1. Product and Company Identification

Product name: Linalyl acetate
Product code: 04 2596 6
Company information: Manufacturer: DSM Nutritional Products AG
Wurmisweg 576
CH-4303 Kaiseraugst
Switzerland

Phone: +41-61/688 33 33
Fax: +41-61/688 33 30

2. Composition/Information on ingredients

Characterization: chemical intermediate
fine fragrance in perfumery; odorous substance in soaps and detergents

Chemical name: 3,7-Dimethyl-1,6-octadien-3-yl-acetate
Synonyms:
- Linalool acetate
- Acetic acid linalool ester

CAS number: 115-95-7
EINECS number: 204 116 4
Ro number: Ro 02-8282/000
Empirical formula: C_{12}H_{20}O_{2}
Molecular mass: 196.29 g/mol

3. Hazards identification

Most important hazards: - Irritating to skin.
## 4. First-aid measures

<table>
<thead>
<tr>
<th>Condition</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Eye contact</strong></td>
<td>- rinse immediately with tap water for 10 minutes - open eyelids forcibly</td>
</tr>
<tr>
<td></td>
<td>- consult a physician if irritation persists</td>
</tr>
<tr>
<td><strong>Skin contact</strong></td>
<td>- remove contaminated clothes, wash affected skin with water and soap - do not use any solvents</td>
</tr>
<tr>
<td></td>
<td>- consult a physician if skin irritation persists</td>
</tr>
<tr>
<td><strong>Inhalation</strong></td>
<td>- remove the casualty to fresh air and keep him/her calm</td>
</tr>
<tr>
<td></td>
<td>- in the event of symptoms get medical treatment</td>
</tr>
<tr>
<td><strong>Note to physician</strong></td>
<td>- treat symptomatically</td>
</tr>
</tbody>
</table>

## 5. Fire-fighting measures

| Suitable extinguishing media | - foam, powder, carbon dioxide |
| Unsuitable extinguishing media | - use water spray for cooling purposes only (fat explosion hazard) |
| Protection of fire-fighters | - precipitate gases/vapours/mists with water spray |

## 6. Accidental release measures

| Personal precautions | - evacuate area, ventilate |
| Methods for cleaning up | - collect spills with inert adsorbent and hand over to waste removal |

## 7. Handling and storage

### Handling

| Technical measures | - processing in closed systems, if possible superposed by inert gas (e.g. nitrogen) |
|                   | - local exhaust ventilation necessary                                                     |
|                   | - take precautionary measures against electrostatic charging                                |
| Suitable materials | - stainless steel, glass, aluminium, enamel                                                |
|                   | - test plastics before use                                                                 |
| Unsuitable materials | - iron                                                                                   |

### Storage

| Storage conditions | - cool and dry                                                             |
|                   | - protected from light                                                      |
| Packaging materials | - tightly closing enamel, glass, coated steel (protective lacquer), tin plated |
| Note              | - when stored for more than one year, quality should be checked before use |
Linalyl acetate

8. Exposure controls/Personal protection

Engineering Measures
- see 7.

Monitoring
Analytics
- adsorption on activated charcoal tubes, desorption and gas chromatographic determination

Personal protective equipment
Respiratory protection
- respiratory protection not necessary during normal operations
- in case of olfactory nuisance: respirator with independent air supply or mask with activated charcoal filter

Hand protection
- protective gloves (e.g., made of NBR Acrylnitril-Butadien-Rubber)

Eye protection
- safety glasses

9. Physical and chemical properties

Colour
colourless

Form
liquid

Odour
like bergamot-lavender

Density
0.895 g/cm³ (20 °C)

Refraction index
nD²⁰ = 1.452

Solubility
< 1 g/l, water (20 °C)
soluble, ethanol
soluble, diethyl ether

Partition coefficient
log P ow = 3.9 (octanol/water)
(Shake Flask Method, OECD No. 107)

Hydrolysis
98 % (2.4 h, pH 4, 50 °C)
97 % (2.4 h, pH 7, 50 °C)
96 % (2.4 h, pH 9, 50 °C)
hydrolytically unstable, extrapolated half-life time at 25 °C: < 24 h
(OECD no. 111 - EEC 92/69, C.7; pretest)

Melting temperature
< 0 °C

Boiling temperature
220 °C

Vapour pressure
0.006097 hPa (20 °C)
322.227 hPa (180 °C)

Flash point (liquid)
84 °C

Ignition point (liquid)
250 °C
Linalyl acetate

10. Stability and reactivity

Stability - stable under the conditions mentioned in chapter 7
Conditions to avoid - light
Materials to avoid - atmospheric oxygen, oxidizing agents, acids, iron

11. Toxicological information

Acute toxicity
- \( \text{LD}_{50} \) 14'550 mg/kg (oral, rat)
- \( \text{LD}_{50} \) 13'360 mg/kg (oral, mouse)

Local effects
- skin: strongly irritant (rabbit)
- skin: moderately irritating (guinea pig)
- skin: non-irritable (miniature pig)
- skin: non-irritant (man)
- skin: non-irritant (rabbit); (5% in ethanol)

Mutagenicity
- not mutagenic (Ames test; OECD No. 471 (Salmonella typhimurium))
- does not induce chromosomal aberrations in vitro (lymphocyte test; OECD No. 473 (Mammalian Cytogenic Test))

12. Ecological information

Ready biodegradability
- readily biodegradable
  75 %, 28 days
  (MITI Test I, OECD No. 301 C)

Ecotoxicity
- moderately toxic for fish (carp)
  \( \text{LC}_{0} \) (96 h) 7.9 mg/l
  \( \text{LC}_{50} \) (96 h) 11 mg/l
  (OECD No. 203)
- moderately toxic for planktonic crustaceans (Daphnia magna)
  \( \text{EC}_{50} \) (48 h) 15 mg/l
  NOEC (48 h) 10 mg/l
  (OECD No. 202)
- moderately toxic for algae (Scenedesmus subspicatus)
  \( \text{Ec}_{50} \) (72 h) 16 mg/l
  \( \text{ErC}_{50} \) (72 h) 62 mg/l
  NOEC (72 h) < 4.4 mg/l
  (OECD No. 201)
- barely toxic for microorganisms (activated sludge)
  \( \text{EC}_{50} \) > 100 mg/l
  (OECD No. 209)

Air pollution
- observe local/national regulations

13. Disposal considerations

Waste from residues
- incinerate in qualified installation with flue gas scrubbing
- observe local/national regulations regarding waste disposal
<table>
<thead>
<tr>
<th>14. Transport information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Note</td>
</tr>
<tr>
<td>- not classified by transport regulations</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>15. Regulatory information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Classification and labelling according to EU directives</td>
</tr>
<tr>
<td>R38</td>
</tr>
<tr>
<td>Water hazard class (Germany)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>16. Other information</th>
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<tbody>
<tr>
<td>Use</td>
</tr>
<tr>
<td>- intermediate</td>
</tr>
<tr>
<td>- fragrance and flavouring</td>
</tr>
<tr>
<td>Safety-lab number</td>
</tr>
<tr>
<td>- BS-3949</td>
</tr>
<tr>
<td>Note</td>
</tr>
<tr>
<td>- Silab-reports: No.80-42, No. 81-3 (Giv.)</td>
</tr>
<tr>
<td>Edition documentation</td>
</tr>
<tr>
<td>- changes from previous version in sections 1, 4, 5, 8, 9, 11, 12, 15, 16</td>
</tr>
</tbody>
</table>

**Important Notice**

DSM N.V., headquartered in Heerlen, The Netherlands, has acquired the vitamins, carotenoids, enzymes, food and feed ingredients, cosmetics ingredients and fine chemicals business (VFC Business) of the Roche group of companies, headquartered in Basel, Switzerland. Within the United States, DSM Nutritional Products, Inc. has purchased certain assets and assumed certain liabilities of the VFC Business formally conducted by Roche Vitamins Inc. Please note that corporate names, trade names, trade and service marks and domain names containing the word "Roche" and the "Roche" logo will continue to appear on our business documentation during our transition. We appreciate your understanding and cooperation as we complete our rebranding program. Should you have any questions, or if DSM can be of further assistance to you, please do not hesitate to contact your Account Manager or our Account Management Center at: +41-61/688 33 33.