

## SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

Revision Date 07.04.2020

Version 3.7

**SECTION 1. Identification of the substance/mixture and of the company/undertaking****1.1 Product identifier**

|                           |  |
|---------------------------|--|
| Catalogue No.             | 822048   |
| Product name              | 1-Dodecene for synthesis   |
| REACH Registration Number | A registration number is not available for this substance as the substance or its use are exempted from registration according to Article 2 REACH Regulation (EC) No 1907/2006, the annual tonnage does not require a registration or the registration is envisaged for a later registration deadline. |
| CAS-No.                   | 112-41-4   |

**1.2 Relevant identified uses of the substance or mixture and uses advised against**

|                 |   |
|-----------------|---|
| Identified uses | Chemical for synthesis<br>For additional information on uses please refer to the Merck Chemicals portal ( <a href="http://www.merckgroup.com">www.merckgroup.com</a> ). |
|-----------------|---|

**1.3 Details of the supplier of the safety data sheet**

|                        |   |
|------------------------|---|
| Company                | Merck KGaA * 64271 Darmstadt * Germany * Phone: +49 6151 72-0                         |
| Responsible Department | LS-QHC * e-mail: <a href="mailto:prodsafe@merckgroup.com">prodsafe@merckgroup.com</a> |

**1.4 Emergency telephone number** **Please contact the regional company representation in your country.****SECTION 2. Hazards identification****2.1 Classification of the substance or mixture****Classification (REGULATION (EC) No 1272/2008)**

Aspiration hazard, Category 1, H304

For the full text of the H-Statements mentioned in this Section, see Section 16.

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## 2.2 Label elements

### Labelling (REGULATION (EC) No 1272/2008)

*Hazard pictograms*



*Signal word*

Danger

*Hazard statements*

H304 May be fatal if swallowed and enters airways.

EUH066 Repeated exposure may cause skin dryness or cracking.

*Precautionary statements*

Response

P301 + P330 + P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

### Reduced labelling (≤125 ml)

*Hazard pictograms*



*Signal word*

Danger

*Hazard statements*

H304 May be fatal if swallowed and enters airways.

*Precautionary statements*

P301 + P330 + P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

Contains: Dodec-1-ene

CAS-No. 112-41-4

## 2.3 Other hazards

None known.

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## SECTION 3. Composition/information on ingredients

### 3.1 Substance

|            |   |                                     |
|------------|---|-------------------------------------|
| Formula    | $\text{CH}_3(\text{CH}_2)_9\text{CH}=\text{CH}_2$ | $\text{C}_{12}\text{H}_{24}$ (Hill) |
| EC-No.     | 203-968-4   |                                     |
| Molar mass | 168,32 g/mol                                      |                                     |

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## **Hazardous components (REGULATION (EC) No 1272/2008)**

*Chemical name (Concentration)*

| CAS-No. | Registration number | Classification |
|---------|---------------------|----------------|
|---------|---------------------|----------------|

Dodec-1-ene ( $\geq 50\%$  -  $\leq 100\%$ )

112-41-4 \*)

Aspiration hazard, Category 1, H304

\*) A registration number is not available for this substance as the substance or its use are exempted from registration according to Article 2 REACH Regulation (EC) No 1907/2006, the annual tonnage does not require a registration or the registration is envisaged for a later registration deadline.

For the full text of the H-Statements mentioned in this Section, see Section 16.

### **3.2 Mixture**

Not applicable

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## **SECTION 4. First aid measures**

### **4.1 Description of first aid measures**

After inhalation: fresh air.

In case of skin contact: Take off immediately all contaminated clothing. Rinse skin with water/ shower.

After eye contact: rinse out with plenty of water. Remove contact lenses.

After swallowing: caution if victim vomits. Risk of aspiration! Keep airways free. Call a physician immediately. Pulmonary failure possible after aspiration of vomit.

### **4.2 Most important symptoms and effects, both acute and delayed**

irritant effects, Dizziness, narcosis, Headache

Repeated exposure may cause skin dryness or cracking.

### **4.3 Indication of any immediate medical attention and special treatment needed**

No information available.

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## **SECTION 5. Firefighting measures**

### **5.1 Extinguishing media**

*Suitable extinguishing media*

Carbon dioxide (CO<sub>2</sub>), Foam, Dry powder

*Unsuitable extinguishing media*

For this substance/mixture no limitations of extinguishing agents are given.

### **5.2 Special hazards arising from the substance or mixture**

Combustible.

Vapours are heavier than air and may spread along floors.

Forms explosive mixtures with air on intense heating.

Development of hazardous combustion gases or vapours possible in the event of fire.

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## 5.3 Advice for firefighters

*Special protective equipment for firefighters*

Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.

*Further information*

Remove container from danger zone and cool with water. Prevent fire extinguishing water from contaminating surface water or the ground water system.

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## SECTION 6. Accidental release measures

### 6.1 Personal precautions, protective equipment and emergency procedures

Advice for non-emergency personnel: Do not breathe vapours, aerosols. Avoid substance contact. Ensure adequate ventilation. Keep away from heat and sources of ignition. Evacuate the danger area, observe emergency procedures, consult an expert.

Advice for emergency responders:

Protective equipment see section 8.

### 6.2 Environmental precautions

Do not let product enter drains.

### 6.3 Methods and materials for containment and cleaning up

Cover drains. Collect, bind, and pump off spills. Observe possible material restrictions (see sections 7 and 10). Take up carefully with liquid-absorbent material (e.g. Chemizorb®). Dispose of properly. Clean up affected area.

### 6.4 Reference to other sections

Indications about waste treatment see section 13.

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## SECTION 7. Handling and storage

### 7.1 Precautions for safe handling

*Advice on safe handling*

Observe label precautions.

*Advice on protection against fire and explosion*

Keep away from open flames, hot surfaces and sources of ignition. Take precautionary measures against static discharge.

*Hygiene measures*

Change contaminated clothing. Preventive skin protection recommended. Wash hands after working with substance.

### 7.2 Conditions for safe storage, including any incompatibilities

*Storage conditions*

Tightly closed.

Recommended storage temperature see product label.

### 7.3 Specific end use(s)

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated.

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## SECTION 8. Exposure controls/personal protection

### 8.1 Control parameters

### 8.2 Exposure controls

#### Engineering measures

Technical measures and appropriate working operations should be given priority over the use of personal protective equipment.

See section 7.1.

#### Individual protection measures

Protective clothing needs to be selected specifically for the workplace, depending on concentrations and quantities of the hazardous substances handled. The chemical resistance of the protective equipment should be enquired at the respective supplier.

##### *Eye/face protection*

Safety glasses

##### *Hand protection*

full contact:

|                     |                |
|---------------------|----------------|
| Glove material:     | Nitrile rubber |
| Glove thickness:    | 0,40 mm        |
| Break through time: | > 480 min      |

splash contact:

|                     |                 |
|---------------------|-----------------|
| Glove material:     | polychloroprene |
| Glove thickness:    | 0,65 mm         |
| Break through time: | > 30 min        |

The protective gloves to be used must comply with the specifications of EC Directive 89/686/EEC and the related standard EN374, for example KCL 730 Camatril® - Velours (full contact), KCL 720 Camapren® (splash contact).

The breakthrough times stated above were determined by KCL in laboratory tests acc. to EN374 with samples of the recommended glove types.

This recommendation applies only to the product stated in the safety data sheet, supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN374 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: [www.kcl.de](http://www.kcl.de)).

##### *Other protective equipment*

Flame retardant antistatic protective clothing.

##### *Respiratory protection*

required when vapours/aerosols are generated.

Recommended Filter type: Filter A (acc. to DIN 3181) for vapours of organic compounds

The entrepreneur has to ensure that maintenance, cleaning and testing of respiratory protective devices are carried out according to the instructions of the producer.

These measures have to be properly documented.

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## Environmental exposure controls

Do not let product enter drains.

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## SECTION 9. Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

|  |  |
|--|--|
| Form                                   | liquid   |
| Colour                                 | colourless   |
| Odour                                  | benzene-like   |
| Odour Threshold                        | No information available.  |
| pH                                     | No information available.  |
| Melting point                          | -35 °C   |
| Boiling point/boiling range            | 213 - 216 °C<br>at 1.013 hPa                                     |
| Flash point                            | 77 °C<br>Method: c.c.  |
| Evaporation rate                       | No information available.  |
| Flammability (solid, gas)              | No information available.  |
| Lower explosion limit                  | 0,6 %(V)   |
| Upper explosion limit                  | 5,4 %(V)   |
| Vapour pressure                        | 0,193 hPa<br>at 25 °C  |
| Relative vapour density                | 5,81   |
| Density                                | 0,76 g/cm <sup>3</sup><br>at 20 °C                               |
| Relative density                       | No information available.  |
| Water solubility                       | 0,00755 g/l<br>at 22,5 °C<br>Method: OECD Test Guideline 105     |
| Partition coefficient: n-octanol/water | log Pow: 6,1<br>(calculated)<br>(Lit.) Potential bioaccumulation |

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|                           |                              |
|---------------------------|------------------------------|
| Auto-ignition temperature | 225 °C                       |
| Decomposition temperature | No information available.    |
| Viscosity, dynamic        | No information available.    |
| Explosive properties      | Not classified as explosive. |
| Oxidizing properties      | none                         |

## 9.2 Other data

|                      |                                      |
|----------------------|--------------------------------------|
| Ignition temperature | 226 °C                               |
| Viscosity, kinematic | 0,68 mm <sup>2</sup> /s<br>at 100 °C |

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## SECTION 10. Stability and reactivity

### 10.1 Reactivity

Forms explosive mixtures with air on intense heating.  
A range from approx. 15 Kelvin below the flash point is to be rated as critical.

### 10.2 Chemical stability

The product is chemically stable under standard ambient conditions (room temperature) .

### 10.3 Possibility of hazardous reactions

Violent reactions possible with:  
Strong acids, Strong oxidizing agents

### 10.4 Conditions to avoid

A range from approx. 15 Kelvin below the flash point is to be rated as critical.  
Strong heating.

### 10.5 Incompatible materials

no information available

### 10.6 Hazardous decomposition products

no information available

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## SECTION 11. Toxicological information

### 11.1 Information on toxicological effects

*Acute oral toxicity*  
LD50 Rat: 7.600 mg/kg

(ECHA) (in analogy to similar compounds)

*Acute inhalation toxicity*  
This information is not available.

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## *Acute dermal toxicity*

This information is not available.

## *Skin irritation*

Rabbit

Result: slight irritation

OECD Test Guideline 404

Repeated exposure may cause skin dryness or cracking.

## *Eye irritation*

Rabbit

Result: No eye irritation

OECD Test Guideline 405

The value is given in analogy to the following substances: Alkenes, C12-14  $\alpha$ -

## *Sensitisation*

Buehler Test Guinea pig

Result: negative

Method: OECD Test Guideline 406

## *Germ cell mutagenicity*

### *Genotoxicity in vitro*

Ames test

Escherichia coli/Salmonella typhimurium

Result: negative

Method: OECD Test Guideline 471

Mutagenicity (mammal cell test): chromosome aberration.

Result: negative

Method: OECD Test Guideline 473

## *Carcinogenicity*

This information is not available.

## *Reproductive toxicity*

This information is not available.

## *Teratogenicity*

This information is not available.

## *Specific target organ toxicity - single exposure*

This information is not available.

## *Specific target organ toxicity - repeated exposure*

This information is not available.

## *Aspiration hazard*

Aspiration hazard, Aspiration may cause pulmonary oedema and pneumonitis.

## **11.2 Further information**

After absorption of large quantities:

Headache, Dizziness, narcosis

Other dangerous properties can not be excluded.

Handle in accordance with good industrial hygiene and safety practice.



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## SECTION 12. Ecological information

### 12.1 Toxicity

#### *Toxicity to fish*

semi-static test LC50 Oncorhynchus mykiss (rainbow trout): > 0,003 mg/l; 96 h

Analytical monitoring: yes

OECD Test Guideline 203

(above the solubility limit in the test medium)

#### *Toxicity to daphnia and other aquatic invertebrates*

semi-static test EC50 Daphnia magna (Water flea): > 0,003 mg/l; 48 h

Analytical monitoring: yes

OECD Test Guideline 202

(above the solubility limit in the test medium)

#### *Toxicity to algae*

static test EC50 Pseudokirchneriella subcapitata (green algae): > 0,001 mg/l; 72 h

Analytical monitoring: yes

OECD Test Guideline 201

(above the solubility limit in the test medium)

### 12.2 Persistence and degradability

#### *Biodegradability*

62 - 65 %; aerobic

OECD Test Guideline 301D

The value is given in analogy to the following substances:

Readily biodegradable 1-tetradecene

### 12.3 Bioaccumulative potential

#### *Partition coefficient: n-octanol/water*

log Pow: 6,1

(calculated)

(Lit.) Potential bioaccumulation

### 12.4 Mobility in soil

No information available.

### 12.5 Results of PBT and vPvB assessment

PBT/vPvB assessment not available as chemical safety assessment not required/not conducted.

### 12.6 Other adverse effects

#### *Additional ecological information*

Discharge into the environment must be avoided.

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## SECTION 13. Disposal considerations

### *Waste treatment methods*

See [www.retrologistik.com](http://www.retrologistik.com) for processes regarding the return of chemicals and containers, or contact us there if you have further questions.

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## SECTION 14. Transport information

### Land transport (ADR/RID)

**14.1 - 14.6** Not classified as dangerous in the meaning of transport regulations.

### Inland waterway transport (ADN)

Not relevant

### Air transport (IATA)

**14.1 - 14.6** Not classified as dangerous in the meaning of transport regulations.

### Sea transport (IMDG)

**14.1 - 14.6** Not classified as dangerous in the meaning of transport regulations.

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

Not relevant

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## SECTION 15. Regulatory information

### 15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

#### *EU regulations*

|                       |                |
|-----------------------|----------------|
| Major Accident Hazard | SEVESO III     |
| Legislation           | Not applicable |

|                           |  |
|---------------------------|--|
| Occupational restrictions | Take note of Dir 94/33/EC on the protection of young people at work. |
|---------------------------|--|

Regulation (EC) No 1005/2009 on substances that deplete the ozone layer not regulated

|   |               |
|---|---------------|
| Regulation (EC) No 850/2004 of the European Parliament and of the Council of 29 April 2004 on persistent organic pollutants and amending Directive 79/117/EEC | not regulated |
|---|---------------|

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Substances of very high concern (SVHC)

This product does not contain substances of very high concern according to Regulation (EC) No 1907/2006 (REACH), Article 57 above the respective regulatory concentration limit of  $\geq 0.1\%$  (w/w).

*National legislation*

Storage class 10 - 13

## 15.2 Chemical safety assessment

For this product a chemical safety assessment was not carried out.

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## SECTION 16. Other information

### Full text of H-Statements referred to under sections 2 and 3.

H304 May be fatal if swallowed and enters airways.

### Training advice

Provide adequate information, instruction and training for operators.

### Labelling

*Hazard pictograms*



*Signal word*

Danger

*Hazard statements*

H227 Combustible liquid.

H304 May be fatal if swallowed and enters airways.

EUH066 Repeated exposure may cause skin dryness or cracking.

*Precautionary statements*

Response

P301 + P330 + P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

Contains: Dodec-1-ene

### Key or legend to abbreviations and acronyms used in the safety data sheet

Used abbreviations and acronyms can be looked up at [www.wikipedia.org](http://www.wikipedia.org).

### Regional representation

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This information is given on the authorised Safety Data Sheet for your country.

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*The information contained herein is based on the present state of our knowledge. It characterises the product with regard to the appropriate safety precautions. It does not represent a guarantee of any properties of the product.*

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