

## Safety Data Sheet

according to Regulation (EC) No 1907/2006 (REACH)  
Classifications according to Regulation (EC) No 1272/2008.  
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## 1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

### 1.1. Product name:

n-Decane-d22

### 1.1. Catalog No.:

1061

### 1.2. Relevant identified uses of the substance or mixture

Identified: Laboratory chemical  
uses: R&D

### 1.3. Uses advised against:

ARMAR (Europa) GmbH  
Permoserstrasse 15

04318 Leipzig  
Germany

Tel. +49 341 5295 183  
Fax. +49 341 5295 182  
E-mail: info@armar-europa.de

## 2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture  
Classification according to Regulation (EC) No 1272/2008  
Flammable liquids (Category 3), H226

### 2.2. Label elements

#### 2.2.1. Pictogram



#### 2.2.2.

2.2 Label elements  
Labelling according Regulation (EC) No 1272/2008  
Pictogram Signal word Warning  
Hazard statement(s)  
H226 Flammable liquid and vapor.  
Precautionary  
statement(s)  
none  
Supplemental Hazard

Statements

none

2.3 Other hazards - none

### 3. COMPOSITION/INFORMATION ON INGREDIENTS

#### 3.1.1. Formula

C10D22

#### 3.1.2. Molecular Weight (g/mol)

164.42

#### 3.1.3. CAS-No.

16416-29-8

### 4. FIRST AID MEASURES

4.1 Description of first-aid measures

General advice

Consult a physician. Show this material safety data sheet to the doctor in attendance.

If inhaled

If breathed in, move person into fresh air. If not breathing, give artificial respiration.

Consult a physician.

In case of skin contact

Wash off with soap and plenty of water. Consult a physician.

In case of eye contact

Flush eyes with water as a precaution.

If swallowed

Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

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

### 5. FIRE-FIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

5.2 Special hazards arising from the substance or mixture

Carbon oxides

5.3 Advice for firefighters

Wear self-contained breathing apparatus for firefighting if necessary.

5.4 Further information

Use water spray to cool unopened containers

### 6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Beware of vapors accumulating to form explosive concentrations. Vapors can accumulate in low areas.

For personal protection see section 8.

6.2 Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

6.3 Methods and materials for containment and cleaning up

Contain spillage, and then collect with an electrically protected vacuum cleaner or by wetbrushing and place in container for disposal according to local regulations (see section 13).

6.4 Reference to other sections

For disposal see section 13

## 7. HANDLING AND STORAGE

### 7.1 Precautions for safe handling

Avoid inhalation of vapor or mist.

Keep away from sources of ignition - No smoking. Take measures to prevent the build up of electrostatic charge.

For precautions see section 2.2.

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

Store in cool place. Keep container tightly closed in a dry and well-ventilated place.

Containers which are opened must be carefully resealed and kept upright to prevent leakage.

Store under inert gas. hygroscopic

### 7.3 Specific end use(s)

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

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters Ingredients with workplace control parameters 8.2 Exposure controls Appropriate engineering controls Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday. Personal protective equipment

Eye/face protection Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU). Skin protection Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching gloves outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

The selected protective gloves have to satisfy the specifications of Regulation (EU) 2016/425 and the standard EN 374 derived from it.

Body Protection Impervious clothing, Flame retardant antistatic protective clothing., The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace. Respiratory protection Where risk assessment shows air-purifying respirators are appropriate use a fullface respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU). Control of environmental exposure Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

### 9.1 Information on basic physical and chemical properties

a) Appearance Form: liquid

b) Odor No data available

c) Odor Threshold No data available

d) pH No data available

e) Melting point/freezing point

Melting point/range: -30 °C - lit.

f) Initial boiling point 174 °C - lit. and boiling range

g) Flash point 46,00 °C - 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: 2,60 %(V)

Lower explosion limit: 0,80 %(V)

k) Vapor pressure 5,1 hPa at 37,70 °C

1 hPa at 16,50 °C

l) Vapor density No data available

m) Relative density 0,842 g/mL at 25 °C 0,842 g/cm<sup>3</sup> at 25 °C

n) Water solubility No data available

o) Partition coefficient:

n-octanol/water

No data available

p) Autoignition

temperature

No data available

q) Decomposition

temperature

No data available

r) Viscosity No data available

s) Explosive properties No data available

t) Oxidizing properties No data available

9.2 Other safety information  
No data available

## 10. STABILITY AND REACTIVITY

10.1 Reactivity  
No data available  
10.2 Chemical stability  
Stable under recommended storage conditions.  
10.3 Possibility of hazardous reactions  
No data available  
10.4 Conditions to avoid  
Heat, flames and sparks.  
10.5 Incompatible materials  
Strong oxidizing agents  
10.6 Hazardous decomposition products  
No data available  
Hazardous decomposition products formed under fire conditions. - Carbon oxides  
In the event of fire: see section 5

## 11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects  
Acute toxicity  
LD50 Oral - Rat - > 5.000 mg/kg  
(OECD Test Guideline 401)  
Remarks: The value is given in analogy to the following substances:  
LC50 Inhalation - Rat - male and female - 4 h - >= 6,1 mg/l  
(OECD Test Guideline 403)  
Remarks: The value is given in analogy to the following substances:  
LD50 Dermal - Rabbit - male and female - >= 3.160 mg/kg  
(OECD Test Guideline 402)  
Remarks: The value is given in analogy to the following substances:  
Skin corrosion/irritation  
Skin - Rabbit  
Result: slight irritation - 4 h  
(OECD Test Guideline 404)  
Remarks: The value is given in analogy to the following substances:  
Serious eye damage/eye irritation  
Eyes - Rabbit  
Result: No eye irritation  
(OECD Test Guideline 405)  
Remarks: The value is given in analogy to the following substances:  
Respiratory or skin sensitization  
Maximization Test - Guinea pig  
Result: negative  
(OECD Test Guideline 406)  
Remarks: The value is given in analogy to the following substances:  
Germ cell mutagenicity  
Ames test  
Salmonella typhimurium  
Result: negative  
The value is given in analogy to the following substances:  
Mutagenicity (mammal cell test):  
Result: negative  
The value is given in analogy to the following substances:  
Mutagenicity (mammal cell test): chromosome aberration.  
Human lymphocytes  
Result: negative  
The value is given in analogy to the following substances:  
Mutagenicity (mammal cell test): chromosome aberration.  
Result: negative The value is given in analogy to the following substances:  
OECD Test Guideline 478  
Rat - male and female  
Result: negative  
The value is given in analogy to the following substances:  
OECD Test Guideline 474  
Mouse - male and female  
Result: negative  
The value is given in analogy to the following substances: Carcinogenicity  
Carcinogenicity- Mouse- male and female- inhalation (vapor) Did not show carcinogenic effects in animal experiments. The value is given in analogy to the following substances:  
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.

Reproductive toxicity  
Specific target organ toxicity - single exposure  
Specific target organ toxicity - repeated exposure  
Aspiration hazard  
Aspiration hazard, Aspiration may cause pulmonary edema and pneumonitis.  
Additional Information  
Repeated dose toxicity - Rat - male and female - Oral - 91 d - NOAEL (No observed adverse effect level) -  $\geq 5.000$  mg/kg  
The value is given in analogy to the following substances:  
RTECS: Not available  
To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.  
After absorption of large quantities:  
narcosis  
Other information  
It generally applies for aliphatic hydrocarbons with 6 - 18 carbon atoms that they may cause pneumonia, in some cases also pulmonary oedema, upon direct inhalation, i.e. in conditions that can occur only in very special circumstances (nebulizations, spraying, inhalation of aerosols and similar). After absorption of very large quantities: narcosis.  
Further data:  
Other dangerous properties can not be excluded.  
Handle in accordance with good industrial hygiene and safety practice.

## 12. ECOLOGICAL INFORMATION

12.1 Toxicity  
Toxicity to daphnia  
and other aquatic  
invertebrates  
EC50 - Daphnia magna (Water flea) - 18 mg/l - 48 h  
Remarks: (IUCLID)The value is given in analogy to the following  
substances:(above the solubility limit in the test medium)  
Toxicity to algae IC50 - Chlorella vulgaris (Fresh water algae) - 0,043 mg/l - 24 h  
Remarks: (IUCLID)The value is given in analogy to the following  
substances:  
NOEC - Desmodesmus subspicatus (green algae) - 0,05 mg/l - 72 h  
(OECD Test Guideline 201)  
Remarks: (above the solubility limit in the test medium)The value is  
given in analogy to the following substances:  
12.2 Persistence and degradability  
Biodegradability aerobic - Exposure time 28 d  
Result: 83,1 % - Readily biodegradable.  
(OECD Test Guideline 301F) Remarks: The value is given in analogy to the following substances:  
12.3 Bioaccumulative potential  
12.4 Mobility in soil  
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  
Discharge into the environment must be avoided

## 13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods  
Product  
Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra  
care in igniting as this material is highly flammable. Offer surplus and non-recyclable  
solutions to a licensed disposal company.  
Contaminated packaging  
Dispose of as unused product.

## 14. TRANSPORT INFORMATION

14.1 UN number  
ADR/RID: 2247 IMDG: 2247 IATA: 2247  
14.2 UN proper shipping name  
ADR/RID: n-DECANE  
IMDG: n-DECANE  
IATA: n-Decane  
14.3 Transport hazard class(es)  
ADR/RID: 3 IMDG: 3 IATA: 3  
14.4 Packaging group  
ADR/RID: III IMDG: III IATA: III

14.5 Environmental hazards  
ADR/RID: no IMDG Marine pollutant: no IATA: no  
14.6 Special precautions for user  
No data available

## 15. REGULATORY INFORMATION

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture  
This material safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006.  
International Chemical Weapons Convention (CWC) Schedules of Toxic Chemicals and Precursors  
: Neither banned nor restricted Restrictions on the marketing and use of certain dangerous substances  
: Neither banned nor restricted  
Regulation (EC) No 649/2012 of the European Parliament and the Council concerning the export and import of dangerous chemicals  
: Neither banned nor restricted  
REACH - Candidate List of Substances of Very High Concern for Authorisation (Article 59).  
: This product does not contain substances of very high concern (Regulation (EC) No. 1907/2006 (REACH), Article 57).  
15.2 Chemical Safety Assessment  
For this product a chemical safety assessment was not carried out

## 16. OTHER 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. For lab use only!