# SAFETY DATA SHEET

## 1. PRODUCT

### 1.1 Product identifiers

Name: trans-2-Pentene

CAS-No.: 646-04-8

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

Identified uses : Laboratory chemicals, Manufacture 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 1), H224

Skin irritation (Category 2), H315

Eye irritation (Category 2A), H319

Specific target organ toxicity - single exposure (Category 3), Respiratory system, H335

Aspiration hazard (Category 1), H304

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 | Danger |
| Hazard statement(s) | H224 Extremely flammable liquid and vapour.<br>H304 May be fatal if swallowed and enters airways.<br>H315 Causes skin irritation.<br>H319 Causes serious eye irritation.<br>H335 May cause respiratory irritation. |
| Precautionary statement(s) | P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.<br>P233 Keep container tightly closed.<br>P240 Ground/bond container and receiving equipment.<br>P241 Use explosion-proof electrical/ ventilating/ lighting/ equipment.<br>P242 Use only non-sparking tools.<br>P243 Take precautionary measures against static discharge.<br>P261 Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.<br>P264 Wash skin thoroughly after handling.<br>P271 Use only outdoors or in a well-ventilated area.<br>P280 Wear protective gloves/ eye protection/ face protection.<br>P301 + P310 IF SWALLOWED: Immediately call a POISON CENTER or doctor/ physician.<br>P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.<br>P304 + P340 + P312 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or doctor/ physician if you feel unwell.<br>P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.<br>P331 Do NOT induce vomiting.<br>P332 + P313 If skin irritation occurs: Get medical advice/ attention.<br>P337 + P313 If eye irritation persists: Get medical advice/ attention.<br>P362 Take off contaminated clothing and wash before reuse.<br>P370 + P378 In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.<br>P403 + P233 Store in a well-ventilated place. Keep container tightly closed.<br>P403 + P235 Store in a well-ventilated place. Keep cool.<br>P405 Store locked up.<br>P501 Dispose of contents/ container to an approved waste disposal plant. |

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

No data available

## 3. COMPOSITION/INFORMATION ON INGREDIENTS

### 3.1 Substances

| | |
|---|---|
| Formula: | $C_5H_{10}$ |
| Molecular weight: | 70.13 g/mol |
| CAS-No.: | 646-04-8 |
| EC-No.: | 211-461-4 |

**Hazardous components**

| Component | Classification | Concentration |
|---|---|---|
| **trans-Pent-2-ene** | | |
| | Flam. Liq. 1; Skin Irrit. 2; Eye Irrit. 2A; STOT SE 3; Asp. Tox. 1; H224, H304, H315, H319, H335 | <= 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** |
| 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

### 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. Evacuate personnel to safe areas. 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.

### 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).

### 6.4 Reference to other sections

For disposal see section 13.

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## 7. HANDLING AND STORAGE

### 7.1 Precautions for safe handling

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

Use explosion-proof equipment.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.

Recommended storage temperature 2 - 8 °C

Storage class (TRGS 510): Flammable liquids

### 7.3 Specific end use(s)

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

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## 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 | 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. |

| | |
|---|---|
| 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. |
| Respiratory protection | Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type AXBEK (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

| | |
|---|---|
| Appearance | Form: clear, liquid<br>Colour: colourless |
| Odour | No data available |
| Odour Threshold | No data available |
| pH | No data available |
| Melting point/freezing point | Melting point/range: -140 °C (-220 °F) - lit. |
| Initial boiling point and boiling range | 35 - 36 °C (95 - 97 °F) at 1,013 hPa (760 mmHg) |
| Flash point | -17.99 °C (-0.38 °F) - closed cup |
| Evaporation rate | No data available |
| Flammability (solid, gas) | No data available |
| Upper/lower flammability or explosive limits | Lower explosion limit: 1.4 %(V) |
| Vapour pressure | 563.2 hPa (422.4 mmHg) at 20 °C (68 °F)<br>1,846.5 hPa (1,385.0 mmHg) at 55 °C (131 °F) |
| Vapour density | No data available |
| Relative density | 0.649 g/cm3 at 25 °C (77 °F) |
| Water solubility | No data available |
| Partition coefficient: n-octanol/water | No data available |
| Auto-ignition temperature | No data available |
| Decomposition temperature | No data available |
| Viscosity | No data available |
| Explosive properties | No data available |
| 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

Vapours may form explosive mixture with air.

### 10.4 Conditions to avoid

Heat, flames and sparks.

### 10.5 Incompatible materials

acids, 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

| **Acute toxicity** |
|---|
| No data available<br>Dermal: No data available<br>No data available |
| **Skin corrosion/irritation** |
| No data available |
| **Serious eye damage/eye irritation** |
| No data available |
| **Respiratory or skin sensitisation** |
| 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.<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. |
| **Reproductive toxicity** |
| No data available<br>No data available |
| **Specific target organ toxicity -single exposure** |
| Inhalation - May cause respiratory irritation. |
| **Specific target organ toxicity -repeated exposure** |
| 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. |
| **Additional Information** |
| RTECS: SB2184500<br>Cough, Shortness of breath, Headache, Nausea, Vomiting |

## 12. ECOLOGICAL INFORMATION

### 12.1 Toxicity

No data available

### 12.2 Persistence and degradability

No data available

### 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

No data available

## 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. Contact a licensed professional waste disposal service to dispose of this material. |
| **Contaminated packaging** |
| Dispose of as unused product. |

## 14. TRANSPORT INFORMATION

### DOT (US)

UN number: 3295 Class: 3 Packing group: II

Proper shipping name: Hydrocarbons, liquid, n.o.s.

Reportable Quantity (RQ):

Poison Inhalation Hazard: No

### IMDG

UN number: 3295  Class: 3 Packing group: II EMS-No: F-E, S-D

Proper shipping name: HYDROCARBONS, LIQUID, N.O.S.

### IATA

UN number: 3295 Class: 3 Packing group: II

Proper shipping name: Hydrocarbons, liquid, n.o.s.

## 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

Fire Hazard, Acute Health Hazard

### Massachusetts Right To Know Components

| Component | CAS-No. | Revision Date |
|---|---|---|
| trans-Pent-2-ene | 646-04-8 | 1993-04-24 |

### Pennsylvania Right To Know Components

| Component | CAS-No. | Revision Date |
|---|---|---|
| trans-Pent-2-ene | 646-04-8 | 1993-04-24 |

### New Jersey Right To Know Components

| Component | CAS-No. | Revision Date |
|---|---|---|
| trans-Pent-2-ene | 646-04-8 | 1993-04-24 |

### 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

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

Asp. Tox. Aspiration hazard

Eye Irrit. Eye irritation

Flam. Liq. Flammable liquids

H224 Extremely flammable liquid and vapour.

H304 May be fatal if swallowed and enters airways.

H315 Causes skin irritation.

H319 Causes serious eye irritation.

H335 May cause respiratory irritation.

Skin Irrit. Skin irritation

STOT SE Specific target organ toxicity - single exposure

### HMIS Rating

Health hazard: 2

Chronic Health Hazard:

Flammability: 4

Physical Hazard 0

### NFPA Rating

Health hazard: 2

Fire Hazard: 4

Reactivity Hazard: 0

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