MEASURES

Personal Precautions:	Use of self-contained breathing apparatus is recommended for any major chemical spill. Refer also to section 8.
Safety Precautions:	Eliminate all ignition sources. Ventilate area. Determine the need to Evacuate or isolate the area according to your local emergency plan.
Environmental Precautions:	Keep away from drains, surface and ground water. Report spills to appropriate Authorities if required.
Methods For Cleaning Up:	Contain and collect with inert absorbent material and place in suitable container for disposal. Comply with all federal, state, and local regulation. Wipe small spills with cloth. Clean with hot water and detergent.

SECTION: 7. HANDLING AND STORAGE

Handling:	Avoid inhalation and contact with skin and eyes. Good personal hygiene practices should be used. Wash after any contact, before breaks and meals, and at the end of the work period. Contaminated clothing and shoes should be cleaned before re-use.
Storage:	Containers should be kept closed in order to minimize contamination. Store in a cool, dry, well ventilated place protected from light. Keep away from extreme heat and from freezing conditions and away from all sources of ignition Make sure the material does not come into contact with substances listed as: "Materials to Avoid".

SECTION: 8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

Eyes Protection:	The use of safety glasses is recommended. If a material is to be handled in a manner where splashing may occur, the use of splash goggles or face shield is recommended
Respiratory Protection:	In well- ventilated areas, respiratory protection is not normally required. In confined, poorly ventilated areas the use of "NIOSH" approved respiratory protection normally required (use only if trained in proper use and with acceptable oxygen level).
Protective Gloves:	Using chemical resistant gloves is recommended.
Protective Clothing:	Using chemical resistant clothing is recommended.
Protective Equipment:	An eyewash fountain and / or safety shower should be available in the work area. Acceptable industrial hygiene practices should be maintained.
Note:	These precautions are for room temperature handling. Use at elevated temperature or aerosol / spray applications may require



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additional precautions

SECTION: 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Pale yellow to yellowish green liquid.
Odor:	Characteristic lime rind odor.
Solubility:	Soluble in alcohol and oils. Insoluble in water.
Specific Gravity:	0.850 – 0.866 @ 15°C
Optical Rotation:	+35 – +60 @ 15°C
Refractive Index:	1.470 – 1.478 @ 20°C
Limonene:	42.5 – 65 %
α -Pinene:	0.5 – 3.0 %
β -Pinene:	0.4 – 18.2 %
γ -Terpinene:	0 – 7.4 %
Sabinene:	0 – 3.2 %
Extraction Method:	Cold-pressed of the peels or steam distillation of the whole ripe fruit.
Contents:	α -pinene, β -pinene, sabinene, myrcene, limonene, γ -terpinene, terpinolene, octanal, nonanal, tetradecanal, pentadecanal, geranial, trans- α -bergaptene, caryophyllene, β -bisabolene, neryl acetate, geranyl acetate, α -terpineol, linalool.

SECTION: 10. STABILITY AND REACTIVITY

Stability:	Chemically stable. This material presents no significant reactivity hazard.
Conditions to Avoid:	Avoid sparks, flame and excessive heat.
Materials to Avoid:	Strong oxidizing agents.
Flammability:	Combustible liquid.
Hazardous Polymerization:	Will not occur.
Hazardous Combustion or	None known.
Decomposition Products:	When heated to decomposition produces acid fumes and carbon monoxide smoke.

SECTION: 11. TOXICOLOGICAL INFORMATION

Inhalation:	Inhalation of high concentrations of vapor may result in irritation of eyes, nose and throat, headache, nausea, and dizziness.
Skin Contact:	Repeated or prolonged contact can cause redness, irritation and scaling of skin (Dermatitis). Adverse skin effects should be prevented by normal care and personal hygiene
Eye Contact:	May irritate eyes.
Ingestion:	Low order toxicity causing irritation of the stomach and intestines which results in nausea and vomiting.
Medical Conditions Aggravated by Exposure:	N/A May aggravate dermatitis, psoriasis and other skin conditions.
Chronic Toxicity:	May cause allergic reactions on skin
Carcinogenicity Data:	None of the components of this material are listed as a carcinogen.
Reproductive Toxicity:	No adverse effects on reproduction are known.
Acute Toxicity Values:	No data is currently available.

SECTION: 12. ECOLOGICAL INFORMATION

Very toxic to aquatic organism may cause long-term adverse effects in the aquatic environment.
Avoid any pollution of ground, surface or underground water.



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SECTION: 13. DISPOSAL CONSIDERATION

Incineration or sanitary landfill in accordance with local, provincial and federal regulations. Check with disposal expert to insure compliance

SECTION: 14. TRANSPORT INFORMATION

Chemical Identification: Oils, lime
UN No. 1169: Liquid aromatic extract.
Packaging Group: III Class: 3
US DOT Shipping Description: Check appropriate authority
IATA Shipping (Air): Check appropriate authority
IMDG Shipping Description: Check appropriate authority

SECTION: 15. REGULATORY INFORMATION

WHMIS (Canada): Class 3
HMIS (USA): Health Hazard – Fire Hazard – Reactivity –
SARA 302/ SARA 313: None
California Proposition 65: This product does not contain chemical listed per the Safe Drinking Water and Enforcement Act of 1986.
EU Labeling: R10 Flammable.
Xn R22 Harmful if swallowed.
Xi R38 Irritating to skin
S36/37/38 Wear suitable protective clothing, gloves and eye/face protection.

SECTION: 16. OTHER INFORMATION

Revision Date: January 31, 2012

SECTION: 17. DISCLAIMER

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CERTIFICATE OF ANALYSIS

Product: Lime Essential Oil
Lot No.: 11084-B18, B18-1
Best Before: May 2013

<u>Properties</u>	<u>Specifications</u>	<u>Results</u>
Appearance:	Pale yellow to yellowish green liquid.	Complies
Odor:	Characteristic lime rind odor.	Complies
Solubility:	Soluble in alcohol and oils. Insoluble in water.	Complies
Density:	0.850 – 0.866 @ 15°C	Complies
Optical Rotation:	+35 – +60 @ 15°C	Complies
Refractive Index:	1.470 – 1.478 @ 20°C	Complies
Aldehydes	5.25 %	Complies

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CERTIFICATE OF ANALYSIS

Product: Lime Essential Oil
Lot No.: 11084-A19, A19-1
Best Before: June 2013

<u>Properties</u>	<u>Specifications</u>	<u>Results</u>
Appearance:	Pale yellow to yellowish green liquid.	Complies
Odor:	Characteristic lime rind odor.	Complies
Solubility:	Soluble in alcohol and oils. Insoluble in water.	Complies
Density:	0.850 – 0.866 @ 20°C	Complies
Optical Rotation:	+35 – +60 @ 20°C	Complies
Refractive Index:	1.470 – 1.478 @ 20°C	Complies
Aldehydes	5.25 %	Complies

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CERTIFICATE OF ANALYSIS

Product: Lime Essential Oil
Lot No.: 11084-A20/B20, A20-1/B20-1
Best Before: July 2013

<u>Properties</u>	<u>Specifications</u>	<u>Results</u>
Appearance:	Pale yellow to yellowish green liquid.	Complies
Odor:	Characteristic lime rind odor.	Complies
Solubility:	Soluble in alcohol and oils. Insoluble in water.	Complies
Density:	0.850 – 0.866 @ 20°C	0.8588
Optical Rotation:	+35 – +60 @ 20°C	51.15
Refractive Index:	1.470 – 1.478 @ 20°C	1.4745
Aldehydes	5.25 %	Complies

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