

# SAFETY DATA SHEET

## 1. PRODUCT

### 1.1 Product identifiers

Name: 2-Ethylhexyl nitrate

CAS-No.: 27247-96-7

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

Identified uses : Laboratory chemicals, Synthesis of substances

## 2. HAZARDS IDENTIFICATION

### 2.1 Classification of the substance or mixture

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

Flammable liquids (Category 4), H227

Acute toxicity, Oral (Category 4), H302

Acute toxicity, Inhalation (Category 4), H332

Acute toxicity, Dermal (Category 4), H312

Acute aquatic toxicity (Category 2), H401

Chronic aquatic toxicity (Category 2), H411

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)        | H227 Combustible liquid.<br>H302 + H312 + H332 Harmful if swallowed, in contact with skin or if inhaled<br>H411 Toxic to aquatic life with long lasting effects.   |
| Precautionary statement(s) | P210 Keep away from heat/sparks/open flames/hot surfaces. No smoking.<br>P261 Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.<br>P264 Wash skin thoroughly after handling.<br>P270 Do not eat, drink or smoke when using this product.<br>P271 Use only outdoors or in a well-ventilated area.<br>P273 Avoid release to the environment.<br>P280 Wear protective gloves/ eye protection/ face protection.<br>P301 + P312 + P330 IF SWALLOWED: Call a POISON CENTER or doctor/ physician if you feel unwell. Rinse mouth.<br>P302 + P352 + P332 IF ON SKIN: Wash with plenty of soap and water. Call a POISON CENTER or doctor/ physician if you feel unwell.<br>P304 + P340 + P312 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/ physician if you feel unwell.<br>P363 Wash contaminated clothing before reuse.<br>P370 + P378 In case of fire: Use dry sand, dry chemical or alcohol-resistant foam for extinction.<br>P391 Collect spillage.<br>P403 + P235 Store in a well-ventilated place. Keep cool.<br>P501 Dispose of contents/ container to an approved waste disposal plant. |

### 2.3 Hazards not otherwise classified (HNOC) or not covered by GHS

Risk of explosion if heated under confinement., Repeated exposure may cause skin dryness or cracking.

## 3. COMPOSITION/INFORMATION ON INGREDIENTS

### 3.1 Substances

Formula:  $C_8H_{17}NO_3$   
Molecular weight: 175.23 g/mol  
CAS-No.: 27247-96-7  
EC-No.: 248-363-6

## Hazardous components

| Component            | Classification   | Concentration |
|----------------------|--|---------------|
| 2-Ethylhexyl nitrate | Flam. Liq. 4; Acute Tox. 4; Aquatic Acute 2; Aquatic Chronic 2; H227, H302 + H312 + H332, H411 | <= 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

|   |
|---|
| <b>General advice</b>   |
| Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.                   |
| <b>If inhaled</b>   |
| If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.             |
| <b>In case of skin contact</b>  |
| Wash off with soap and plenty of water. Consult a physician.  |
| <b>In case of eye contact</b>   |
| Flush eyes with water as a precaution.  |
| <b>If swallowed</b>   |
| 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

### 4.2 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

Carbon oxides, Nitrogen oxides (NO<sub>x</sub>)

### 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 vapours, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Beware of vapours accumulating to form explosive concentrations. Vapours 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. Discharge into the environment must be avoided.

## 6.3 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). 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.

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

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.

Storage class (TRGS 510): Combustible liquids

### 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.

### 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                   | <p>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.</p> <p>Full contact<br/>Material: Nitrile rubber<br/>Minimum layer thickness: 0.4 mm<br/>Break through time: 480 min<br/>Material tested: Camatril® (KCL 730 / Aldrich Z677442, Size M)</p> <p>Splash contact<br/>Material: Nitrile rubber<br/>Minimum layer thickness: 0.2 mm<br/>Break through time: 60 min<br/>Material tested: Dermatril® P (KCL 743 / Aldrich Z677388, Size M)<br/>data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN374</p> <p>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.</p> |
| Body Protection                   | Complete suit protecting against chemicals, 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

|  |  |
|--|--|
| Appearance                                   | Form: liquid<br>Colour: colourless, yellow                 |
| Odour  | No data available  |
| Odour Threshold                              | No data available  |
| pH   | No data available  |
| Melting point/freezing point                 | No data available  |
| Initial boiling point and boiling range      | No data available  |
| Flash point                                  | 76.1 °C (169.0 °F) - Pensky-Martens closed cup - ASTM D 93 |
| Evaporation rate                             | No data available  |
| Flammability (solid, gas)                    | No data available  |
| Upper/lower flammability or explosive limits | No data available  |
| Vapour pressure                              | No data available  |
| Vapour density                               | No data available  |
| Relative density                             | 0.963 g/cm <sup>3</sup> at 25 °C (77 °F)                   |
| Water solubility                             | 0.0125 g/l at 20 °C (68 °F) - slightly soluble             |
| Partition coefficient: n-octanol/water       | log Pow: 5.24  |
| Auto-ignition temperature                    | 215 °C (419 °F) at 1,013.25 hPa (760.00 mmHg)              |
| Decomposition temperature                    | No data available  |
| Viscosity                                    | No data available  |
| Explosive properties                         | Risk of explosion if heated under confinement.             |
| 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

Organic materials, Powdered metals Strong oxidizing agents

### 10.6 Hazardous decomposition products

Other decomposition products - No data available

In the event of fire: see section 5

---

## 11. TOXICOLOGICAL INFORMATION

### 11.1 Information on toxicological effects

|   |
|---|
| <b>Acute toxicity</b>   |
| LD50 Oral - Rat - 960 mg/kg<br>Inhalation: No data available<br>Dermal: No data available<br>No data available  |
| <b>Skin corrosion/irritation</b>  |
| Skin - Rabbit<br>Result: No skin irritation - 4 h<br>(OECD Test Guideline 404)  |
| <b>Serious eye damage/eye irritation</b>  |
| No data available   |
| <b>Respiratory or skin sensitisation</b>  |
| Maximisation Test (GPMT) - Guinea pig<br>Result: Does not cause skin sensitisation.<br>(OECD Test Guideline 406)  |
| <b>Germ cell mutagenicity</b>   |
| Ames test<br>S. typhimurium<br>Result: negative   |
| <b>Carcinogenicity</b>  |
| 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.<br>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.<br>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.<br>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. |
| <b>Reproductive toxicity</b>  |
| No data available<br>No data available  |
| <b>Specific target organ toxicity -single exposure</b>  |
| No data available   |
| <b>Specific target organ toxicity -repeated exposure</b>  |
| No data available   |
| <b>Aspiration hazard</b>  |
| No data available   |
| <b>Additional Information</b>   |
| RTECS: QU7925000<br>To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.   |

---

## 12. ECOLOGICAL INFORMATION

## 12.1 Toxicity

|   |  |
|---|--|
| Toxicity to fish                                    | semi-static test LC50 - Danio rerio (zebra fish) - 2 mg/l - 96 h<br>(OECD Test Guideline 203)      |
| Toxicity to daphnia and other aquatic invertebrates | static test EC50 - Daphnia magna (Water flea) - > 12.6 mg/l - 48 h<br>(OECD Test Guideline 202)    |
| Toxicity to algae                                   | static test EC50 - Pseudokirchneriella subcapitata - 3.22 mg/l - 72 h<br>(OECD Test Guideline 201) |
| Toxicity to bacteria                                | Growth inhibition EC50 - Sludge Treatment - > 1,000 mg/l - 3 h<br>(OECD Test Guideline 209)        |

## 12.2 Persistence and degradability

|                  |   |
|------------------|---|
| Biodegradability | aerobic - Exposure time 28 d<br>Result: 0 % - Not readily biodegradable.<br>(OECD Test Guideline 310) |
|------------------|---|

## 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.

Toxic to aquatic life with long lasting effects.

---

## 13. DISPOSAL CONSIDERATIONS

### 13.1 Waste treatment methods

|   |
|---|
| <b>Product</b>  |
| This combustible material may be burned in a chemical incinerator equipped with an afterburner and scrubber. Offer surplus and non-recyclable solutions to a licensed disposal company. |
| <b>Contaminated packaging</b>   |
| Dispose of as unused product.   |

---

## 14. TRANSPORT INFORMATION

### DOT (US)

NA-Number: 1993 Class: NONE Packing group: III

Proper shipping name: Combustible liquid, n.o.s. (2-Ethylhexyl nitrate)

Reportable Quantity (RQ):

Poison Inhalation Hazard: No

### IMDG

UN number: 3082 Class: 9 Packing group: III EMS-No: F-A, S-F

Proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (2-Ethylhexyl nitrate)

Marine pollutant:yes

### IATA

UN number: 3082 Class: 9 Packing group: III

Proper shipping name: Environmentally hazardous substance, liquid, n.o.s. (2-Ethylhexyl nitrate)

Further information

EHS-Mark required (ADR 2.2.9.1.10, IMDG code 2.10.3) for single packagings and combination packagings containing inner packagings with Dangerous Goods > 5L for liquids or > 5kg for solids.

---

## 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.

### Massachusetts Right To Know Components

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

### Pennsylvania Right To Know Components

| Component            | CAS-No.    | Revision Date |
|----------------------|------------|---------------|
| 2-Ethylhexyl nitrate | 27247-96-7 |               |

### New Jersey Right To Know Components

| Component            | CAS-No.    | Revision Date |
|----------------------|------------|---------------|
| 2-Ethylhexyl nitrate | 27247-96-7 |               |

### 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.

Acute Tox. Acute toxicity

Aquatic Acute Acute aquatic toxicity

Aquatic Chronic Chronic aquatic toxicity

Flam. Liq. Flammable liquids

H227 Combustible liquid.

H302 Harmful if swallowed.

H302 + H312 +H332 Harmful if swallowed, in contact with skin or if inhaled

### HMIS Rating

Health hazard: 1

Chronic Health Hazard:

Flammability: 2

Physical Hazard 0

### NFPA Rating

Health hazard: 1

Fire Hazard: 2

Reactivity Hazard: 0

---