

Section 1 – Product and Company Identification

- 1.1 GHS Product Identifier** : 2, Pentene, Cis & Trans
Product Number : 315205
Other means of identification : Pent-2-ene,
Beta-Amylene
Trans-beta-amylene
Trans-beta-n-amylene
(E)-2-pentene
2-Trans-pentene
Chemical Formula : C₅H₁₀
CAS Number :109-68-2
EC Number : 203-695-0
- 1.2 Recommended use** : Laboratory chemicals, Manufacture of substances
- 1.3 Supplier's detail** : Wiley Companies
1245 South 6th Street
Coshocton, Ohio 43812.
(740)622-0755.
- 1.4 Emergency Telephone number** : (800)633-8253.
International number : (801)629-0667.

Section 2 – Hazards Identification

- 2.1 GHS Classification of the substance or mixture**
GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)
Flammable liquids (Category 2)
Skin Irritation (Category 2)
Eye Irritation (Category 2A)
Specific target organ toxicity-single exposure (Category 3), Respiratory system
Aspiration hazard (Category 1)
- 2.2 GHS Label elements, including precautionary statements**
Pictogram



Signal word	Danger
Hazard statement(s)	
H225	Highly 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.
Precautionary statement(s)	
P210	Keep away from heat/sparks/open flames/hot surfaces. No smoking.
P233	Keep container tightly closed.
P240	Ground/bond container and receiving equipment.
P241	Use explosion-proof electrical/ventilating/lighting/equipment.
P242	Use only non-sparking tools.
P243	Take precautionary measures against static discharge.
P261	Avoid breathing dust/fume/gas/mist/vapours/spray.
P280	Wear protective gloves/ protective clothing/ eye protection/ face protection.
P312	Call a POISON CENTER or doctor if you feel unwell.
P331	Do NOT induce vomiting.
P301 + P310	IF SWALLOWED: Immediately call a POISON CENTER/ doctor/ physician.
P303 + P361 + P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
P304 + P340 + P312	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
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.
P370 + P378	In case of fire: Use dry chemical, alcohol foam and carbon dioxide for extinction.
P402 + P404	Store in a dry place. Store in a closed container.
P403 + P235	Store in a well-ventilated place. Keep cool.
P501	Dispose of contents/container in accordance with local, regional, national, and international regulations.

2.3 Hazards not otherwise classified or not covered by GHS

None.

Section 3 - Composition / Information on Ingredients**Substance/Mixture**

Chemical name : 2-Pentene, Cis & Trans

Synonyms : Pent-2-ene,
Beta-Myylene
Trans-beta-amylene
Trans-beta-n-amylene
(E)-2-pentene
2-Trans-pentene

Formula : C5H10

CAS number : 109-68-2

EC number : 203-695-0

Hazardous components

Component	Classification	Concentration
2-Pentene, Cis & Trans	Flammable liquid 2, Skin Irritation 2, Eye Irritation 2A, STOT, Resp. 3, Aspiration 1.	>97%

Section 4 - First Aid Measures**4.1 Description of necessary first aid measures****If inhaled**

Remove person to fresh air. Consult a physician if necessary.
If breathing is stopped, administer artificial respiration if trained to do so.

In case of skin contact

Flush with copious amounts of water for at least 15 minutes. Consult a physician if necessary.

In case of eye contact

Flush with copious amounts of water for at least 15 minutes. Consult a physician if necessary.

If ingested

Do NOT induce vomiting.
Rinse mouth out with water.
Never give liquid to an unconscious person.
Consult a physician if necessary.

4.2 Most important symptoms and effects, both acute and delayed

The most important known symptoms and effects are described in the labeling section 2.2.

4.3 Indication of immediate medical attention and special treatment needed, if necessary

No data available.

Section 5 – Fire Fighting Measure**5.1 Extinguishing media****Suitable extinguishing media**

Water spray,
Alcohol resistant foam,
Carbon dioxide,
Dry chemical.

Unsuitable extinguishing media

None known.

5.2 Specific hazards arising from the chemical

Carbon oxides.

5.3 Special protective equipment for fire fighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH for firefighters (approved or equivalent) and full protective gear.

5.4 Special precautions for fire fighters

Cool vessels and containers with sprayed water. Containers may explode when heated. Vapours can accumulate in low areas. Evacuate all personnel from the danger area. Remove ignition sources if safe to do so. Vapors can be ignited by pilot lights, other flames, smoking, sparks, heaters, electrical equipment, static discharge, or other ignition sources at locations distant from product release point.

Section 6 – Accidental Release Measures**6.1 Personal precautions, protective equipment and emergency procedures.**

Use personal protective equipment. Wear self-contained breathing apparatus when entering area unless atmosphere is proven to be safe. Avoid breathing vapours, mist or gas. Prevent further leakage or spillage if safe to do so. Ensure adequate ventilation, especially in confined areas. Remove all sources of ignition. Evacuate personnel to safe areas. Prevent

contamination of soil, drains and surface water. Take up residue with absorbent material and dispose of in accordance with all local, state and federal regulations.

6.2 Environmental precautions

Prevent further leakage or spillage if safe to do so. Prevent entry into waterways, sewers, basements or confined areas.

6.3 Methods and materials for containment and cleaning up

Utilize non-sparking tools

For large spills, dike far ahead of liquid spill for later disposal.

Cover liquid spill with sand, earth or other non-combustible absorbent material.

Pump up spilled material and transfer to properly labeled containers.

Take up residue with absorbent material and dispose of in accordance with all local, state and federal regulations.

Collect with an electrically protected vacuum cleaner

Section 7 – Handling and Storage

7.1 Precautions for safe handling

Wear all appropriate personal protective equipment.

Avoid contact with skin, eyes and clothing.

Avoid vapour inhalation.

Wash contaminated clothing before reuse.

Do not eat, drink or smoke when using this product.

Ensure good ventilation and local exhaust extraction in work place.

Keep away from source of ignition.

Use only non-sparking tools.

Use only explosion-proof equipment.

Take measures to prevent buildup of electrostatic charge.

Keep containers tightly closed when not in use.

7.2 Conditions for safe storage, including any incompatibilities

Store material in D.O.T. approved containers.

Follow all applicable local, state, and federal regulations.

Avoid direct sunlight.

Store in a cool, dry, well-ventilated place, in securely closed original container.

Store away from oxidizers

Section 8 – Exposure Controls / Personal Protection

8.1 Control parameters

Occupational exposure limits

Contains no substances with occupational exposure limit values.

8.2 Appropriate engineering controls

Engineering Controls:

Make emergency eyewash stations, safety/quick-drench showers, and washing facilities available in work area. Provide general or local exhaust ventilation systems to maintain airborne concentrations below OSHA PELs.

8.3 Individual protection measures

Administrative Controls:

Handle in accordance with good industrial hygiene and safety practice. When workplace conditions warrant respirator use, follow a respiratory protection program that meets OSHA 29 CFR 1910.134, ANSI Z88.2, or MSHA 30 CFR 72.710 (where applicable). Use an air-supplied or air-purifying cartridge if the action level is exceeded. Ensure that the respirator has the appropriate protection factor for the exposure level. If cartridge type respirators are used, the cartridge must be appropriate for the chemical exposure (e.g., an organic vapor cartridge). For emergencies or instances with unknown exposure levels, use a self-contained breathing apparatus (SCBA).

Wear face shield and safety glasses as approved under appropriate government standards (NIOSH or EN 166).

Wear chemically protective gloves.

Wear a chemically protective suit.

Wear flame retardant protective clothing.

Practice good personal hygiene after using this material, especially before eating, drinking, smoking, using the toilet, or applying cosmetics.

Laundry contaminated work clothes before reuse.

Section 9 – Physical and Chemical Properties

9.1 Information on basic physical and chemical properties

Appearance	: Liquid, colorless.
Odour	: No data available.
Odour Threshold	: No data available.
pH	: No data available.
Melting point/freezing point	: -140.2 °C (-220.4 °F)
Initial boiling point and boiling point range	: 37 °C (-49 °F)
Flash point	: -45°C (-49 °F)- closed cup
Evaporation rate	: No data available.
Flammability (solid, gas)	: No data available.
Upper/lower flammability	: Lower flammability limit: No data available.

Or explosive limits	Upper flammability limit: No data available.
Vapour pressure	: 555.6 hPa (416.7 mmHg) @ 25 °C
Vapour density	: 2.4 (Air=1)
Relative density	: 0.65 g/cm ³ @ 25 °C (77 °F)
Water solubility	: In water, 203 mg/L @ 25 °C
Partition coefficient: n-octanol/water	: No data available.
Auto-ignition Temperature	: No data available.
Decomposition Temperature	: No data available.
Viscosity	: No data available.
Molecular weight	: 70.13 g/mol

Section 10 – Stability and Reactivity

10.1 Reactivity

No data available.

10.2 Chemical stability

This material is stable at room temperature in closed containers under normal storage and handling conditions.

10.3 Possibility of hazardous reactions

Vapours may form explosive mixture in air.

10.4 Conditions to avoid

Heat, flames and other sources of ignition.
Take measures to prevent buildup of electrostatic charge.

10.5 Incompatible materials

Strong oxidizing agents.

10.6 Hazardous decomposition products

When heated to decomposition it emits acrid smoke and irritatin fumes.
Thermal oxidative decomposition of this material can produce carbon oxides.

Section 11 – Toxicological Information

11.1 Information on toxicological effects

Acute toxicity

No data available.

Skin corrosion/irritation

No data available.

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.

Specific target organ toxicity – single exposure

No data available.

Specific target organ toxicity – repeated exposure

No data available.

Aspiration hazard

The substance or mixture is known to cause human aspiration toxicity hazards.

Information on the likely routes of exposure

Inhalation and derma.

Symptoms related to the physical, chemical and toxicological characteristics.

No data available.

Delayed and immediate effects and also chronic effects from short and long-term exposure

No data available.

Numeric measures of toxicity

No data available.

Section 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 Other adverse effects

No data available.

Section 13 – Disposal Considerations**13.1 Disposal Methods**

Follow all applicable local, state, and federal regulations.

Dispose of contents/container in accordance with local/regional/national/international regulations.

Section 14 – Transport Information

	DOT	IMDG	IATA
UN number	UN3295	UN3295	UN3295
UN proper shipping name	Hydrocarbons, liquid, n.o.s. (2-Pentene, cis & trans)	HYDROCARBONS, LIQUID, N.O.S. (2-PENTENE, CIS & TRANS)	Hydrocarbons, liquid, n.o.s. (2-Pentene, cis & trans)
Transport hazard class	3	3	3
Packing group	II	II	II
Marine pollutant	No	No	-

Section 15 – Regulatory Information

SARA 302 Components

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

40 CFR Part 302.4

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.

40 CFR Part 313

SARA 311/312 Hazards

Fire hazard and acute health hazard.

Section 16 – Other Information

	HMIS		NFPA
Health - Chronic	*		
Health Hazard	2	Health Hazard	2
Flammability	4	Fire Hazard	4
Physical	0	Reactivity	0

Prepared By:

Wiley Companies
 The EH&S Department.

Disclaimer: The information contained herein is based upon data obtained from the manufacturer and/or recognized technical sources. While the information is believed to be accurate, Wiley Companies makes no representations as to its accuracy and sufficiency. Conditions of use are beyond Wiley Companies control and therefore users are responsible to verify this data is accurate under their own operating conditions to determine whether the product is suitable for their particular purposes. The user assumes all risks for their use, handling, and disposal of the product, or from the publication or use of, or reliance upon, information contained herein. This information relates only to the product designated herein, and does not relate to its use in combination with any other material or in any other process. Wiley Companies and its employees shall not be liable for any loss or damage arising out of the use thereof.