SECTION 1: Identification

1.1. Product identifier

Product name: VALENCE tech
Product code: ENEV4450
Product form: Substance
Physical state: Liquid
Formula: C15H24
Synonyms: (2R)-8,8,8A-TRIMETHYL-2-PROP-1-EN-2-YL-1,2,3,4,6,7-HEXAHYDRONAPHTHALENE
Chemical family: HYDROCARBON

1.2. Recommended use of the chemical and restrictions on use

Recommended use: Chemical intermediate
For research and industrial use only

1.3. Details of the supplier of the safety data sheet

GELEST, INC.
11 East Steal Road
Morrisville, PA 19067
USA
T 215-547-1015 - F 215-547-2484 - (M-F): 8:00 AM - 5:30 PM EST
info@gelest.com - www.gelest.com

1.4. Emergency telephone number

Emergency number: CHEMTREC: 1-800-424-9300 (USA); +1 703-527-3887 (International)

SECTION 2: Hazard(s) identification

2.1. Classification of the substance or mixture

GHS-US classification
Skin corrosion/irritation Category 2 H315
Skin sensitization, Category 1 H317
Hazardous to the aquatic environment - Chronic Hazard Category 1 H410

Full text of H statements: see section 16

2.2. Label elements

GHS-US labeling
Hazard pictograms (GHS-US):

[![Hazard Pictogram](image)](image)

Signal word (GHS-US): Warning
Hazard statements (GHS-US):

- H315 - Causes skin irritation
- H317 - May cause an allergic skin reaction
- H410 - Very toxic to aquatic life with long lasting effects

Precautionary statements (GHS-US):

- P280 - Wear protective gloves/protective clothing/eye protection/face protection
- P261 - Avoid breathing vapors
- P264 - Wash hands thoroughly after handling
- P272 - Contaminated work clothing must not be allowed out of the workplace
- P273 - Avoid release to the environment
- P302+P352 - If on skin: Wash with plenty of soap and water
- P333+P313 - If skin irritation or rash occurs: Get medical advice/attention
- P321 - Specific treatment (see first aid instructions on this label)
- P362+P364 - Take off contaminated clothing and wash it before reuse
- P363 - Wash contaminated clothing before reuse
- P391 - Collect spillage
- P501 - Dispose of contents/container to licensed waste disposal facility.

2.3. Hazards not otherwise classified (HNOC)

No additional information available

2.4. Unknown acute toxicity (GHS US)

No data available
VALENCENE tech
Safety Data Sheet

SECTION 3: Composition/Information on ingredients

3.1. Substances

<table>
<thead>
<tr>
<th>Substance type</th>
<th>Name</th>
<th>CAS No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Multi-constituent</td>
<td>VALENCENE tech</td>
<td>4630-07-3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Name</th>
<th>Product identifier</th>
<th>%</th>
<th>GHS-US classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Valencene</td>
<td>(CAS No) 4630-07-3</td>
<td>75 - 85</td>
<td>Asp. Tox. 1, H304</td>
</tr>
<tr>
<td>Orange Extractives</td>
<td>(CAS No) 8028-48-6</td>
<td>15 - 25</td>
<td>Flam. Liq. 3, H226, Skin Irrit. 2, H315, Skin Sens. 1, H317, Asp. Tox. 1, H304, Aquatic Chronic 1, H410</td>
</tr>
</tbody>
</table>

Full text of hazard classes and H-statements: see section 16

3.2. Mixtures

Not applicable

4.1. Description of first aid measures

First-aid measures general: Remove contaminated clothing and shoes. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible). If possible show this sheet; if not available show packaging or label.

First-aid measures after inhalation: Remove victim to fresh air and keep at rest in a position comfortable for breathing. If you feel unwell, seek medical advice.

First-aid measures after skin contact: Wash with plenty of soap and water. Get medical advice/attention.

First-aid measures after eye contact: Immediately flush eyes thoroughly with water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical advice/attention.

First-aid measures after ingestion: Never give anything by mouth to an unconscious person. Get medical advice/attention.

4.2. Most important symptoms and effects, both acute and delayed

Symptoms/effects after inhalation: No information available.

Symptoms/effects after skin contact: Causes skin irritation. May cause an allergic skin reaction.

Symptoms/effects after eye contact: May cause eye irritation.

Symptoms/effects after ingestion: No information available.

4.3. Indication of any immediate medical attention and special treatment needed

No additional information available

SECTION 5: Firefighting measures

5.1. Extinguishing media


Unsuitable extinguishing media: None known.

5.2. Special hazards arising from the substance or mixture

Fire hazard: Irritating fumes and organic acid vapors may develop when material is exposed to elevated temperatures or open flame.

5.3. Advice for firefighters

Firefighting instructions: Exercise caution when fighting any chemical fire. Use water spray or fog for cooling exposed containers.

Protection during firefighting: Do not enter fire area without proper protective equipment, including respiratory protection. Avoid all eye and skin contact and do not breathe vapor and mist.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

Protective equipment: Wear protective equipment as described in Section 8.

Emergency procedures: Evacuate unnecessary personnel.

6.1.2. For emergency responders

Protective equipment: Do not attempt to take action without suitable protective equipment. Equip cleanup crew with proper protection. For further information refer to section 8: “Exposure controls/personal protection”.

6.2. Environmental precautions

Avoid release to the environment. Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters.
6.3. Methods and material for containment and cleaning up

For containment:
Contain any spills with dikes or absorbents to prevent migration and entry into sewers or streams.

Methods for cleaning up:
Collect spillage. Clean up any spills as soon as possible, using an absorbent material to collect it.

6.4. Reference to other sections

See Heading 8. Exposure controls and personal protection.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling:
Avoid all eye and skin contact and do not breathe vapor and mist. Provide good ventilation in process area to prevent accumulation of vapors.

Hygiene measures:
Wash contaminated clothing before reuse. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions:
Keep container tightly closed.

Incompatible materials:
Strong acids. Strong oxidizing agents.

Storage area:
Store in a well-ventilated place. Store away from heat.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

No additional information available

8.2. Exposure controls

Appropriate engineering controls:
Provide local exhaust or general room ventilation.

Personal protective equipment:
Avoid all unnecessary exposure. Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure.

Hand protection:
Neoprene or nitrile rubber gloves.

Eye protection:
Chemical goggles. Contact lenses should not be worn.

Skin and body protection:
Wear suitable protective clothing.

Respiratory protection:
Where exposure through inhalation may occur from use, respiratory protection equipment is recommended. NIOSH-certified organic vapor (black cartridge) respirator.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state:
Liquid

Appearance:
Liquid.

Molecular mass:
204.35 g/mol

Color:
Colorless to pale yellow.

Odor:
Citrus Aroma.

Odor threshold:
No data available

Refractive index:
1.49 - 1.51

pH:
No data available

Relative evaporation rate (butyl acetate=1):
No data available

Melting point:
No data available

Boiling point:
123 °C @ 11 mm Hg

Flash point:
> 93 °C

Auto-ignition temperature:
No data available

Decomposition temperature:
No data available

Flammability (solid, gas):
No data available

Vapor pressure:
< 2 mm Hg @ 25° C

Relative vapor density at 20 °C:
No data available

Relative density:
0.9 - 0.924

Solubility:
Insoluble in water.

Log Pow:
No data available

Log Kow:
No data available
### Section 10: Stability and reactivity

#### 10.1. Reactivity
No additional information available

#### 10.2. Chemical stability
Stable.

#### 10.3. Possibility of hazardous reactions
No additional information available

#### 10.4. Conditions to avoid
Heat. Open flame. Sparks.

#### 10.5. Incompatible materials
Strong acids. Strong oxidizing agents.

#### 10.6. Hazardous decomposition products
Organic acid vapors.

### Section 11: Toxicological information

#### 11.1. Information on toxicological effects

- **Acute toxicity**: Not classified
- **Skin corrosion/irritation**: Causes skin irritation.
- **Serious eye damage/irritation**: Not classified
- **Respiratory or skin sensitization**: May cause an allergic skin reaction.
- **Germ cell mutagenicity**: Not classified
- **Carcinogenicity**: Not classified

None of the components in this product at concentrations >0.1% are listed by IARC, NTP, OSHA or ACGIH as a carcinogen.

- **Reproductive toxicity**: Not classified
- **Specific target organ toxicity – single exposure**: Not classified
- **Specific target organ toxicity – repeated exposure**: Not classified
- **Aspiration hazard**: Not classified
- **Symptoms/effects after inhalation**: No information available.
- **Symptoms/effects after skin contact**: Causes skin irritation. May cause an allergic skin reaction.
- **Symptoms/effects after eye contact**: May cause eye irritation.
- **Symptoms/effects after ingestion**: No information available.

### Section 12: Ecological information

#### 12.1. Toxicity
Ecology - general: Very toxic to aquatic life with long lasting effects.

#### 12.2. Persistence and degradability
No additional information available

#### 12.3. Bioaccumulative potential
No additional information available

#### 12.4. Mobility in soil
No additional information available

#### 12.5. Other adverse effects
Other adverse effects: This substance may be hazardous to the environment.
**Effect on ozone layer**: No additional information available

**Effect on the global warming**: No known effects from this product.

**GWPmix comment**: No known effects from this product.

### SECTION 13: Disposal considerations

**13.1. Waste treatment methods**

**Sewage disposal recommendations**: Do not dispose of waste into sewer.

**Product/Packaging disposal recommendations**: Dispose in a safe manner in accordance with local/national regulations.

**Ecology - waste materials**: Avoid release to the environment.

### SECTION 14: Transport information

**14.1. UN number**

Not regulated for transport.

**14.2. UN proper shipping name**

**Dangerous for the environment**: Yes

**Marine pollutant**: Yes

**14.3. Additional information**

**Other information**: No supplementary information available.

**Transport by sea**

No additional information available

**Air transport**

No additional information available

### SECTION 15: Regulatory information

**15.1. US Federal regulations**

**Valencene (4630-07-3)**

Listed on the United States TSCA (Toxic Substances Control Act) inventory

**15.2. International regulations**

**CANADA**

**Valencene (4630-07-3)**

Listed on the Canadian DSL (Domestic Substances List)

**Orange Extractives (8028-48-6)**

Listed on the Canadian DSL (Domestic Substances List)

**EU-Regulations**

**Valencene (4630-07-3)**

Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

**Orange Extractives (8028-48-6)**

Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

**National regulations**

**Valencene (4630-07-3)**

Listed on the AICS (Australian Inventory of Chemical Substances)

Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)

Listed on NZIoC (New Zealand Inventory of Chemicals)

Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)
Orange Extractives (8028-48-6)
Listed on the AICS (Australian Inventory of Chemical Substances)
Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)
Listed on INSO (Mexican National Inventory of Chemical Substances)
Listed on NZIoC (New Zealand Inventory of Chemicals)
Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)
Listed on the Korean ECL (Existing Chemicals List)

SECTION 16: Other information

Full text of H-phrases:

<table>
<thead>
<tr>
<th>H226</th>
<th>Flammable liquid and vapor</th>
</tr>
</thead>
<tbody>
<tr>
<td>H304</td>
<td>May be fatal if swallowed and enters airways</td>
</tr>
<tr>
<td>H315</td>
<td>Causes skin irritation</td>
</tr>
<tr>
<td>H317</td>
<td>May cause an allergic skin reaction</td>
</tr>
<tr>
<td>H410</td>
<td>Very toxic to aquatic life with long lasting effects</td>
</tr>
</tbody>
</table>

Abbreviations and acronyms:
- Abbreviations: ND: Not Determined, No Data; NA: Not Applicable; LD: Lethal Dose; LC: Lethal Concentration; ATE: Acute Toxicity Estimates; H: hour; °: °C unless otherwise stated; mm: millimeters Hg, torr; PEL: permissible exposure level; TWA: time weighted average; TLV: threshold limit value; TG: Test Guideline; NIOSH: National Institute for Occupational Safety and Health; IARC: International Agency for Research on Cancer; NTP: National Toxicology Program; HMIS: Hazardous Material Information System; CAS No.: Chemical Abstract Service Registration Number; EC No.: European Commission Registration Number; EC Index No.: European Commission Index Number; OECD: The Organisation for Economic Co-operation and Development; GHS: The Globally Harmonized System of Classification and Labelling.

HMIS III Rating
Health: 2 Moderate Hazard - Temporary or minor injury may occur
Flammability: 2 Moderate Hazard - Materials which must be moderately heated or exposed to high ambient temperatures before ignition will occur. Includes liquids having a flash point at or above 100 F but below 200 F. (Classes II & IIIA)
Physical: 0 Minimal Hazard - Materials that are normally stable, even under fire conditions, and will NOT react with water, polymerize, decompose, condense, or self-react. Non-Explosives.

Prepared by safety and environmental affairs.

Date of issue: 06/05/2017 Version: 1.0

SDS US (GHS HazCom 2012) - Custom

According to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

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