SECTION 1. IDENTIFICATION

Product name	:	Linalyl Acetate
Substance name	:	3,7-Dimethyl-1,6-octadien-3-yl acetate

Manufacturer or supplier's details

Company name of supplier	:	DSM Nutritional Products Ltd.
Address	:	PO Box 2676 Basel 4002
Telephone	:	+41618158888
Telefax	:	+41618157253
Emergency telephone number	:	+41 848 00 11 77 (Carechem 24 International)
E-mail address of person responsible for the SDS	:	sds.nutritionalproducts@dsm.com

Recommended use of the chemical and restrictions on use

Recommended use	:	Ingredient for fragrances

SECTION 2. HAZARDS IDENTIFICATION

GHS classification in accordance with 29 CFR 1910.1200

Flammable liquids	:	Category 4
Skin irritation	:	Category 2
Eye irritation	:	Category 2A
Skin sensitisation	:	Sub-category 1B

GHS label elements

Hazard pictograms :

Signal word : Warning

Hazard statements : H227 Combustible liquid.
H315 Causes skin irritation.
H317 May cause an allergic skin reaction.
H319 Causes serious eye irritation.

Precautionary statements :

Prevention:

P210 Keep away from heat/sparks/open flames/hot surfaces. No smoking.
P261 Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.
P264 Wash skin thoroughly after handling.
P272 Contaminated work clothing should not be allowed out of the workplace.

P280 Wear protective gloves/ eye protection/ face protection.

Response:

P302 + P352 IF ON SKIN: Wash with plenty of soap and water.
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P333 + P313 If skin irritation or rash occurs: Get medical advice/ attention.
P337 + P313 If eye irritation persists: Get medical advice/ attention.
P362 Take off contaminated clothing and wash before reuse.
P370 + P378 In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.

Storage:

P403 + P235 Store in a well-ventilated place. Keep cool.

Disposal:

P501 Dispose of contents/ container to an approved waste disposal plant.

Other hazards

None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Synonyms	:	1,6-Octadien-3-ol, 3,7-dimethyl-, acetate LA
Molecular formula	:	C12 H20 O2
Brief description of the product	:	Substance
Substance name	:	3,7-Dimethyl-1,6-octadien-3-yl acetate
CAS-No.	:	115-95-7

Hazardous components

Chemical name	CAS-No.	Concentration (% w/w)
linalyl acetate	115-95-7	>= 90 - <= 100

SECTION 4. FIRST AID MEASURES

General advice	:	Move out of dangerous area. Show this safety data sheet to the doctor in attendance.
If inhaled	:	Move to fresh air. Consult a physician after significant exposure.
In case of skin contact	:	Take off contaminated clothing and shoes immediately. Wash off with soap and plenty of water. If symptoms persist, call a physician.
In case of eye contact	:	Immediately flush eye(s) with plenty of water. Remove contact lenses. Protect unharmed eye.

Keep eye wide open while rinsing.
If eye irritation persists, consult a specialist.

If swallowed : Clean mouth with water and drink afterwards plenty of water.
Do not give milk or alcoholic beverages.
Never give anything by mouth to an unconscious person.
Obtain medical attention.

Most important symptoms and effects, both acute and delayed : No specific symptoms known.

Notes to physician : Treat symptomatically.

SECTION 5. FIREFIGHTING MEASURES

Suitable extinguishing media : Alcohol-resistant foam
Dry chemical
Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable extinguishing media : High volume water jet

Specific hazards during firefighting : None known.

Further information : Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.

Special protective equipment for firefighters : In the event of fire, wear self-contained breathing apparatus.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures : Use personal protective equipment.
Ensure adequate ventilation.

Environmental precautions : Try to prevent the material from entering drains or water courses.

Methods and materials for containment and cleaning up : Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust).
Keep in suitable, closed containers for disposal.

SECTION 7. HANDLING AND STORAGE

Advice on protection against fire and explosion : Take necessary action to avoid static electricity discharge.
Product will burn under fire conditions.

Advice on safe handling : Provide sufficient air exchange and/or exhaust in work rooms.

Avoid contact with skin and eyes.
For personal protection see section 8.
Smoking, eating and drinking should be prohibited in the ap-

plication area.

Conditions for safe storage : To maintain product quality, do not store in heat or direct sunlight.

Keep container tightly closed and dry.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Contains no substances with occupational exposure limit values.

Hazardous components without workplace control parameters

Components	CAS-No.
linalyl acetate	115-95-7

Personal protective equipment

Respiratory protection : No personal respiratory protective equipment normally required.

In the case of vapour formation use a respirator with an approved filter.

Hand protection

Material	:	Nitrile rubber
Break through time	:	480 min
Glove thickness	:	>= 0.33 mm
Remarks	:	butyl-rubber Viton (R) Consider the hazard characteristics of this product and any special workplace conditions when selecting the appropriate type of protective gloves.

Eye protection : Safety glasses with side-shields

Skin and body protection : Choose body protection according to the amount and concentration of the dangerous substance at the work place.

Hygiene measures : Handle in accordance with good industrial hygiene and safety practice.
Wash hands before breaks and at the end of workday.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Appearance	:	clear liquid
Colour	:	colourless
Odour	:	fresh, citrous-like
Odour Threshold	:	No information available.
pH	:	No data available
Melting point/range	:	< -100 °C (OECD Test Guideline 102)
Boiling point/boiling range	:	220 °C (1,013.25 hPa)
Flash point	:	191.3 °F (88.5 °C)

		Method: DIN 51758
Evaporation rate	:	not determined
Flammability (solid, gas)	:	The substance or mixture does not emit flammable gases in contact with water.
Lower explosion limit	:	not determined
Upper explosion limit	:	not determined
Vapour pressure	:	0.13 hPa (25 °C; OECD Test Guideline 104) 0.79 hPa (50 °C; OECD Test Guideline 104)
Relative vapour density	:	not determined
Density	:	ca. 0.903 g/cm3 (20 °C)
Water solubility	:	30 mg/l (20 °C)
Solubility in other solvents	:	various organic solvents: soluble
Partition coefficient: n-octanol/water	:	log Pow 3.9 (25 °C; OECD Test Guideline 107)
Auto-ignition temperature	:	not pyrophoric
Ignition temperature	:	518 °F (270 °C) (at 1,008 hPa, DIN 51794)
Thermal decomposition	:	Decomposes on heating. Violent runaway reaction can occur.
Viscosity, dynamic	:	2.5 mPa.s (20 °C, OECD Test Guideline 114)
Explosive properties	:	Not explosive
Oxidizing properties	:	Not oxidizing

Other information

Molecular weight	:	196.29 g/mol
Surface tension	:	28 mN/m

SECTION 10. STABILITY AND REACTIVITY

Reactivity	:	No hazards to be specially mentioned.
Chemical stability	:	Stable under recommended storage conditions.
Possibility of hazardous reactions	:	Possible incompatibility with materials listed under section 10.5.
Conditions to avoid	:	Heat
Incompatible materials	:	Bases Strong acids Oxidizing agents
Hazardous decomposition products	:	Carbon monoxide, carbon dioxide and unburned hydrocarbons (smoke).

SECTION 11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure	:	Skin Absorption

Acute oral toxicity	:	LD50 (Rat): > 9,000 mg/kg
	:	LD50 (Mouse): 12,000 mg/kg
Acute inhalation toxicity	:	LCLo (lowest lethal concentration) (Rat, 8 h): 18.94 mg/l
Acute dermal toxicity	:	LD50 (Rabbit): > 5,000 mg/kg
Skin irritation	:	Skin irritation (Rabbit, OECD Test Guideline 404)
Eye irritation	:	Eye irritation (Rabbit, OECD Test Guideline 405)
Sensitisation	:	The product is a skin sensitiser, sub-category 1B. (Mouse, Local lymph node assay (LLNA), OECD Test Guideline 429)
Genotoxicity in vitro	:	not mutagenic, not genotoxic (Various test systems)
Genotoxicity in vivo	:	not genotoxic (Mouse, Bone marrow, Mutagenicity (micronucleus test)) Test performed using a similar product.

Carcinogenicity

IARC	No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
OSHA	No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.
NTP	No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

Reproductive toxicity	:	Test performed using a similar product. No indication for adverse effects on fertility known. NOAEL: 365 mg/kg bw/d (Rat)
Teratogenicity	:	Test performed using a similar product. not teratogenic not embryotoxic NOAEL: 1,000 mg/kg bw/d (Rat, Oral, OECD Test Guideline 414)
STOT - single exposure (Acute exposure)	:	The substance or mixture is not classified as specific target organ toxicant, single exposure.
STOT - repeated exposure	:	NOAEL (Oral, Rat) : 117 mg/kg bw/d Subacute toxicity study (28 days)

Test performed using a similar product.
(OECD Test Guideline 407)

Further information : May cause irritation of respiratory tract.

Aspiration toxicity : No aspiration toxicity classification

SECTION 12. ECOLOGICAL INFORMATION

Toxicity

Toxicity to fish : Cyprinus carpio (Carp)
LC0 (96 h) 7.9 mg/l
(OECD Test Guideline 203)
: LC50 (96 h) 11 mg/l

Toxicity to daphnia and other aquatic invertebrates : Daphnia magna (Water flea)
EC50 (48 h) 15 mg/l
(OECD Test Guideline 202)

Toxicity to algae : Desmodesmus subspicatus (green algae)
ErC50 (72 h) 62 mg/l
(OECD Test Guideline 201)
: NOEC (72 h) 9.6 mg/l
(OECD Test Guideline 201)

Toxicity to bacteria : activated sludge
EC20 (0.5 h) > 1,000 mg/l

Persistence and degradability

Biodegradability : Readily biodegradable.
70 - 80 % (28 d)
(OECD Test Guideline 301F)

Photodegradation : Decomposes rapidly in contact with light.
Half-life (direct photolysis): 3.31 h (calculated value) (Air, 25 °C)
(calculated value)

Stability in water : DT50: < 1 d (pH 4, Tested according to Directive 92/69/EEC.)

: DT50: < 1 d (pH 7)

: DT50: < 1 d (pH 9)

Bioaccumulative potential

Bioaccumulation : Bioconcentration factor (BCF): 174
Bioaccumulation is unlikely.

Partition coefficient: n-octanol/water : log Pow 3.9 (25 °C ; OECD Test Guideline 107)

Mobility in soil

Mobility : The product evaporates slowly.
Distribution among environmental compartments : Adsorption/Soil
log Koc 2.71 (calculated value)

Stability in soil : Not expected to adsorb on soil.
Surface tension : 28 mN/m

Results of PBT and vPvB assessment

Assessment : This substance is not considered to be persistent, bioaccumulating and toxic (PBT).
: This substance is not considered to be very persistent and very bioaccumulating (vPvB).

Other adverse effects

Regulation 40 CFR Protection of Environment; Part 82 Protection of Stratospheric Ozone - CAA Section 602 Class I Substances
Remarks This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).

Additional ecological information : Harmful to aquatic organisms.

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

Waste from residues : User must determine if any wastes generated exhibit hazardous characteristics as per 40 CFR Part 261 or other national / local legislation.

Discharge into the environment must be avoided.
Do not contaminate ponds, waterways or ditches with chemical or used container.
Do not dispose of waste into sewer.
Offer surplus and non-recyclable solutions to a licensed disposal company.

Contaminated packaging : Dispose of as unused product.
Do not re-use empty containers.

SECTION 14. TRANSPORT INFORMATION

International Regulations

UNRTDG
Not regulated as a dangerous good

IATA-DGR
Not regulated as a dangerous good

IMDG-Code
Not regulated as a dangerous good

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

Not applicable for product as supplied.

National Regulations

49 CFR

UN/ID/NA number	:	NA 1993
Proper shipping name	:	Combustible liquid, n.o.s. (linalyl acetate)
Class	:	CBL
Packing group	:	III
Labels	:	None
ERG Code	:	128
Marine pollutant	:	no
Remarks	:	Above applies only to containers over 119 gallons or 450 liters. Not regulated if shipped in packages less than or equal to 119 gallons (450 liters).

Special precautions for user

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

SECTION 15. REGULATORY INFORMATION

EPCRA - Emergency Planning and Community Right-to-Know Act

CERCLA Reportable Quantity

This material does not contain any components with a CERCLA RQ.

SARA 304 Extremely Hazardous Substances Reportable Quantity

This material does not contain any components with a section 304 EHS RQ.

SARA 302 Extremely Hazardous Substances Threshold Planning Quantity

This material does not contain any components with a section 302 EHS TPQ.

SARA 311/312 Hazards	:	Flammable (gases, aerosols, liquids, or solids) Respiratory or skin sensitisation Skin corrosion or irritation Serious eye damage or eye irritation
SARA 313	:	This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

Clean Air Act

This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).
This product does not contain any hazardous air pollutants (HAP), as defined by the U.S. Clean Air Act Section 112 (40 CFR 61).
This product does not contain any chemicals listed under the U.S. Clean Air Act Section 112(r) for Accidental Release Prevention (40 CFR 68.130, Subpart F).
This product does not contain any chemicals listed under the U.S. Clean Air Act Section 111 SOCMI Intermediate or Final VOC's (40 CFR 60.489).

Clean Water Act

This product does not contain any Hazardous Substances listed under the U.S. CleanWater Act, Section 311, Table 116.4A.
This product does not contain any Hazardous Chemicals listed under the U.S. CleanWater Act, Section 311, Table 117.3.
This product does not contain any toxic pollutants listed under the U.S. Clean Water Act Section 307

US State Regulations

Massachusetts Right To Know

No components are subject to the Massachusetts Right to Know Act.

Pennsylvania Right To Know

linalyl acetate 115-95-7

Maine Chemicals of High Concern

Product does not contain any listed chemicals

Vermont Chemicals of High Concern

Product does not contain any listed chemicals

Washington Chemicals of High Concern

Product does not contain any listed chemicals

TSCA list

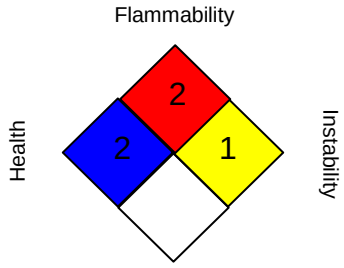
No substances are subject to a Significant New Use Rule.

No substances are subject to TSCA 12(b) export notification requirements.

SECTION 16. OTHER INFORMATION

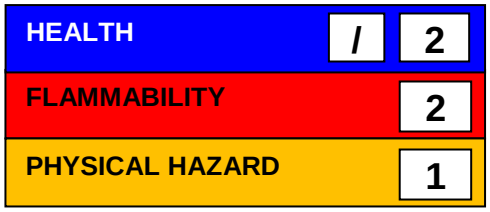
Further information

NFPA 704:



Special hazard.

HMIS® IV:



HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. The "*" represents a chronic hazard, while the "/" represents the absence of a chronic hazard.

Full text of other abbreviations

AICS - Australian Inventory of Chemical Substances; ASTM - American Society for the Testing of Materials; bw - Body weight; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DOT - Department of Transportation; DSL - Domestic

Substances List (Canada); ECx - Concentration associated with x% response; EHS - Extremely Hazardous Substance; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; HMIS - Hazardous Materials Identification System; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; MSHA - Mine Safety and Health Administration; n.o.s. - Not Otherwise Specified; NFPA - National Fire Protection Association; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; RCRA - Resource Conservation and Recovery Act; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RQ - Reportable Quantity; SADT - Self-Accelerating Decomposition Temperature; SARA - Superfund Amendments and Reauthorization Act; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative
ACGIH = American Conference of Governmental Industrial Hygienists. CFR = Code of Federal Regulations. EPA = Environmental Protection Agency. NIOSH = National Institute of Occupational Safety and Health. OSHA = Occupational Safety and Health Administration. STEL = Short term exposure limit. TLV = Threshold Limit Value. TWA = Time Weighted Average.

Revision Date : 11/27/2018

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

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