

Safety data sheet

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BASF Safety data sheet according to the United Nations' Globally Harmonized System (UN GHS)

Date / Revised: 17.08.2023

Version: 4.0

Product: **C12 - Olefins**

(ID no. 30645030/SDS_GEN_00/EN)

Date of print 17.06.2024

1. Identification

Product identifier

C12 - Olefins

Chemical name: Dodecene, branched

CAS Number: 97280-83-6

Recommended use: Only to be used as intermediate according to the REACH Regulation (EC) No 1907/2006, art. 18

Details of the supplier of the safety data sheet

Company:

BASF SE

67056 Ludwigshafen

GERMANY

Operating Division Petrochemicals

Telephone: +49 621 60-42151

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2. Hazards Identification

Classification of the substance or mixture

According to UN GHS criteria

Asp. Tox. 1

Flam. Liq. 4

Skin Corr./Irrit. 2

For the classifications not written out in full in this section the full text can be found in section 16.

Label elements

Globally Harmonized System (GHS)

Pictogram:



Signal Word:

Danger

Hazard Statement:

| | |
|------|---|
| H227 | Combustible liquid. |
| H315 | Causes skin irritation. |
| H304 | May be fatal if swallowed and enters airways. |

Precautionary Statements (Prevention):

| | |
|------|--|
| P280 | Wear protective gloves and eye protection or face protection. |
| P210 | Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. |
| P264 | Wash contaminated body parts thoroughly after handling. |

Precautionary Statements (Response):

| | |
|-------------|--|
| P301 + P310 | IF SWALLOWED: Immediately call a POISON CENTER or physician. |
| P302 + P352 | IF ON SKIN: Wash with plenty of soap and water. |
| P332 + P313 | If skin irritation occurs: Get medical attention. |
| P331 | Do NOT induce vomiting. |
| P362 + P364 | Take off contaminated clothing and wash it before reuse. |
| P370 + P378 | In case of fire: Use water spray, dry powder, foam or carbon dioxide for extinction. |

Precautionary Statements (Storage):

| | |
|------|-----------------------------------|
| P405 | Store locked up. |
| P403 | Store in a well-ventilated place. |

Precautionary Statements (Disposal):

| | |
|------|---|
| P501 | Dispose of contents and container to hazardous or special waste collection point. |
|------|---|

Other hazards

According to UN GHS criteria

If applicable information is provided in this section on other hazards which do not result in classification but which may contribute to the overall hazards of the substance or mixture.

See section 12 - Results of PBT and vPvB assessment.

3. Composition/Information on Ingredients

Substances

Chemical nature

Dodecene, branched (Content (W/W): 100 %)
CAS Number: 97280-83-6
EC-Number: 306-479-5

For the classifications not written out in full in this section the full text can be found in section 16.

Mixtures

Not applicable

4. First-Aid Measures

Description of first aid measures

First aid personnel should pay attention to their own safety. If the patient is likely to become unconscious, place and transport in stable sideways position (recovery position). Immediately remove contaminated clothing.

If inhaled:

Keep patient calm, remove to fresh air, seek medical attention.

On skin contact:

Immediately wash thoroughly with soap and water, seek medical attention.

On contact with eyes:

Wash affected eyes for at least 15 minutes under running water with eyelids held open, consult an eye specialist.

On ingestion:

Immediately rinse mouth and then drink 200-300 ml of water, seek medical attention.

Most important symptoms and effects, both acute and delayed

Hazards: When inhaled (e.g. during vomiting) risk of pulmonary oedema and/or pneumonia.

Information, i.e. additional information on symptoms and effects may be included in the GHS labeling phrases available in Section 2 and in the Toxicological assessments available in Section 11.
(Further) symptoms and / or effects are not known so far

Indication of any immediate medical attention and special treatment needed

Treatment: Treat according to symptoms (decontamination, vital functions), no known specific antidote.

5. Fire-Fighting Measures

Extinguishing media

Suitable extinguishing media:

dry powder, water spray, carbon dioxide, foam

Unsuitable extinguishing media for safety reasons:

water jet

Additional information:

Use extinguishing measures to suit surroundings.

Special hazards arising from the substance or mixture

The product is combustible. Cool endangered containers with water-spray. See SDS section 7 - Handling and storage.

Advice for fire-fighters

Special protective equipment:

Wear a self-contained breathing apparatus. Special protective equipment for firefighters

Further information:

Evacuate area of all unnecessary personnel. Fight fire from maximum distance.

Extend fire extinguishing measures to the surroundings. Dispose of fire debris and contaminated extinguishing water in accordance with official regulations.

6. Accidental Release Measures

High risk of slipping due to leakage/spillage of product.

Release of substance/product can cause fire or explosion. Shut off or stop source of leak. Shut off or stop released substance/product under safe conditions.

Pack in tightly closed containers for disposal.

Personal precautions, protective equipment and emergency procedures

Handle in accordance with good industrial hygiene and safety practice.

Avoid all sources of ignition: heat, sparks, open flame. Use antistatic tools. Avoid contact with the skin, eyes and clothing.

Take off immediately all contaminated clothing.

Environmental precautions

Discharge into the environment must be avoided.

Methods and material for containment and cleaning up

Pick up with suitable appliance and dispose of. Spills should be contained, solidified, and placed in suitable containers for disposal. Dispose of absorbed material in accordance with regulations.

7. Handling and Storage

Precautions for safe handling

Handle in accordance with good industrial hygiene and safety practice.

Protection against fire and explosion:

Avoid all sources of ignition: heat, sparks, open flame. Ground all transfer equipment properly to prevent electrostatic discharge.

Conditions for safe storage, including any incompatibilities

No applicable information available.

Further information on storage conditions: Keep under inert gas. Containers should be stored tightly sealed in a dry place.

Specific end use(s)

For the relevant identified use(s) listed in Section 1 the advice mentioned in this section 7 is to be observed.

8. Exposure Controls/Personal Protection

Exposure controls

Personal protective equipment

Respiratory protection:

Wear respiratory protection if ventilation is inadequate. Suitable respiratory protection for lower concentrations or short-term effect: Gas filter for gases/vapours of organic compounds (boiling point >65 °C, e. g. EN 14387 Type A) Suitable respiratory protection for higher concentrations or long-term effect: Self-contained breathing apparatus.

Hand protection:

Chemical resistant protective gloves (EN ISO 374-1)

Suitable materials also with prolonged, direct contact (Recommended: Protective index 6, corresponding > 480 minutes of permeation time according to EN ISO 374-1):

nitrile rubber (NBR) - 0.4 mm coating thickness

Manufacturer's directions for use should be observed because of great diversity of types.

Supplementary note: The specifications are based on tests, literature data and information of glove manufacturers or are derived from similar substances by analogy. Due to many conditions (e.g. temperature) it must be considered, that the practical usage of a chemical-protective glove in practice may be much shorter than the permeation time determined through testing.

Eye protection:

Safety glasses with side-shields (frame goggles) (e.g. EN 166)

Body protection:

Body protection must be chosen depending on activity and possible exposure, e.g. apron, protecting boots, chemical-protection suit (according to EN 14605 in case of splashes or EN ISO 13982 in case of dust).

General safety and hygiene measures

Ensure adequate ventilation. Avoid contact with the skin, eyes and clothing. Avoid inhalation of vapour. Avoid exposure - obtain special instructions before use. Wearing of closed work clothing is required additionally to the stated personal protection equipment. Handle in accordance with good

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industrial hygiene and safety practice. At the end of the shift the skin should be cleaned and skin-care agents applied.

9. Physical and Chemical Properties

Information on basic physical and chemical properties

| | | |
|------------------------|--|------------|
| Form: | liquid | |
| Colour: | colourless | |
| Odour: | characteristic | |
| Odour threshold: | not determined | |
| pH value: | not applicable, of very low solubility | |
| Melting point: | < -20 °C The statements are based on the properties of the individual components. | |
| Boiling point: | 199 °C (1.002,4 hPa) | (other) |
| Flash point: | approx. 78 °C The product has not been tested. The statement has been derived from the properties of the individual components. | |
| Evaporation rate: | Value can be approximated from Henry's Law Constant or vapor pressure. | |
| Flammability: | not readily ignited | (other) |
| Lower explosion limit: | 0,8 %(V) | |
| Upper explosion limit: | For liquids not relevant for classification and labelling. 4,9 %(V) | |
| Ignition temperature: | For liquids not relevant for classification and labelling. approx. 231 °C The product has not been tested. The statement has been derived from the properties of the individual components. | |
| Vapour pressure: | approx. 0,1 hPa (20 °C) | (measured) |
| Density: | dynamic approx. 0,7584 g/cm ³ (20 °C, 1.013 hPa) The statements are based on the properties of the individual components. | (other) |
| Relative density: | 0,7584 (20 °C) | |

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| | | |
|---|---|---|
| Relative vapour density (air): | 5,8 (20 °C) Heavier than air. | (calculated) |
| Solubility in water: | The product has not been tested. The statement has been derived from the properties of the individual components. approx. < 1 mg/l (25 °C, 1.013 hPa) | (calculated) |
| Solubility (qualitative) solvent(s): | organic solvents soluble | |
| Partitioning coefficient n-octanol/water (log Kow): | 6,02 (25 °C) | (calculated) |
| Self ignition: | not self-igniting | Test type: Spontaneous self-ignition at room-temperature. |
| Thermal decomposition: | No decomposition if stored and handled as prescribed/indicated. | |
| Viscosity, dynamic: | 1,365 mPa.s (20 °C) The value was determined by calculation from the detected kinematic viscosity. | |
| Viscosity, kinematic: | 1,8 mm ² /s (20 °C) The product has not been tested. The statement has been derived from substances/products of a similar structure or composition. | |
| Explosion hazard: | Based on the chemical structure there is no indication of explosive properties. | (other) |
| Fire promoting properties: | Based on its structural properties the product is not classified as oxidizing. | (other) |

Other information

| | | |
|--------------------------|--|--------------|
| pKA: | The substance does not dissociate. | |
| Adsorption/water - soil: | KOC: 4915; log KOC: 3,69 Adsorption to solid soil phase is possible. | (calculated) |
| Surface tension: | Based on chemical structure, surface activity is not to be expected. | |
| Grain size distribution: | The substance / product is marketed or used in a non solid or granular form. | |
| Molar mass: | 168,32 g/mol | |

10. Stability and Reactivity**Reactivity**

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Corrosion to metals: No corrosive effect on metal.
Formation of Remarks: Forms no flammable gases in the
flammable gases: presence of water.

Chemical stability

The product is stable if stored and handled as prescribed/indicated.

Possibility of hazardous reactions

Reacts with oxidizing agents. Exothermic reaction.

Conditions to avoid

Avoid all sources of ignition: heat, sparks, open flame.

Incompatible materials

Substances to avoid:
strong oxidizing agents

Hazardous decomposition products

Hazardous decomposition products:
No hazardous decomposition products if stored and handled as prescribed/indicated.

11. Toxicological Information

Information on toxicological effects

Acute toxicity

Assessment of acute toxicity:

Virtually nontoxic after a single ingestion. The inhalation of a highly enriched/saturated vapor-air-mixture represents an unlikely acute hazard. Virtually nontoxic after a single skin contact.

Experimental/calculated data:

LD50 rat (oral): > 2.000 mg/kg (BASF-Test)

No mortality was observed.

LC50 rat (by inhalation): > 3,8 mg/l 7 h (IRT)

No mortality within the stated exposition time as shown in animal studies. The vapour was tested.

LD50 rabbit (dermal): > 2.446 mg/kg

The product has not been tested. The statement has been derived from substances/products of a similar structure or composition. No mortality was observed.

Irritation

Assessment of irritating effects:

Skin contact causes irritation. Not irritating to the eyes.

Experimental/calculated data:

Skin corrosion/irritation rabbit: Irritant. (OECD Guideline 404)

Serious eye damage/irritation rabbit: non-irritant (OECD Guideline 405)

Respiratory/Skin sensitization

Assessment of sensitization:

Skin sensitizing effects were not observed in animal studies.

Experimental/calculated data:

Buehler test guinea pig: Non-sensitizing. (similar to OECD guideline 406)

The product has not been tested. The statement has been derived from substances/products of a similar structure or composition.

Germ cell mutagenicity

Assessment of mutagenicity:

The substance was not mutagenic in bacteria.

Carcinogenicity

Assessment of carcinogenicity:

No data available.

Reproductive toxicity

Assessment of reproduction toxicity:

No data available.

Developmental toxicity

Assessment of teratogenicity:

No data available.

Specific target organ toxicity (single exposure)

Assessment of STOT single:

Based on the available information there is no specific target organ toxicity to be expected after a single exposure.

Repeated dose toxicity and Specific target organ toxicity (repeated exposure)

Assessment of repeated dose toxicity:

No data available.

Aspiration hazard

May be fatal if swallowed and enters airways.

12. Ecological Information

Toxicity

Assessment of aquatic toxicity:

No toxic effects occur within the range of solubility. The inhibition of the degradation activity of activated sludge is not anticipated when introduced to biological treatment plants in appropriate low concentrations.

Toxicity to fish:

LC50 (96 h) > 10.000 mg/l, *Leuciscus idus* (DIN 38412 Part 15, static)
Nominal concentration.

Aquatic invertebrates:

EC50 (48 h) > 3,1 mg/l, *Daphnia magna* (OECD Guideline 202, part 1, static)
The product is highly volatile. Tested in a closed test system.

Aquatic plants:

EC50 (72 h) 18 mg/l (growth rate), *Scenedesmus subspicatus* (DIN 38412 Part 9, static)
The product has low solubility in the test medium. An aqueous solution prepared with solubilizers has been tested.

Microorganisms/Effect on activated sludge:

EC20 (30 min) > 1.000 mg/l, activated sludge, domestic, aerobic (DIN EN ISO 8192-OECD 209-88/302/EEC, P. C, aquatic)

Chronic toxicity to aquatic invertebrates:

No observed effect concentration (21 d) > 0,018 mg/l, *Daphnia magna* (OECD Guideline 211, semistatic)

The product has low solubility in the test medium. An aqueous solution prepared with solubilizers has been tested. Limit concentration test only (LIMIT test). No effects at the highest test concentration.

Assessment of terrestrial toxicity:

No data available concerning terrestrial toxicity.

Persistence and degradability**Assessment biodegradation and elimination (H2O):**

Moderately/partially biodegradable. Not readily biodegradable (by OECD criteria).

Elimination information:

20 - 60 % BOD of the ThOD (OECD 301F; ISO 9408; 92/69/EEC, C.4-D) (aerobic, activated sludge, adapted) Moderately/partially biodegradable.

Bioaccumulative potential**Assessment bioaccumulation potential:**

Because of the n-octanol/water distribution coefficient (log Pow) accumulation in organisms is possible.

Bioaccumulation potential:

Because of the n-octanol/water distribution coefficient (log Pow) accumulation in organisms is possible.

Mobility in soil**Assessment transport between environmental compartments:**

Adsorption in soil: Adsorption to solid soil phase is possible.

Results of PBT and vPvB assessment

According to Annex XIII of Regulation (EC) No.1907/2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH): Not fulfilling PBT (persistent/bioaccumulative/toxic) criteria.

According to Annex XIII of Regulation (EC) No.1907/2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH): Not fulfilling vPvB (very persistent/very bioaccumulative) criteria.

Other adverse effects

The substance is not listed in Regulation (EC) 1005/2009 on substances that deplete the ozone layer.

Additional information

Other ecotoxicological advice:

No toxic effects occur within the range of solubility. The inhibition of the degradation activity of activated sludge is not anticipated when introduced to biological treatment plants in appropriate low concentrations.

13. Disposal Considerations

14. Transport Information

Land transport

ADR

| | |
|------------------------------|--|
| | Not classified as a dangerous good under transport regulations |
| UN number or ID number: | Not applicable |
| UN proper shipping name: | Not applicable |
| Transport hazard class(es): | Not applicable |
| Packing group: | Not applicable |
| Environmental hazards: | Not applicable |
| Special precautions for user | None known |

RID

| | |
|------------------------------|--|
| | Not classified as a dangerous good under transport regulations |
| UN number or ID number: | Not applicable |
| UN proper shipping name: | Not applicable |
| Transport hazard class(es): | Not applicable |
| Packing group: | Not applicable |
| Environmental hazards: | Not applicable |
| Special precautions for user | None known |

Inland waterway transport

ADN

Not classified as a dangerous good under transport regulations

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UN number or ID number: Not applicable
UN proper shipping name: Not applicable
Transport hazard class(es): Not applicable
Packing group: Not applicable
Environmental hazards: Not applicable
Special precautions for user: None known

Transport in inland waterway vessel

Not evaluated

Sea transport

IMDG

Not classified as a dangerous good under transport regulations

UN number or ID number: Not applicable
UN proper shipping name: Not applicable
Transport hazard class(es): Not applicable
Packing group: Not applicable
Environmental hazards: Not applicable
Special precautions for user: None known

Air transport

IATA/ICAO

Not classified as a dangerous good under transport regulations

UN number or ID number: Not applicable
UN proper shipping name: Not applicable
Transport hazard class(es): Not applicable
Packing group: Not applicable
Environmental hazards: Not applicable
Special precautions for user: None known

Maritime transport in bulk according to IMO instruments

Maritime transport in bulk is not intended.

15. Regulatory Information

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

If other regulatory information applies that is not already provided elsewhere in this safety data sheet, then it is described in this subsection.

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16. Other Information

Full text of classifications, hazard symbols and hazard statements, if mentioned in section 2 or 3:

| | |
|-------------------|---------------------------|
| Asp. Tox. | Aspiration hazard |
| Flam. Liq. | Flammable liquids |
| Skin Corr./Irrit. | Skin corrosion/irritation |

The data contained in this safety data sheet are based on our current knowledge and experience and describe the product only with regard to safety requirements. This safety data sheet is neither a Certificate of Analysis (CoA) nor technical data sheet and shall not be mistaken for a specification agreement. Identified uses in this safety data sheet do neither represent an agreement on the corresponding contractual quality of the substance/mixture nor a contractually designated use. It is the responsibility of the recipient of the product to ensure any proprietary rights and existing laws and legislation are observed.

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