

### 1. PRODUCT AND COMPANY IDENTIFICATION

#### 1.1 Product identifiers

Product name : Nonanoic acid

Product Number : N5502  
Brand : Sigma  
Index-No. : 607-197-00-8

CAS-No. : 112-05-0

#### 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  
3050 Spruce Street  
SAINT LOUIS MO 63103  
USA

Telephone : +1 800-325-5832  
Fax : +1 800-325-5052

#### 1.4 Emergency telephone number

Emergency Phone # : +1-703-527-3887 (CHEMTREC)

### 2. HAZARDS IDENTIFICATION

#### 2.1 Classification of the substance or mixture

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

Skin irritation (Category 2), H315  
Eye irritation (Category 2A), H319  
Acute aquatic toxicity (Category 3), H402  
Chronic aquatic toxicity (Category 3), H412

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

#### 2.2 GHS Label elements, including precautionary statements

Pictogram



Signal word

Warning

Hazard statement(s)

H315 Causes skin irritation.  
H319 Causes serious eye irritation.  
H412 Harmful to aquatic life with long lasting effects.

Precautionary statement(s)

P264 Wash skin thoroughly after handling.  
P273 Avoid release to the environment.  
P280 Wear protective gloves/ eye protection/ face protection.  
P302 + P352 IF ON SKIN: Wash with plenty of soap and water.  
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P332 + P313 If skin irritation occurs: Get medical advice/ attention.  
P337 + P313 If eye irritation persists: Get medical advice/ attention.  
P362 Take off contaminated clothing and wash before reuse.  
P501 Dispose of contents/ container to an approved waste disposal plant.

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

### 3. COMPOSITION/INFORMATION ON INGREDIENTS

#### 3.1 Substances

Synonyms : Pelargonic acid  
Acid C9

Formula : C<sub>9</sub>H<sub>18</sub>O<sub>2</sub>  
Molecular weight : 158.24 g/mol  
CAS-No. : 112-05-0  
EC-No. : 203-931-2  
Index-No. : 607-197-00-8  
Registration number : 01-2119529247-37-XXXX

#### Hazardous components

Component	Classification	Concentration
<b>Nonanoic acid</b>		
	Skin Irrit. 2; Eye Irrit. 2A; Aquatic Acute 3; Aquatic Chronic 3; H315, H319, H412	90 - 100 %

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

### 4. FIRST AID MEASURES

#### 4.1 Description of first aid measures

##### General advice

Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

##### 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

Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

##### If swallowed

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. FIREFIGHTING 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

No data available

**5.3 Advice for firefighters**  
Wear self-contained breathing apparatus for firefighting if necessary.

**5.4 Further information**  
No data available

---

## 6. ACCIDENTAL RELEASE MEASURES

- 6.1 Personal precautions, protective equipment and emergency procedures**  
Use personal protective equipment. Avoid breathing vapours, mist or gas. Ensure adequate ventilation.  
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. Discharge into the environment must be avoided.
- 6.3 Methods and materials for containment and cleaning up**  
Soak up with inert absorbent material and dispose of as hazardous waste. Keep in suitable, closed containers for disposal.
- 6.4 Reference to other sections**  
For disposal see section 13.

---

## 7. HANDLING AND STORAGE

- 7.1 Precautions for safe handling**  
Avoid contact with skin and eyes. Avoid inhalation of vapour or mist.  
For precautions see section 2.2.
- 7.2 Conditions for safe storage, including any incompatibilities**  
Keep container tightly closed in a dry and well-ventilated place.  
  
Recommended storage temperature 2 - 8 °C  
Storage class (TRGS 510): 8A: Combustible, corrosive hazardous materials
- 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

#### Components with workplace control parameters

Contains no substances with occupational exposure limit values.  
Hazardous components without 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

Safety glasses with side-shields conforming to EN166 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 glove's 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.

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)

Splash contact

Material: Nitrile rubber  
Minimum layer thickness: 0.11 mm  
Break through time: 60 min  
Material tested: Dermatril® (KCL 740 / Aldrich Z677272, Size M)

data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN374

If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

### Body Protection

Impervious 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 full-face 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. Discharge into the environment must be avoided.

---

## 9. PHYSICAL AND CHEMICAL PROPERTIES

### 9.1 Information on basic physical and chemical properties

- |                                                 |                                                                      |
|-------------------------------------------------|----------------------------------------------------------------------|
| a) Appearance                                   | Form: liquid<br>Colour: clear, colourless                            |
| b) Odour                                        | No data available                                                    |
| c) Odour Threshold                              | No data available                                                    |
| d) pH                                           | 4.4 at 0.1 g/l at 25 °C (77 °F) - DIN 19268                          |
| e) Melting point/freezing point                 | Melting point/range: 9 °C (48 °F) - lit.                             |
| f) Initial boiling point and boiling range      | 268 - 269 °C (514 - 516 °F) - lit.                                   |
| g) Flash point                                  | 137 °C (279 °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: 9 %(V)<br>Lower explosion limit: 0.8 %(V)     |
| k) Vapour pressure                              | < 0.1 hPa (< 0.1 mmHg) at 20 °C (68 °F)                              |
| l) Vapour density                               | 5.46 - (Air = 1.0)                                                   |
| m) Relative density                             | 0.906 g/cm <sup>3</sup> at 25 °C (77 °F)                             |
| n) Water solubility                             | 0.3 g/l at 20 °C (68 °F) - OECD Test Guideline 105 - partly miscible |
| o) Partition coefficient: n-octanol/water       | log Pow: 3.4 at 25 °C (77 °F)                                        |
| p) Auto-ignition temperature                    | 355 °C (671 °F) at 1,013 hPa (760 mmHg)                              |
| 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

- Surface tension 31.7 mN/m at 20 °C (68 °F)
- Relative vapour density 5.46 - (Air = 1.0)

---

## 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

No data available

### 10.5 Incompatible materials

Strong oxidizing agents

### 10.6 Hazardous decomposition products

Hazardous decomposition products formed under fire conditions. - Carbon oxides  
Other decomposition products - No data available  
In the event of fire: see section 5

---

## 11. TOXICOLOGICAL INFORMATION

### 11.1 Information on toxicological effects

#### Acute toxicity

LD50 Oral - Rat - male and female - > 2,000 mg/kg  
(OECD Test Guideline 423)

LC50 Inhalation - Rat - male and female - 4 h - > 5.997 mg/l  
(OECD Test Guideline 403)

LD50 Dermal - Rat - male and female - > 2,000 mg/kg  
(OECD Test Guideline 402)

No data available

#### Skin corrosion/irritation

Skin - Rabbit

Result: Irritating to skin. - 4 h  
(OECD Test Guideline 404)

#### Serious eye damage/eye irritation

No data available

#### Respiratory or skin sensitisation

Buehler Test - Guinea pig

Result: Does not cause skin sensitisation.  
(OECD Test Guideline 406)

#### Germ cell mutagenicity

reverse mutation assay

Salmonella typhimurium

Result: negative

#### Carcinogenicity

IARC: No component 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 component 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

No data available

**Specific target organ toxicity - single exposure**

No data available

**Specific target organ toxicity - repeated exposure**

No data available

**Aspiration hazard**

No data available

**Additional Information**

RTECS: Not available

Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin., Cough, Shortness of breath, Headache, Nausea

---

**12. ECOLOGICAL INFORMATION**

**12.1 Toxicity**

Toxicity to fish                      flow-through test LC50 - Pimephales promelas (fathead minnow) - 104 mg/l - 96 h  
(OECD Test Guideline 203)

Toxicity to daphnia and other aquatic invertebrates                      static test EC50 - Daphnia magna (Water flea) - 96 mg/l - 48 h

Toxicity to algae                      Remarks: No data available

**12.2 Persistence and degradability**

Biodegradability                      aerobic - Exposure time 28 d  
Result: 68 - 75 % - Readily biodegradable.  
(OECD Test Guideline 301B)

**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 Other adverse effects**

An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.  
Harmful to aquatic life with long lasting effects.

An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.  
Harmful to aquatic life with long lasting effects.

---

**13. DISPOSAL CONSIDERATIONS**

**13.1 Waste treatment methods**

**Product**

Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material.

**Contaminated packaging**  
Dispose of as unused product.

---

#### 14. TRANSPORT INFORMATION

**DOT (US)**

Not dangerous goods

**IMDG**

Not dangerous goods

**IATA**

Not dangerous goods

---

#### 15. REGULATORY INFORMATION

**SARA 302 Components**

No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

**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.

**SARA 311/312 Hazards**

Acute Health Hazard

**Massachusetts Right To Know Components**

Nonanoic acid

CAS-No.  
112-05-0

Revision Date

**Pennsylvania Right To Know Components**

Nonanoic acid

CAS-No.  
112-05-0

Revision Date

**New Jersey Right To Know Components**

Nonanoic acid

CAS-No.  
112-05-0

Revision Date

**California Prop. 65 Components**

This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

---

#### 16. OTHER INFORMATION

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

Aquatic Acute	Acute aquatic toxicity
Aquatic Chronic	Chronic aquatic toxicity
Eye Irrit.	Eye irritation
H315	Causes skin irritation.
H319	Causes serious eye irritation.
H402	Harmful to aquatic life.

Further information

Copyright 2016 Sigma-Aldrich Co. LLC. License granted to make unlimited paper copies for internal use only. 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](http://www.sigma-aldrich.com) and/or the reverse side of invoice or packing slip for additional terms and conditions of sale.

**Preparation Information**  
Sigma-Aldrich Corporation  
Product Safety – Americas Region  
1-800-521-8956

Version: 5.10

Revision Date: 07/30/2018

Print Date: 11/10/2018