SAFETY DATA SHEET

500912 LIME OXIDE

1. IDENTIFICATION

Product Description: **LIME OXIDE**

CAS # 73018-51-6

Other means of identification

Vigon Item # 500912

Recommended use Concentrated aromatic ingredient which may be used fragrance compounds according to legal and IFRA guidelines.

Recommended restrictions For Manufacturing Use Only

Company

Vigon International, Inc.
127 Airport Road
E. Stroudsburg, PA 18301
For information call: 570-476-6300
Web Site: www.vigon.com

24 Hour Emergency Response Information

INFOTRAC (ACCT# 78928);
1-800-535-5053 WITHIN THE U.S.A.
1-352-323-3500 OUTSIDE THE U.S.A.

Manufacturer/Importer/Supplier/Distributor information

Manufacturer

Company name	Vigon International, Inc.	
Address	127 Airport Road E. Stroudsburg, PA 18301 United States	
Telephone	For information call:	570-476-6300
Website	www.vigon.com	
E-mail	Not available.	
Emergency phone number	INFOTRAC 1-800-535-5053 1-352-323-3500	(ACCT# 78928); WITHIN THE U.S.A. OUTSIDE THE U.S.A.

2. HAZARD(S) IDENTIFICATION

Physical hazards	Flammable liquids	Category 3
Health hazards	Aspiration hazard	Category 1
Environmental hazards	Not classified.	

Label elements

Signal word Danger

Hazard statement Flammable liquid and vapor. May be fatal if swallowed and enters airways.

Precautionary statement

Prevention	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. Wear protective gloves/protective clothing/eye protection/face protection.
Response	IF SWALLOWED: Immediately call a POISON CENTER/doctor. Do NOT induce vomiting. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water. In case of fire: Use appropriate media to extinguish.
Storage	Store in a well-ventilated place. Keep cool. Store locked up.
Disposal	Dispose of contents/container in accordance with local/regional/national/international regulations.
Hazard(s) not otherwise classified (HNOC)	None known.
Supplemental information	100% of the mixture consists of component(s) of unknown acute dermal toxicity. 100% of the mixture consists of component(s) of unknown acute inhalation toxicity. 100% of the mixture consists of component(s) of unknown acute hazards to the aquatic environment. 100% of the mixture consists of component(s) of unknown long-term hazards to the aquatic environment.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Substances

Chemical name	Common name and synonyms	CAS number	%
LIME OXIDE	lime pyran linalool acid-isomerized 2,2,6-trimethyl-2-vinyl tetrahydropyran limettol 3,7-Dimethyl-1,6-octadien-3-ol, acid-isomerized	73018-51-6	100

Additional components

Chemical name	Common name and synonyms	CAS number	%
TERPINENE ALPHA	terpilene p-Mentha-1,3-diene 1-methyl-4-propan-2-ylcyclohexa-1,3-diene 4-iso-propyl-1-methyl-1,3-cyclohexadiene	99-86-5	20 - 30
TERPINENE GAMMA	4-iso propyl-4-methyl-1,4-cyclohexadiene p-Mentha-1,4-diene 1,4-p-Menthadiene 1-METHYL-4-(1-METHYLETHYL)-1,4-CYCLOHEXADIENE	99-85-4	10 - 20
TERPINOLENE	cyclohexene, 1-methyl-4-(1-methylethylidene)- 1-METHYL-4-PROPAN-2-YLIDENE CYCLOHEXENE p- menth-1,4,8-diene P- METH-1-EN-8-YL-FORMATE 4-iso propylidene-1-methyl cylohexene	586-62-9	10 - 20

Additional components

Chemical name	Common name and synonyms	CAS number	%
CARVENE	DIPENTENE (+)-P-MENTHA-1,8-DIENE (R)-(+)-Limonene (R)-4-Isopropenyl-1-methyl-1-cyclohexene 1- methyl-4-prop-1-en-2-ylcyclohexene	5989-27-5	1 - 10
CINEOLE-1,4	1-iso propyl-4-methyl-7-oxabicyclo(2.2.1)heptane 4- methyl-1-propan-2-yl-7-oxabicyclo[2.2.1]heptane 1,4-CINEOLE ISOCINEOLE	470-67-7	1 - 10
EUCALYPTOL	4,7,7- trimethyl-8-oxabicyclo[2.2.2]octane 1,8-cineole 1,3,3-trimethyl oxabicyclo(2.2.2)octane 1,8-oxi-do-para-menthane	470-82-6	1 - 10
ISOTERPINOLENE	3-Methyl-6-(1-methylethylidene) cyclohexene	586-63-0	1 - 10
MYRCENE	3-METHYLENE-7-METHYL - 1,6-OCTADIENE 2-METHYL-6-METHYLENE - 2,7-OCTADIENE 7-Methyl-3-methyleneocta-1,6-diene 1,6-Octadiene, 7-methyl-3-methylene-	123-35-3	1 - 10
OCIMENE	1,3,6-Octatriene, 3,7-dimethyl- 3,7-Dimethylocta-1,3,6-triene	13877-91-3	1 - 10

4. FIRST-AID MEASURES

Inhalation
If breathing is difficult, remove to fresh air and keep at rest in a position comfortable for breathing. For breathing difficulties, oxygen may be necessary. Call a physician if symptoms develop or persist.

Skin contact
Take off immediately all contaminated clothing. Get medical attention if irritation develops and persists. Wash skin thoroughly with soap and water for several minutes.

Eye contact
Remove contact lenses, if present and easy to do. Get medical attention if irritation develops and persists. Promptly wash eyes with plenty of water while lifting the eye lids.

Ingestion
Call a physician or poison control center immediately. If swallowed, rinse mouth with water (only if the person is conscious). Do not induce vomiting. If vomiting occurs, the head should be kept low so that stomach vomit doesn't enter the lungs.

Most important symptoms/effects, acute and delayed
Aspiration may cause pulmonary edema and pneumonitis. Direct contact with eyes may cause temporary irritation.

Indication of immediate medical attention and special treatment needed
Not available.

General information	Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Show this safety data sheet to the doctor in attendance.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media	Water spray, fog, CO2, dry chemical, or alcohol resistant foam.
Unsuitable extinguishing media	Do not use a solid water stream as it may scatter and spread fire.
Specific hazards arising from the chemical	Fire may produce irritating, corrosive and/or toxic gases.
Special protective equipment and precautions for firefighters	Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA. Structural firefighters protective clothing will only provide limited protection. Wear self-contained breathing apparatus with a full facepiece operated in the positive pressure demand mode when fighting fires.
Fire fighting equipment/instructions	In case of fire and/or explosion do not breathe fumes. Use standard firefighting procedures and consider the hazards of other involved materials. Move containers from fire area if you can do so without risk. Water runoff can cause environmental damage. Ventilate closed spaces before entering them. Keep run-off water out of sewers and water sources. Dike for water control.
Specific methods	Use water spray to cool unopened containers.
General fire hazards	Static charges generated by emptying package in or near flammable vapor may cause flash fire.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures	Keep unnecessary personnel away. Eliminate all sources of ignition. Avoid contact with skin or inhalation of spillage, dust or vapor. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ventilate closed spaces before entering them.
Methods and materials for containment and cleaning up	Eliminate all ignition sources (no smoking, flares, sparks or flames in immediate area). Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Absorb with inert absorbent such as dry clay, sand or diatomaceous earth, commercial sorbents, or recover using pumps. The product is immiscible with water and will spread on the water surface. Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Cover with plastic sheet to prevent spreading. Prevent product from entering drains. Absorb in vermiculite, dry sand or earth and place into containers. Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination. Never return spills in original containers for re-use. This material and its container must be disposed of as hazardous waste. Collect and dispose of spillage as indicated in section 13 of the SDS.
Environmental precautions	Retain and dispose of contaminated wash water. Avoid release to the environment. Contact local authorities in case of spillage to drain/aquatic environment. Prevent further leakage or spillage if safe to do so. Do not contaminate water.

7. HANDLING AND STORAGE

Precautions for safe handling
Do not handle or store near an open flame, heat or other sources of ignition. Take precautionary measures against static discharges. All equipment used when handling the product must be grounded. Avoid breathing vapor. Avoid contact with eyes, skin, and clothing. Avoid prolonged exposure. Wash thoroughly after handling.

Conditions for safe storage, including any incompatibilities
Keep container closed. Handle containers with care. Open slowly in order to control possible pressure release. Store in a cool, well-ventilated area.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Occupational exposure limits

US. Workplace Environmental Exposure Level (WEEL) Guides

Additional components	Type	Value
CARVENE (CAS 5989-27-5)	TWA	165.5 mg/m3
		30 ppm

Biological limit values
No biological exposure limits noted for the ingredient(s).

Appropriate engineering controls
Use explosion-proof ventilation equipment to stay below exposure limits. Adequate ventilation should be provided so that exposure limits are not exceeded.

Individual protection measures, such as personal protective equipment

Eye/face protection
Wear safety glasses with side shields (or goggles).

Skin protection

Hand protection
Chemical resistant gloves.

Other
Not available.

Respiratory protection
Respiratory protection not required. If ventilation is insufficient, suitable respiratory protection must be provided.

Thermal hazards
Wear appropriate thermal protective clothing, when necessary.

General hygiene considerations
When using do not smoke. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance
Refer to Spec Sheet

Physical state
Liquid.

Form
Liquid.

Color
Refer to Spec Sheet

Odor
Characteristic.

Odor threshold
Not available.

pH
Not available.

Melting point/freezing point
< -4 °F (< -20 °C)

Initial boiling point and boiling range
338 °F (170 °C)

Flash point
122.0 °F (50.0 °C) Closed Cup

Evaporation rate	Not available.
Flammability (solid, gas)	Not applicable.
Upper/lower flammability or explosive limits	
Flammability limit - lower (%)	Not available.
Flammability limit - upper (%)	Not available.
Explosive limit - lower (%)	Not available.
Explosive limit - upper (%)	Not available.
Vapor pressure	Not available.
Vapor density	5.3
Relative density	Not available.
Solubility(ies)	
Solubility (water)	Insoluble
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
Viscosity	Not available.
Other information	
Density	852.46 kg/m3
Explosive properties	Not explosive.
Flammability class	Combustible II estimated
Molecular formula	C10H16; C10H18O
Oxidizing properties	Not oxidizing.
Specific gravity	1.47 at 25 °C

10. STABILITY AND REACTIVITY

Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.
Chemical stability	Material is stable under normal conditions.
Possibility of hazardous reactions	No dangerous reaction known under conditions of normal use.
Conditions to avoid	Avoid heat, sparks, open flames and other ignition sources. Avoid temperatures exceeding the flash point. Contact with incompatible materials.
Incompatible materials	Strong oxidizing agents.
Hazardous decomposition products	No hazardous decomposition products if stored and handled as indicated.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Inhalation	No adverse effects due to inhalation are expected.

Skin contact	No adverse effects due to skin contact are expected.
Eye contact	Direct contact with eyes may cause temporary irritation.
Ingestion	Droplets of the product aspirated into the lungs through ingestion or vomiting may cause a serious chemical pneumonia.
Symptoms related to the physical, chemical and toxicological characteristics	Aspiration may cause pulmonary edema and pneumonitis.

Information on toxicological effects

Acute toxicity May be fatal if swallowed and enters airways.

Product	Species	Test Results
LIME OXIDE (CAS 73018-51-6)		
Acute		
Oral		
LD50	Rat	> 5000 mg/kg

Additional components	Species	Test Results
CARVENE (CAS 5989-27-5)		
Acute		
Dermal		
LD50	Rabbit	5 g/kg
Oral		
LD50	Rat	4400 mg/kg
CINEOLE-1,4 (CAS 470-67-7)		
Acute		
Dermal		
LD50	Rabbit	> 5000 mg/kg
Oral		
LD50	Rat	3100 mg/kg
EUCALYPTOL (CAS 470-82-6)		
Acute		
Dermal		
LD50	Rabbit	> 5000 mg/kg
Oral		
LD50	Rat	2480 mg/kg Remarks: Behavioral:Somnolence (general depressed activity). Behavioral:Coma.
MYRCENE (CAS 123-35-3)		
Acute		
Dermal		
LD50	Rabbit	> 5000 mg/kg

Additional components	Species	Test Results
Oral		
LD50	Rat	> 11390 mg/kg
OCIMENE (CAS 13877-91-3)		
Acute		
Oral		
LD50	Rat	> 5000 mg/kg
TERPINENE GAMMA (CAS 99-85-4)		
Acute		
Oral		
LD50	Rat	3650 mg/kg
TERPINOLENE (CAS 586-62-9)		
Acute		
Dermal		
LD50	Rabbit	> 5000 mg/kg
Oral		
LD50	Rat	4390 mg/kg
TERPINENE ALPHA (CAS 99-86-5)		
Acute		
Oral		
LD50	Rat	1680 mg/kg

Skin corrosion/irritation Prolonged skin contact may cause temporary irritation.

Serious eye damage/eye irritation Eye irritation : Vapours may cause irritation to the eyes, respiratory system and the skin.

Respiratory or skin sensitization

Respiratory sensitization Not a respiratory sensitizer.

Skin sensitization Sensitisation : Skin sensitization guinea pig
Result: Not sensitizing
HRIPT Human
Result: Not sensitizing
at 2 % in Dimethyl phthalate
Phototoxicity : Phototoxicity guinea pig
Result:negative

Germ cell mutagenicity Genotoxicity in vitro : Ames test
negative
Method: Mutagenicity (Salmonella typhimurium - reverse mutation assay)

Carcinogenicity

IARC Monographs. Overall Evaluation of Carcinogenicity

Not listed.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1052)

Not regulated.

US. National Toxicology Program (NTP) Report on Carcinogens

Not listed.

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not available.

Reproductive toxicity	This product is not expected to cause reproductive or developmental effects.
Specific target organ toxicity - single exposure	Not classified.
Specific target organ toxicity - repeated exposure	Not classified.
Aspiration hazard	May be fatal if swallowed and enters airways.

12. ECOLOGICAL INFORMATION

Ecotoxicity The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

Additional components		Species	Test Results
CARVENE (CAS 5989-27-5)			
Aquatic			
Crustacea	EC50	Water flea (Daphnia pulex)	69.6 mg/l, 48 hours
Fish	LC50	Fathead minnow (Pimephales promelas)	> 0.619 - < 0.796 mg/l, 96 hours
		Rainbow trout,donaldson trout (Oncorhynchus mykiss)	35 mg/l, 4 days
Other	EC50	Activated Sludge	3.94 mg/l
EUCALYPTOL (CAS 470-82-6)			
Aquatic			
Fish	LC50	Fathead minnow (Pimephales promelas)	> 95.4 - < 109 mg/l, 96 hours
TERPINOLENE (CAS 586-62-9)			
Aquatic			
Crustacea	LC50	Daphnia magna	2.55 mg/l, 48 h
Fish	LC50	Pimephales promelas	0.72 mg/l, 96 h

Persistence and degradability Biodegradability : Result: Not inherently biodegradable
65 %
Method: OECD Test Guideline 302 C
Result: Not readily biodegradable.
56 %
Method: OECD Test Guideline 301 F

Bioaccumulative potential No data available.

Mobility in soil No data available.

Other adverse effects No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

13. DISPOSAL CONSIDERATIONS

Disposal instructions	Do not discharge into drains, water courses or onto the ground. Do not allow this material to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches with chemical or used container. Dispose of contents/container in accordance with local/regional/national/international regulations.
Local disposal regulations	Dispose in accordance with all applicable regulations.
Hazardous waste code	Not established.
Waste from residues / unused products	Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).
Contaminated packaging	Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal.

14. TRANSPORT INFORMATION

ADN

UN number	1993
UN proper shipping name	FLAMMABLE LIQUID, N.O.S. (LIME OXIDE)
Transport hazard class(es)	3
Subsidiary class(es)	-
Packing group	III
Environmental hazards	Yes
Labels required	3

ADR

UN number	1993
UN proper shipping name	FLAMMABLE LIQUID, N.O.S. (LIME OXIDE)
Transport hazard class(es)	3
Subsidiary class(es)	-
Packing group	III
Environmental hazards	Yes
Labels required	3

RID

UN number	1993
UN proper shipping name	FLAMMABLE LIQUID, N.O.S. (LIME OXIDE)
Transport hazard class(es)	3
Subsidiary class(es)	-
Packing Group	III
Environmental Hazards	Yes
Labels required	3
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.

DOT

BULK

UN number	1993
Proper shipping name	FLAMMABLE LIQUID, N.O.S. (LIME OXIDE)
Hazard class	3
Packing group	III

Environmental hazards	
Marine pollutant	Yes
Packaging exceptions	150
Packaging bulk	242
Labels required	3

DOT

NON-BULK

Not regulated as dangerous goods.

IATA

UN number	1993
UN proper shipping name	FLAMMABLE LIQUID, N.O.S. (LIME OXIDE)
Transport hazard class(es)	3
Subsidiary class(es)	-
Packing group	III
Environmental hazards	No
Labels required	3

IMDG

UN number	1993
UN proper shipping name	FLAMMABLE LIQUID, N.O.S. (LIME OXIDE)
Transport hazard class(es)	3
Subsidiary class(es)	-
Packing group	III
Environmental hazards	
Marine pollutant	Yes
Labels required	3
Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code	Not applicable.

ADN; ADR; DOT BULK; IATA; IMDG; RID

Marine pollutant

15. REGULATORY INFORMATION

US federal regulations

This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

CERCLA Hazardous Substance List (40 CFR 302.4)

Not listed.

SARA 304 Emergency release notification

Not regulated.

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not available.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1052)

Not regulated.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

SARA 302 Extremely hazardous substance

Not listed.

SARA 311/312 Hazardous chemical: Yes

Classified hazard categories: Flammable (gases, aerosols, liquids, or solids)
Aspiration hazard

SARA 313 (TRI reporting)

Not regulated.

Other federal regulations

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Not regulated.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

Safe Drinking Water Act (SDWA): Not regulated.

US state regulations

California Proposition 65

California Proposition 65 - Carcinogens & Reproductive Toxicity (CRT): Listed substance

Not listed.

International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	Yes
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
Taiwan	Taiwan Toxic Chemical Substances (TCS)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)
A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. OTHER INFORMATION, INCLUDING DATE OF PREPARATION OR LAST REVISION

Issue date 11-26-2015

Revision date 02-21-2018

Version # 02

HMIS® ratings Health: 1*
Flammability: 2
Physical hazard: 0

Disclaimer

Vigon International, Inc. cannot anticipate all conditions under which this information and its product, or the products of other manufacturers in combination with its product, may be used. It is the user's responsibility to ensure safe conditions for handling, storage and disposal of the product, and to assume liability for loss, injury, damage or expense due to improper use. The information in the sheet was written based on the best knowledge and experience currently available. The above information relates only to this product and not to its use in combination with any other material or any particular process and is designed only as guidance for the safe handling, use, processing, storage, transportation, and disposal and should not be considered as a guarantee or quality specification. This product has not been evaluated for safe use in e-cigarettes or any vaping application where the product(s) is/are intentionally vaporized and inhaled. Vigon International, Inc. has performed no testing on these products in e-cig/vaping applications. It is the sole responsibility of the individual(s) purchasing this product to assess its' safety in the final application. The above information relates only to this product and not to its use in combination with any other material or any particular process and is designed only as guidance for the safe handling, use, processing, storage, transportation, disposal, and should not be considered as a guarantee or quality specification. The above information is based on data provided by and collected from recognized sources such as distributors, manufacturers, and technical groups and is considered to be accurate to the best of Vigon's knowledge as of the date of this document. It is the responsibility of the user to review all safety information about this product and determine its safety and suitability in their own processes and operations. Appropriate warnings and safe handling procedures should be provided to all handlers and users, taking into account the intended use and the specific conditions and factors relating to such use in accordance with all applicable laws and regulations.

Revision information

This document has undergone significant changes and should be reviewed in its entirety.