

### 1. PRODUCT AND COMPANY IDENTIFICATION

Product name : Nonane

Product Number : 74250  
Brand : Fluka

Supplier : Sigma-Aldrich  
3050 Spruce Street  
SAINT LOUIS MO 63103  
USA

Telephone : +1 800-325-5832  
Fax : +1 800-325-5052  
Emergency Phone # (For both supplier and manufacturer) : (314) 776-6555

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

### 2. HAZARDS IDENTIFICATION

#### Emergency Overview

##### OSHA Hazards

Flammable liquid, Irritant

##### Target Organs

Central nervous system

##### GHS Classification

Flammable liquids (Category 3)  
Acute toxicity, Inhalation (Category 4)  
Skin irritation (Category 2)  
Eye irritation (Category 2A)  
Specific target organ toxicity - single exposure (Category 3)  
Aspiration hazard (Category 1)

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

Pictogram



Signal word

Danger

Hazard statement(s)

H226 Flammable liquid and vapour.  
H304 May be fatal if swallowed and enters airways.  
H315 Causes skin irritation.  
H319 Causes serious eye irritation.  
H332 Harmful if inhaled.  
H336 May cause drowsiness or dizziness.

Precautionary statement(s)

P261 Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.  
P301 + P310 IF SWALLOWED: Immediately call a POISON CENTER or doctor/ physician.  
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P331 Do NOT induce vomiting.

#### HMIS Classification

Health hazard: 2  
Flammability: 3  
Physical hazards: 0

#### NFPA Rating

Health hazard: 2  
Fire: 3  
Reactivity Hazard: 0

#### Potential Health Effects

**Inhalation** May be harmful if inhaled. Causes respiratory tract irritation. Vapours may cause drowsiness and dizziness.  
**Skin** May be harmful if absorbed through skin. Causes skin irritation.  
**Eyes** Causes eye irritation.  
**Ingestion** May be harmful if swallowed. Aspiration hazard if swallowed - can enter lungs and cause damage.

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### 3. COMPOSITION/INFORMATION ON INGREDIENTS

Synonyms : n-Nonane  
Formula : C<sub>9</sub>H<sub>20</sub>  
Molecular Weight : 128.26 g/mol

Component	Concentration
<b>Nonane</b>	
CAS-No. 111-84-2	-
EC-No. 203-913-4	

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### 4. 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

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

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### 5. FIREFIGHTING MEASURES

#### Suitable extinguishing media

For small (incipient) fires, use media such as "alcohol" foam, dry chemical, or carbon dioxide. For large fires, apply water from as far as possible. Use very large quantities (flooding) of water applied as a mist or spray; solid streams of water may be ineffective. Cool all affected containers with flooding quantities of water.

#### Special protective equipment for firefighters

Wear self contained breathing apparatus for fire fighting if necessary.

#### Hazardous combustion products

Hazardous decomposition products formed under fire conditions. - Carbon oxides

#### Further information

Use water spray to cool unopened containers.

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## 6. ACCIDENTAL RELEASE MEASURES

### Personal precautions

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

### 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.

### Methods and materials for containment and cleaning up

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

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## 7. HANDLING AND STORAGE

### Precautions for safe handling

Avoid contact with skin and eyes. Avoid inhalation of vapour or mist.

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

### Conditions for safe storage

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.

Moisture sensitive.

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## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### Components with workplace control parameters

Components	CAS-No.	Value	Control parameters	Basis
Nonane	111-84-2	TWA	200 ppm	USA. ACGIH Threshold Limit Values (TLV)
Remarks	Central Nervous System impairment			
		TWA	200 ppm 1,050 mg/m <sup>3</sup>	USA. OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000
		TWA	200 ppm 1,050 mg/m <sup>3</sup>	USA. NIOSH Recommended Exposure Limits

### Personal protective equipment

#### 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).

#### Hand 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.

#### Immersion protection

Material: Nitrile rubber

Minimum layer thickness: 0.4 mm

Break through time: > 480 min

Material tested: Camatril® (Aldrich Z677442, Size M)

#### Splash protection

Material: Nitrile rubber

Minimum layer thickness: 0.2 mm

Break through time: > 30 min

Material tested: Dermatril® P (Aldrich Z677388, Size M)

data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 873000, 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 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.

### Eye 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 and body protection

Complete suit protecting against chemicals, 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.

### Hygiene measures

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

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## 9. PHYSICAL AND CHEMICAL PROPERTIES

### Appearance

Form	liquid
Colour	no data available

### Safety data

pH	no data available
Melting point/freezing point	Melting point/range: -53 °C (-63 °F) - lit.
Boiling point	151 °C (304 °F) - lit.
Flash point	31.0 °C (87.8 °F) - closed cup
Ignition temperature	205 °C (401 °F)
Autoignition temperature	205.0 °C (401.0 °F)
Lower explosion limit	0.87 %(V)
Upper explosion limit	2.9 %(V)
Vapour pressure	12.4 hPa (9.3 mmHg) at 37.7 °C (99.9 °F) 13.3 hPa (10.0 mmHg) at 20.0 °C (68.0 °F)
Density	0.718 g/mL at 25 °C (77 °F)
Water solubility	insoluble
Partition coefficient: n-octanol/water	log Pow: 5.65
Relative vapour density	no data available
Odour	no data available
Odour Threshold	no data available
Evaporation rate	no data available

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## 10. STABILITY AND REACTIVITY

### Chemical stability

Stable under recommended storage conditions.

## Possibility of hazardous reactions

Vapours may form explosive mixture with air.

### Conditions to avoid

Heat, flames and sparks.

### Materials to avoid

Strong oxidizing agents

### Hazardous decomposition products

Hazardous decomposition products formed under fire conditions. - Carbon oxides

Other decomposition products - no data available

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## 11. TOXICOLOGICAL INFORMATION

### Acute toxicity

#### Oral LD50

#### Inhalation LC50

LC50 Inhalation - rat - 4 h - 3200 ppm

#### Dermal LD50

no data available

#### Other information on acute toxicity

no data available

### Skin corrosion/irritation

Skin - rat - Skin irritation - Draize Test

### Serious eye damage/eye irritation

no data available

### Respiratory or skin sensitization

no data available

### Germ cell mutagenicity

no data available

### 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.

ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

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 identified as a carcinogen or potential carcinogen by OSHA.

### Reproductive toxicity

no data available

### Teratogenicity

no data available

### Specific target organ toxicity - single exposure (Globally Harmonized System)

May cause drowsiness or dizziness.

### Specific target organ toxicity - repeated exposure (Globally Harmonized System)

no data available

**Aspiration hazard**

The substance or mixture is known to cause human aspiration toxicity hazards or has to be regarded as if it causes a human aspiration toxicity hazard.

**Potential health effects**

<b>Inhalation</b>	May be harmful if inhaled. Causes respiratory tract irritation. Vapours may cause drowsiness and dizziness.
<b>Ingestion</b>	May be harmful if swallowed. Aspiration hazard if swallowed - can enter lungs and cause damage.
<b>Skin</b>	May be harmful if absorbed through skin. Causes skin irritation.
<b>Eyes</b>	Causes eye irritation.

**Signs and Symptoms of Exposure**

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

**Synergistic effects**

no data available

**Additional Information**

RTECS: RA6115000

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**12. ECOLOGICAL INFORMATION****Toxicity**

no data available

**Persistence and degradability****Bioaccumulative potential**

Indication of bioaccumulation.

**Mobility in soil**

no data available

**PBT and vPvB assessment**

no data available

**Other adverse effects**

An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

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**13. DISPOSAL CONSIDERATIONS****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. Contact a licensed professional waste disposal service to dispose of this material.

**Contaminated packaging**

Dispose of as unused product.

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**14. TRANSPORT INFORMATION****DOT (US)**

UN number: 1920 Class: 3 Packing group: III  
Proper shipping name: Nonanes  
Marine pollutant: No  
Poison Inhalation Hazard: No

**IMDG**

UN number: 1920 Class: 3 Packing group: III EMS-No: F-E, S-E  
Proper shipping name: NONANES  
Marine pollutant: No

**IATA**

UN number: 1920 Class: 3 Packing group: III  
Proper shipping name: Nonanes

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**15. REGULATORY INFORMATION****OSHA Hazards**

Flammable liquid, Irritant

**SARA 302 Components**

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

**SARA 313 Components**

SARA 313: 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**

Fire Hazard, Acute Health Hazard

**Massachusetts Right To Know Components**

	CAS-No.	Revision Date
Nonane	111-84-2	2007-03-01

**Pennsylvania Right To Know Components**

	CAS-No.	Revision Date
Nonane	111-84-2	2007-03-01

**New Jersey Right To Know Components**

	CAS-No.	Revision Date
Nonane	111-84-2	2007-03-01

**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.

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**16. OTHER INFORMATION****Further information**

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