

# Safety Data Sheet

acc. to OSHA HCS

Printing date 01/22/2014

Reviewed on 09/25/2012

## 1 Identification

**Product identifier**
**Product name:** 1-Hexene
**Stock number:** B20271, L14246

**CAS Number:**

592-41-6

**EC number:**

209-753-1

**Relevant identified uses of the substance or mixture and uses advised against.**
**Identified use:** SU24 Scientific research and development

**Details of the supplier of the safety data sheet**
**Manufacturer/Supplier:**

Alfa Aesar, A Johnson Matthey Company

Johnson Matthey Catalog Company, Inc.

30 Bond Street

Ward Hill, MA 01835-8099

Tel: 800-343-0660

Fax: 800-322-4757

Email: tech@alfa.com

www.alfa.com

**Information Department:** Health, Safety and Environmental Department

**Emergency telephone number:**

During normal hours the Health, Safety and Environmental Department at (800) 343-0660. After normal hours call Carechem 24 at (866) 928-0789.

## 2 Hazard(s) identification

**Classification of the substance or mixture**
**Classification according to Regulation (EC) No 1272/2008**


GHS02 Flame

Flam. Liq. 2 H225 Highly flammable liquid and vapor.



GHS08 Health hazard

Asp. Tox. 1 H304 May be fatal if swallowed and enters airways.

**Classification according to Directive 67/548/EEC or Directive 1999/45/EC**


Xn; Harmful

R65: Harmful; may cause lung damage if swallowed.



F; Highly flammable

R11: Highly flammable.



N; Dangerous for the environment

R51/53: Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

**Information concerning particular hazards for human and environment:** Not applicable

**Hazards not otherwise classified** No information known.

**Label elements**
**Labelling according to Regulation (EC) No 1272/2008**

The substance is classified and labeled according to the CLP regulation.

**Hazard pictograms**


GHS02



GHS08

**Signal word** Danger

**Hazard statements**

H225 Highly flammable liquid and vapor.

H304 May be fatal if swallowed and enters airways.

**Precautionary statements**

P210 Keep away from heat/sparks/open flames/hot surfaces. No smoking.

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P241 Use explosion-proof electrical/ventilating/lighting/equipment.  
 P301+P310 IF SWALLOWED: Immediately call a POISON CENTER/ doctor/...  
 P303+P361+P353 If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.  
 P405 Store locked up.  
 P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

**WHMIS classification**  
 B2 - Flammable liquid



**Classification system**  
**HMIS ratings (scale 0-4)**  
**(Hazardous Materials Identification System)**

HEALTH	1	Health (acute effects) = 1
FIRE	3	Flammability = 3
REACTIVITY	1	Physical Hazard = 1

**Other hazards**

**Results of PBT and vPvB assessment**

**PBT:** Not applicable.

**vPvB:** Not applicable.

**3 Composition/information on ingredients**

**Chemical characterization: Substances**

**CAS# Description:**

592-41-6 1-Hexene

**Identification number(s):**

**EC number:** 209-753-1

**4 First-aid measures**

**Description of first aid measures**

**After inhalation**

Supply fresh air. If required, provide artificial respiration. Keep patient warm. Seek immediate medical advice.

**After skin contact**

Immediately wash with water and soap and rinse thoroughly. Seek immediate medical advice.

**After eye contact**

Rinse opened eye for several minutes under running water. Then consult a doctor.

**After swallowing** Seek medical treatment.

**Information for doctor**

**Most important symptoms and effects, both acute and delayed**

No further relevant information available.

**Indication of any immediate medical attention and special treatment needed**

No further relevant information available.

**5 Fire-fighting measures**

**Extinguishing media**

**Suitable extinguishing agents**

Carbon dioxide, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.

**Special hazards arising from the substance or mixture**

If this product is involved in a fire, the following can be released:

Carbon monoxide and carbon dioxide

**Advice for firefighters**

**Protective equipment:**

Wear self-contained respirator.

Wear fully protective impervious suit.

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**6 Accidental release measures****Personal precautions, protective equipment and emergency procedures**

Wear protective equipment. Keep unprotected persons away.

Ensure adequate ventilation

Keep away from ignition sources

**Environmental precautions:**

Do not allow material to be released to the environment without proper governmental permits.

Do not allow product to reach sewage system or any water course.

Do not allow to penetrate the ground/soil.

**Methods and material for containment and cleaning up:**

Keep away from ignition sources.

Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).

Dispose contaminated material as waste according to item 13.

Ensure adequate ventilation.

**Prevention of secondary hazards:** Keep away from ignition sources.**Reference to other sections**

See Section 7 for information on safe handling

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

**7 Handling and storage****Handling****Precautions for safe handling**

Keep container tightly sealed.

Store in cool, dry place in tightly closed containers.

Ensure good ventilation at the workplace.

**Information about protection against explosions and fires:**

Protect against electrostatic charges.

Fumes can combine with air to form an explosive mixture.

**Conditions for safe storage, including any incompatibilities****Storage****Requirements to be met by storerooms and receptacles:** Store in a cool location.**Information about storage in one common storage facility:** Store away from oxidizing agents.**Further information about storage conditions:**

Keep container tightly sealed.

Store in cool, dry conditions in well sealed containers.

**Specific end use(s)** No further relevant information available.**8 Exposure controls/personal protection****Additional information about design of technical systems:**

Properly operating chemical fume hood designed for hazardous chemicals and having an average face velocity of at least 100 feet per minute.

**Control parameters****Components with limit values that require monitoring at the workplace:****592-41-6 1-Hexene (100.0%)**TLV (USA) Long-term value: 172 mg/m<sup>3</sup>, 50 ppm

EL (Canada) Long-term value: 50 ppm

R

EV (Canada) Long-term value: 30 ppm

**Additional information:** No data**Exposure controls****Personal protective equipment****General protective and hygienic measures**

The usual precautionary measures for handling chemicals should be followed.

Keep away from foodstuffs, beverages and feed.

Remove all soiled and contaminated clothing immediately.

Wash hands before breaks and at the end of work.

Do not inhale dust / smoke / mist.

Maintain an ergonomically appropriate working environment.

**Breathing equipment:** Use suitable respirator when high concentrations are present.**Protection of hands:**

Impervious gloves

Check protective gloves prior to each use for their proper condition.

The selection of suitable gloves not only depends on the material, but also on quality.

Quality will vary from manufacturer to manufacturer.

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**Eye protection:** Safety glasses  
**Body protection:** Protective work clothing.

**9 Physical and chemical properties****Information on basic physical and chemical properties****General Information****Appearance:**

**Form:** Liquid  
**Color:** Colorless  
**Odor:** Mild  
**Odor threshold:** Not determined.

**pH-value:** Not determined.

**Change in condition**

**Melting point/Melting range:** -140 °C (-220 °F)  
**Boiling point/Boiling range:** 62-64 °C (144-147 °F)  
**Sublimation temperature / start:** Not determined

**Flash point:** -25 °C (-13 °F)  
**Flammability (solid, gaseous)** Not determined.  
**Ignition temperature:** 265 °C (509 °F)  
**Decomposition temperature:** Not determined  
**Auto igniting:** Not determined.

**Danger of explosion:** Product is not explosive. However, formation of explosive air/vapor mixtures is possible.

**Explosion limits:**

**Lower:** 1.2 Vol %  
**Upper:** 6.9 Vol %  
**Vapor pressure at 25 °C (77 °F):** 186 hPa (140 mm Hg)  
**Density at 20 °C (68 °F):** 0.673 g/cm<sup>3</sup> (5.616 lbs/gal)  
**Relative density** Not determined.  
**Vapor density** Not determined.  
**Evaporation rate** Not determined.  
**Solubility in / Miscibility with**  
**Water at 20 °C (68 °F):** 0.05 g/l  
**Partition coefficient (n-octanol/water):** Not determined.  
**Viscosity:**  
**dynamic:** Not determined.  
**kinematic:** Not determined.  
**Other information** No further relevant information available.

**10 Stability and reactivity**

**Reactivity** No information known.

**Chemical stability** Stable under recommended storage conditions.

**Thermal decomposition / conditions to be avoided:**

Decomposition will not occur if used and stored according to specifications.

**Possibility of hazardous reactions** Reacts with strong oxidizing agents

**Incompatible materials:** Oxidizing agents

**Hazardous decomposition products:** Carbon monoxide and carbon dioxide

**11 Toxicological information****Information on toxicological effects****Acute toxicity:**

The Registry of Toxic Effects of Chemical Substances (RTECS) contains acute toxicity data for components in this product.

**LD/LC50 values that are relevant for classification:** No data

**Skin irritation or corrosion:** May cause irritation

**Eye irritation or corrosion:** May cause irritation

**Sensitization:** No sensitizing effects known.

**Germ cell mutagenicity:** No effects known.

**Carcinogenicity:**

No classification data on carcinogenic properties of this material is available from the EPA, IARC, NTP, OSHA or ACGIH.

**Reproductive toxicity:** No effects known.

**Specific target organ system toxicity - repeated exposure:** No effects known.

**Specific target organ system toxicity - single exposure:** No effects known.

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**Aspiration hazard:** May be fatal if swallowed and enters airways.**Additional toxicological information:**

To the best of our knowledge the acute and chronic toxicity of this substance is not fully known.

**12 Ecological information****Toxicity****Aquatic toxicity:** No further relevant information available.**Persistence and degradability** No further relevant information available.**Behavior in environmental systems:****Bioaccumulative potential** No further relevant information available.**Mobility in soil** No further relevant information available.**Additional ecological information:****General notes:**

Do not allow product to reach ground water, water course or sewage system.

Do not allow material to be released to the environment without proper governmental permits.

Danger to drinking water if even small quantities leak into the ground.

Also poisonous for fish and plankton in water bodies.

Toxic to aquatic life.

May cause long lasting harmful effects to aquatic life.

Avoid transfer into the environment.

**Results of PBT and vPvB assessment****PBT:** Not applicable.**vPvB:** Not applicable.**Other adverse effects** No further relevant information available.**13 Disposal considerations****Waste treatment methods****Recommendation** Consult state, local or national regulations to ensure proper disposal.**Uncleaned packagings:****Recommendation:** Disposal must be made according to official regulations.**14 Transport information****UN-Number**

DOT, ADR, IMDG, IATA

UN2370

**UN proper shipping name**

DOT

RQ 1-Hexene

ADR

2370 1-Hexene

IMDG, IATA

1-HEXENE

**Transport hazard class(es)**

DOT

**Class**

3 Flammable liquids.

**Label**

3

**ADR****Class**

3 (F1) Flammable liquids

**Label**

3

**IMDG, IATA****Class**

3 Flammable liquids.

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Label	3
Packing group DOT, ADR, IMDG, IATA	II
Environmental hazards:	Environmentally hazardous substance, liquid
Special precautions for user Danger code (Kemler):	Warning: Flammable liquids 33
Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	Not applicable.
Transport/Additional information:	
DOT Hazardous substance:	5000 lbs, 2270 kg
Marine Pollutant (DOT):	No
UN "Model Regulation":	UN2370, 1-Hexene, 3, II

**15 Regulatory information**

**Safety, health and environmental regulations/legislation specific for the substance or mixture**

**National regulations**

All components of this product are listed in the U.S. Environmental Protection Agency Toxic Substances Control Act Chemical substance Inventory.

All components of this product are listed on the Canadian Domestic Substances List (DSL).

SARA Section 313 (specific toxic chemical listings) Substance is not listed.

**California Proposition 65**

Prop 65 - Chemicals known to cause cancer Substance is not listed.

Prop 65 - Developmental toxicity Substance is not listed.

Prop 65 - Developmental toxicity, female Substance is not listed.

Prop 65 - Developmental toxicity, male Substance is not listed.

**Information about limitation of use:** For use only by technically qualified individuals.

**Other regulations, limitations and prohibitive regulations**

**Substances of very high concern (SVHC) according to REACH, Article 57**

Substance is not listed.

**REACH - Pre-registered substances** Substance is listed.

**Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

**16 Other information**

Employers should use this information only as a supplement to other information gathered by them, and should make independent judgement of suitability of this information to ensure proper use and protect the health and safety of employees. This information is furnished without warranty, and any use of the product not in conformance with this Material Safety Data Sheet, or in combination with any other product or process, is the responsibility of the user.

**Department issuing SDS:** Health, Safety and Environmental Department.

**Abbreviations and acronyms:**

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

IATA: International Air Transport Association

GHS: Globally Harmonized System of Classification and Labelling of Chemicals

EINECS: European Inventory of Existing Commercial Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

HMIS: Hazardous Materials Identification System (USA)

WHMIS: Workplace Hazardous Materials Information System (Canada)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

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