SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifiers

Product name : 1-Decene
Product Number : 30649
Brand : Sigma-Aldrich
CAS-No. : 872-05-9

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

Identified uses : Laboratory chemicals, Synthesis of substances

1.3 Details of the supplier of the safety data sheet

Company : Sigma-Aldrich Inc.
3050 SPRUCE ST
ST. LOUIS MO  63103
UNITED STATES

Telephone : +1 314 771-5765
Fax : +1 800 325-5052

1.4 Emergency telephone

Emergency Phone # : 800-424-9300 CHEMTREC (USA) +1-703-527-3887 CHEMTREC (International) 24 Hours/day; 7 Days/week

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)

Flammable liquids (Category 3), H226
Aspiration hazard (Category 1), H304
Short-term (acute) aquatic hazard (Category 1), H400
Long-term (chronic) aquatic hazard (Category 1), H410

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

2.2 GHS Label elements, including precautionary statements

Pictogram

Sigma-Aldrich - 30649
Signal Word: Danger

Hazard statement(s)
- H226: Flammable liquid and vapor.
- H304: May be fatal if swallowed and enters airways.
- H410: Very toxic to aquatic life with long lasting effects.

Precautionary statement(s)
- P210: Keep away from heat/ sparks/ open flames/ hot surfaces. No smoking.
- P233: Keep container tightly closed.
- P240: Ground/bond container and receiving equipment.
- P241: Use explosion-proof electrical/ ventilating/ lighting/ equipment.
- P242: Use only non-sparking tools.
- P243: Take precautionary measures against static discharge.
- P273: Avoid release to the environment.
- P280: Wear protective gloves/ eye protection/ face protection.
- P301 + P310: IF SWALLOWED: Immediately call a POISON CENTER/ doctor.
- P303 + P361 + P353: IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/ shower.
- P331: Do NOT induce vomiting.
- P370 + P378: In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.
- P391: Collect spillage.
- P403 + P235: Store in a well-ventilated place. Keep cool.
- P405: Store locked up.
- P501: Dispose of contents/ container to an approved waste disposal plant.

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS - none

SECTION 3: Composition/information on ingredients

3.1 Substances

<table>
<thead>
<tr>
<th>Component</th>
<th>Classification</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-decene</td>
<td>Flam. Liq. 3; Asp. Tox. 1; Aquatic Acute 1; Aquatic Chronic 1; H226, H304, H400, H410</td>
<td>&lt;= 100 %</td>
</tr>
<tr>
<td></td>
<td>M-Factor - Aquatic Acute: 1 - Aquatic Chronic: 1</td>
<td></td>
</tr>
</tbody>
</table>

For the full text of the H-Statements mentioned in this Section, see Section 16.
SECTION 4: First aid measures

4.1 Description of first-aid measures

General advice
Show this material safety data sheet to the doctor in attendance.

If inhaled
After inhalation: fresh air.

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

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

If swallowed

4.2 Most important symptoms and effects, both acute and delayed
The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

4.3 Indication of any immediate medical attention and special treatment needed
No data available

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media
Carbon dioxide (CO2) 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
Carbon oxides
Combustible.
Vapors are heavier than air and may spread along floors.
Forms explosive mixtures with air at elevated temperatures.
Development of hazardous combustion gases or vapours possible in the event of fire.

5.3 Advice for firefighters
In the event of fire, wear self-contained breathing apparatus.

5.4 Further information
Remove container from danger zone and cool with water. Prevent fire extinguishing water from contaminating surface water or the ground water system.
SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures
Advice for non-emergency personnel: Do not breathe vapors, 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. For personal protection see section 8.

6.2 Environmental precautions
Do not let product enter drains. Risk of explosion.

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
For disposal see section 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling
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. Wash hands after working with substance. For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities
Storage conditions
Keep container tightly closed in a dry and well-ventilated place. Keep away from heat and sources of ignition.

Store under inert gas. Air sensitive.

Storage class
Storage class (TRGS 510): 3: Flammable liquids

7.3 Specific end use(s)
Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

SECTION 8: Exposure controls/personal protection

8.1 Control parameters
Ingredients with workplace control parameters
8.2 Exposure controls

**Appropriate engineering controls**
Change contaminated clothing. Wash hands after working with substance.

**Personal protective equipment**

**Eye/face protection**
Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU). Safety glasses

**Skin protection**
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 EN 16523-1 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: www.kcl.de).

Full contact
- Material: Nitrile rubber
- Minimum layer thickness: 0.4 mm
- Break through time: 480 min
- Material tested: Camatril® (KCL 730 / Aldrich Z677442, Size M)

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 EN 16523-1 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: www.kcl.de).

Splash contact
- Material: Chloroprene
- Minimum layer thickness: 0.65 mm
- Break through time: 30 min
- Material tested: KCL 720 Camapren®

**Body Protection**
Flame retardant antistatic protective clothing.

**Respiratory protection**
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.

required when vapours/aerosols are generated. Our recommendations on filtering respiratory protection are based on the following standards: DIN EN 143, DIN 14387 and other accompanying standards relating to the used respiratory protection system.

**Control of environmental exposure**
Do not let product enter drains. Risk of explosion.
### SECTION 9: Physical and chemical properties

#### 9.1 Information on basic physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
</table>
| a) Appearance                              | Form: liquid, clear  
                                            | Color: colorless                                                      |
| b) Odor                                    | characteristic                                                      |
| c) Odor Threshold                          | No data available                                                   |
| d) pH                                      | No data available                                                   |
| e) Melting point/freezing point            | Melting point/range: -66.3 - -66 °C (-87.3 - -87 °F) - lit.          |
| f) Initial boiling point and boiling range | 166.5 - 173.5 °C 331.7 - 344.3 °F - lit.                             |
| g) Flash point                             | 44.0 °C (111.2 °F) - closed cup                                      |
| h) Evaporation rate                        | No data available                                                   |
| i) Flammability (solid, gas)               | No data available                                                   |
| j) Upper/lower flammability or explosive limits | Upper explosion limit: 5.9 %(V)  
                                            | Lower explosion limit: 0.7 %(V)                                      |
| k) Vapor pressure                          | 1.4 hPa at 20 °C (68 °F)                                            |
| l) Vapor density                           | 4.84                                                                |
| m) Density                                 | 0.741 g/mL at 25 °C (77 °F) - lit.                                  |
| n) Water solubility                        | insoluble                                                           |
| o) Partition coefficient: n-octanol/water  | log Pow: 5.70 - Potential bioaccumulation, (Lit.)                    |
| p) Autoignition temperature                | 235.0 °C (455.0 °F)                                                 |
| q) Decomposition temperature               | No data available                                                   |
| r) Viscosity                               | 1.1 mm2/s at 20 °C (68 °F) -                                       |
| s) Explosive properties                    | No data available                                                   |
| t) Oxidizing properties                    | none                                                                |

#### 9.2 Other safety information

- Relative vapor density: 4.84
SECTION 10: Stability and reactivity

10.1 Reactivity
Vapor/air-mixtures are explosive at intense warming.

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 oxidizing agents
- Chlorates
- Nitrates
- Peroxides
- Acids

10.4 Conditions to avoid
- Heating.

10.5 Incompatible materials
- Strong oxidizing agents

10.6 Hazardous decomposition products
In the event of fire: see section 5

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity
- LD50 Oral - Rat - male and female - > 5,600 mg/kg (OECD Test Guideline 420)
- LC50 Inhalation - Rat - male - 4 h - 40.2 mg/l - vapor (OECD Test Guideline 403)
- LD50 Dermal - Rabbit - male and female - > 2,000 mg/kg (OECD Test Guideline 402)

Skin corrosion/irritation
- Skin - Rabbit
  Result: No skin irritation - 4 h (OECD Test Guideline 404)

Serious eye damage/eye irritation
- Eyes - Rabbit
  Result: No eye irritation (OECD Test Guideline 405)

Respiratory or skin sensitization
- Patch test: - Guinea pig
  Result: Not a skin sensitizer. (OECD Test Guideline 406)

Germ cell mutagenicity
Test Type: Ames test  
Test system: S. typhimurium  
Metabolic activation: with and without metabolic activation  
Method: OECD Test Guideline 471  
Result: negative

Test Type: Micronucleus test  
Species: Mouse  
Cell type: Bone marrow  
Application Route: Oral

Result: negative  
Remarks: (ECHA)

**Carcinogenicity**

IARC: No ingredient of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

NTP: No ingredient of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.

**Reproductive toxicity**

No data available

**Specific target organ toxicity - single exposure**

No data available

**Specific target organ toxicity - repeated exposure**

No data available

**Aspiration hazard**

May be fatal if swallowed and enters airways.

### 11.2 Additional Information

RTECS: HE2071401  
drying, cracking of the skin, Skin irritation, giddiness, slowed reaction time, slurred speech, Headache, Dizziness, Drowsiness, Unconsciousness, To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Central nervous system -

---

**SECTION 12: Ecological information**

#### 12.1 Toxicity

**Toxicity to fish**

semi-static test LC50 - Oncorhynchus mykiss (rainbow trout) - 0.12 mg/l - 96 h  
(OECD Test Guideline 203)

**Toxicity to daphnia and other aquatic invertebrates**

EC50 - Daphnia magna (Water flea) - 0.56 - 1 mg/l - 48 h  
(OECD Test Guideline 202)

Remarks: (above the solubility limit in the test medium)
Toxicity to algae
  static test ErC50 - Pseudokirchneriella subcapitata (green algae) - 1 - 1.8 mg/l - 72 h
  (OECD Test Guideline 201)
  Remarks: (above the solubility limit in the test medium)

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)
  NOEC - Daphnia magna (Water flea) - 0.019 mg/l - 21 d
  (OECD Test Guideline 211)

12.2 Persistence and degradability
  Biodegradability
  aerobic - Exposure time 28 d
  Result: > 87 - < 94 % - Readily biodegradable.
  (OECD Test Guideline 301C)
  Remarks: Read-across (Analogy)

12.3 Bioaccumulative potential
  No data available

12.4 Mobility in soil
  No data available

12.5 Results of PBT and vPvB assessment
  PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

12.6 Endocrine disrupting properties
  No data available

12.7 Other adverse effects
  No data available

SECTION 13: Disposal considerations

13.1 Waste treatment methods
  Product
  Waste material must be disposed of in accordance with the national and local regulations.
  Leave chemicals in original containers. No mixing with other waste. Handle uncleaned containers like the product itself.

SECTION 14: Transport information

DOT (US)
  UN number: 3295  Class: 3  Packing group: III

Sigma-Aldrich - 30649
Proper shipping name: Hydrocarbons, liquid, n.o.s. (1-decene)

Reportable Quantity (RQ):
   Poison Inhalation Hazard: No

IMDG
UN number: 3295   Class: 3   Packing group: III   EMS-No: F-E, S-D
Proper shipping name: HYDROCARBONS, LIQUID, N.O.S. (1-decene)
Marine pollutant : yes

IATA
UN number: 3295   Class: 3   Packing group: III
Proper shipping name: Hydrocarbons, liquid, n.o.s. (1-decene)

SECTION 15: Regulatory information

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

SARA 313 Components
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.

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

SECTION 16: Other information

Further information
The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Corporation and its Affiliates shall not be held liable for any damage resulting from handling or from contact with the above product. See www.sigma-aldrich.com and/or the reverse side of invoice or packing slip for additional terms and conditions of sale.

Copyright 2020 Sigma-Aldrich Co. LLC. License granted to make unlimited paper copies for internal use only.

The branding on the header and/or footer of this document may temporarily not visually match the product purchased as we transition our branding. However, all of the information in the document regarding the product remains unchanged and matches the product ordered. For further information please contact misbranding@sial.com.

Version: 6.6   Revision Date: 10/27/2023   Print Date: 01/23/2024