

**1,5-HEXADIENE**

Safety Data Sheet ENEH1190

Date of issue: 06/08/2015

Version: 1.0

**SECTION 1: Identification of the substance/mixture and of the company/undertaking****1.1. Product identifier**

Product form	: Substance
Physical state	: Liquid
Substance name	: 1,5-HEXADIENE
Product code	: ENEH1190
Formula	: C6H10
Synonyms	: BIALLYL; HEXA-1,5-DIENE
Chemical family	: HYDROCARBON

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

Use of the substance/mixture	: Chemical intermediate For research and industrial use only
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**1.3. Details of the supplier of the safety data sheet****GELEST, INC.**11 East Steel 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](mailto:info@gelest.com) - [www.gelest.com](http://www.gelest.com)**1.4. Emergency telephone number**

Emergency number	: CHEMTREC: 1-800-424-9300 (USA); +1 703-527-3887 (International)
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**SECTION 2: Hazards identification****2.1. Classification of the substance or mixture****Classification (GHS-US)**

Flam. Liq. 2 H225

Full text of H-phrases: see section 16

**2.2. Label elements****GHS-US labeling**

Hazard pictograms (GHS-US) :



GHS02

Signal word (GHS-US)	: Danger
Hazard statements (GHS-US)	: H225 - Highly flammable liquid and vapor
Precautionary statements (GHS-US)	: P280 - Wear protective gloves/protective clothing/eye protection/face protection P210 - Keep away from heat, open flames, sparks. - No smoking P233 - Keep container tightly closed P240 - Ground/bond container and receiving equipment P241 - Use explosion-proof electrical equipment P242 - Use only non-sparking tools P243 - Take precautionary measures against static discharge P303+P361+P353 - If on skin (or hair): take off immediately all contaminated clothing. rinse skin with water/shower P370+P378 - In case of fire: Use water spray or fog, foam, carbon dioxide, dry chemical to extinguish P403+P235 - Keep in a cool place P501 - Dispose of contents/container to licensed waste disposal facility.

**2.3. Other hazards**

No additional information available

**2.4. Unknown acute toxicity (GHS US)**

No data available

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### SECTION 3: Composition/information on ingredients

#### 3.1. Substance

Substance type	: Mono-constituent
Name	: 1,5-HEXADIENE
CAS No	: 592-42-7
EC no	: 209-754-7

Name	Product identifier	%	Classification (GHS-US)
1,5-Hexadiene	(CAS No) 592-42-7	> 97	Flam. Liq. 2, H225
Allyl alcohol	(CAS No) 107-18-6	< 0.1	Flam. Liq. 2, H225 Acute Tox. 3 (Oral), H301 Acute Tox. 2 (Dermal), H310 Acute Tox. 1 (Inhalation:vapour), H330 Skin Irrit. 2, H315 Eye Irrit. 2A, H319 STOT SE 3, H335 Aquatic Acute 1, H400

#### 3.2. Mixture

Not applicable

### SECTION 4: First aid measures

#### 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.
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/injuries after inhalation	: No information available.
Symptoms/injuries after skin contact	: May cause skin irritation.
Symptoms/injuries after eye contact	: May cause eye irritation.
Symptoms/injuries after ingestion	: May be harmful if swallowed.

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

No additional information available

### SECTION 5: Firefighting measures

#### 5.1. Extinguishing media

Suitable extinguishing media : Water spray. Water fog. Foam. Carbon dioxide. Dry chemical.

#### 5.2. Special hazards arising from the substance or mixture

Fire hazard	: Highly flammable liquid and vapor. Irritating fumes and organic acid vapors may develop when material is exposed to elevated temperatures or open flame.
Explosion hazard	: May form flammable/explosive vapor-air mixture.

#### 5.3. Advice for firefighters

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

General measures : Eliminate every possible source of ignition. Use special care to avoid static electric charges.

##### 6.1.1. For non-emergency personnel

Emergency procedures : Evacuate unnecessary personnel.

##### 6.1.2. For emergency responders

Protective equipment : Equip cleanup crew with proper protection.

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### 6.2. Environmental precautions

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

Methods for cleaning up : Clean up any spills as soon as possible, using an absorbent material to collect it. Sweep or shovel spills into appropriate container for disposal. Use only non-sparking tools.

### 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

Additional hazards when processed : Handle empty containers with care because residual vapors are flammable.

Precautions for safe handling : Avoid all eye and skin contact and do not breathe vapor and mist. Take precautionary measures against static discharge. Provide good ventilation in process area to prevent accumulation of vapors. Use only non-sparking tools.

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

### 7.2. Conditions for safe storage, including any incompatibilities

Technical measures : Ground/bond container and receiving equipment. Proper grounding procedures to avoid static electricity should be followed.

Storage conditions : Keep container tightly closed.

Incompatible materials : Oxidizing agent.

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

### 7.3. Specific end use(s)

No additional information available

## SECTION 8: Exposure controls/personal protection

### 8.1. Control parameters

Allyl alcohol (107-18-6)		
USA ACGIH	ACGIH TWA (ppm)	0.5 ppm
USA NIOSH	NIOSH REL (TWA) (mg/m <sup>3</sup> )	5 mg/m <sup>3</sup>
USA NIOSH	NIOSH REL (TWA) (ppm)	2 ppm
USA NIOSH	NIOSH REL (STEL) (mg/m <sup>3</sup> )	10 mg/m <sup>3</sup>
USA NIOSH	NIOSH REL (STEL) (ppm)	4 ppm
USA OSHA	OSHA PEL (TWA) (mg/m <sup>3</sup> )	5 mg/m <sup>3</sup>
USA OSHA	OSHA PEL (TWA) (ppm)	2 ppm
USA IDLH	US IDLH (ppm)	20 ppm

### 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 : Clear liquid.

Molecular mass : 82.14 g/mol

Color : No data available

Odor : strong.

Odor threshold : No data available

Refractive index : 1.404

pH : No data available

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Relative evaporation rate (butyl acetate=1)	: > 1
Melting point	: No data available
Freezing point	: -141 °C
Boiling point	: 60 °C
Flash point	: -27 °C
Auto-ignition temperature	: 240 °C
Decomposition temperature	: No data available
Flammability (solid, gas)	: Highly flammable liquid and vapor
Vapor pressure	: ~ 200 mm Hg @ 25°C
Relative vapor density at 20 °C	: 2.9
Relative density	: 0.692
VOC content	: 100 %
Solubility	: Insoluble in water.
Log Pow	: No data available
Log Kow	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available
Explosive properties	: No data available
Oxidizing properties	: No data available
Explosion limits	: 2 - 6 vol % (lower; upper)

### 9.2. Other information

No additional information 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

Oxidizing agent.

### 10.6. Hazardous decomposition products

Organic acid vapors.

## SECTION 11: Toxicological information

### 11.1. Information on toxicological effects

Acute toxicity : Not classified

Allyl alcohol (107-18-6)	
LD50 oral rat	64 mg/kg
LD50 dermal rabbit	89 mg/kg
LC50 inhalation rat (mg/l)	0.391 mg/l/4h
ATE US (oral)	64.000 mg/kg body weight
ATE US (dermal)	89.000 mg/kg body weight
ATE US (vapors)	0.391 mg/l/4h
ATE US (dust, mist)	0.391 mg/l/4h

1,5-Hexadiene (592-42-7)	
LC50 inhalation rat (mg/l)	> 11 lb/h (Exposure time: 4 h)

Skin corrosion/irritation	: Not classified
Serious eye damage/irritation	: Not classified
Respiratory or skin sensitization	: Not classified
Germ cell mutagenicity	: Not classified
Carcinogenicity	: Not classified
Reproductive toxicity	: Not classified

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Specific target organ toxicity (single exposure)	: Not classified
Specific target organ toxicity (repeated exposure)	: Not classified
Aspiration hazard	: Not classified
Symptoms/injuries after inhalation	: No information available.
Symptoms/injuries after skin contact	: May cause skin irritation.
Symptoms/injuries after eye contact	: May cause eye irritation.
Symptoms/injuries after ingestion	: May be harmful if swallowed.

### SECTION 12: Ecological information

#### 12.1. Toxicity

##### Allyl alcohol (107-18-6)

LC50 fish 1	0.28 - 0.37 mg/l (Exposure time: 96 h - Species: Pimephales promelas [flow-through])
LC50 fish 2	0.32 mg/l (Exposure time: 96 h - Species: Pimephales promelas [static])

#### 12.2. Persistence and degradability

No additional information available

#### 12.3. Bioaccumulative potential

##### Allyl alcohol (107-18-6)

BCF fish 1	(no bioaccumulation expected)
Log Pow	0.17

#### 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 ecological damage caused by this product.

### SECTION 13: Disposal considerations

#### 13.1. Waste treatment methods

Waste disposal recommendations	: Incinerate. Dispose in a safe manner in accordance with local/national regulations. Dispose of contents/container to licensed waste disposal facility.
Additional information	: Handle empty containers with care because residual vapors are flammable.
Ecology - waste materials	: Avoid release to the environment.

### SECTION 14: Transport information

#### 14.1. UN number

UN-No.(DOT)	: 1993
DOT NA no.	UN1993

#### 14.2. UN proper shipping name

Proper Shipping Name (DOT)	: Flammable liquids, n.o.s. (1,5-HEXADIENE)
Department of Transportation (DOT) Hazard Classes	: 3 - Class 3 - Flammable and combustible liquid 49 CFR 173.120
Hazard labels (DOT)	: 3 - Flammable liquid



DOT Symbols	: G - Identifies PSN requiring a technical name
Packing group (DOT)	: II - Medium Danger
DOT Packaging Exceptions (49 CFR 173.xxx)	: 150
DOT Packaging Non Bulk (49 CFR 173.xxx)	: 202
DOT Packaging Bulk (49 CFR 173.xxx)	: 242

#### 14.3. Additional information

Emergency Response Guide (ERG) Number	: 3L
Other information	: No supplementary information available.

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### Transport by sea

DOT Vessel Stowage Location : B - (i) The material may be stowed "on deck" or "under deck" on a cargo vessel and on a passenger vessel carrying a number of passengers limited to not more than the larger of 25 passengers, or one passenger per each 3 m of overall vessel length; and (ii) "On deck only" on passenger vessels in which the number of passengers specified in paragraph (k)(2)(i) of this section is exceeded.

### Air transport

DOT Quantity Limitations Passenger aircraft/rail : 5 L  
(49 CFR 173.27)

DOT Quantity Limitations Cargo aircraft only (49 : 60 L  
CFR 175.75)

## SECTION 15: Regulatory information

### 15.1. US Federal regulations

#### Allyl alcohol (107-18-6)

Listed on the United States TSCA (Toxic Substances Control Act) inventory  
Listed on the United States SARA Section 302  
Listed on United States SARA Section 313

SARA Section 302 Threshold Planning Quantity (TPQ)	1000
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SARA Section 313 - Emission Reporting	1.0 %
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#### 1,5-Hexadiene (592-42-7)

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

### 15.2. International regulations

#### Allyl alcohol (107-18-6)

Listed on the AICS (Australian Inventory of Chemical Substances)  
Listed on the Canadian DSL (Domestic Substances List)  
Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)  
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)  
Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory  
Listed on the Korean ECL (Existing Chemicals List)  
Listed on NZIoC (New Zealand Inventory of Chemicals)  
Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)  
Japanese Poisonous and Deleterious Substances Control Law  
Japanese Pollutant Release and Transfer Register Law (PRTR Law)  
Listed on the Canadian IDL (Ingredient Disclosure List)  
Listed on INSQ (Mexican national Inventory of Chemical Substances)

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Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)  
Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory  
Listed on the Japanese ISHL (Industrial Safety and Health Law)  
Listed on the Korean ECL (Existing Chemicals List)  
Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)  
Listed on INSQ (Mexican national Inventory of Chemical Substances)

### 15.3. US State regulations

#### 1,5-HEXADIENE(592-42-7)

U.S. - California - Proposition 65 - Carcinogens List	No
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U.S. - California - Proposition 65 - Developmental Toxicity	No
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U.S. - California - Proposition 65 - Reproductive Toxicity - Female	No
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U.S. - California - Proposition 65 - Reproductive Toxicity - Male	No
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#### Allyl alcohol (107-18-6)

U.S. - California - Proposition 65 - Carcinogens List	U.S. - California - Proposition 65 - Developmental Toxicity	U.S. - California - Proposition 65 - Reproductive Toxicity - Female	U.S. - California - Proposition 65 - Reproductive Toxicity - Male	No significance risk level (NSRL)
No	No	No	No	

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1,5-Hexadiene (592-42-7)				
U.S. - California - Proposition 65 - Carcinogens List	U.S. - California - Proposition 65 - Developmental Toxicity	U.S. - California - Proposition 65 - Reproductive Toxicity - Female	U.S. - California - Proposition 65 - Reproductive Toxicity - Male	No significance risk level (NSRL)
No	No	No	No	

### 1,5-Hexadiene (592-42-7)

## SECTION 16: Other information

### 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.

### Full text of H-phrases::

Acute Tox. 1 (Inhalation:vapour)	Acute toxicity (inhalation:vapor) Category 1
Acute Tox. 2 (Dermal)	Acute toxicity (dermal) Category 2
Acute Tox. 3 (Oral)	Acute toxicity (oral) Category 3
Aquatic Acute 1	Hazardous to the aquatic environment - Acute Hazard Category 1
Eye Irrit. 2A	Serious eye damage/eye irritation Category 2A
Flam. Liq. 2	Flammable liquids Category 2
Skin Irrit. 2	Skin corrosion/irritation Category 2
STOT SE 3	Specific target organ toxicity (single exposure) Category 3
H225	Highly flammable liquid and vapor
H301	Toxic if swallowed
H310	Fatal in contact with skin
H315	Causes skin irritation
H319	Causes serious eye irritation
H330	Fatal if inhaled
H335	May cause respiratory irritation
H400	Very toxic to aquatic life

### HMIS III Rating

Health : 1 Slight Hazard - Irritation or minor reversible injury possible  
Flammability : 3 Serious Hazard  
Physical : 0 Minimal Hazard

Prepared by safety and environmental affairs.

Date of issue: 06/08/2015 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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