

SAFETY DATA SHEET

Creation Date 03-May-2010

Revision Date 26-January-2018

Revision Number 3

1. Identification

Product Name 1-Hexene

Cat No. : AC120750000; AC120750010; AC120751000

CAS-No 592-41-6
Synonyms Butyl ethylene

Recommended Use Laboratory chemicals.
Uses advised against Not for food, drug, pesticide or biocidal product use

Details of the supplier of the safety data sheet

Company

Importer/Distributor

Fisher Scientific
112 Colonnade Road,
Ottawa, ON K2E 7L6,
Canada
Tel: 1-800-234-7437

Acros Organics
One Reagent Lane
Fair Lawn, NJ 07410

Manufacturer

Fisher Scientific
One Reagent Lane
Fair Lawn, NJ 07410
Tel: (201) 796-7100

Emergency Telephone Number

For information **US** call: 001-800-ACROS-01 / **Europe** call: +32 14 57 52 11

Emergency Number **US**:001-201-796-7100 / **Europe**: +32 14 57 52 99

CHEMTREC Tel. No.**US**:001-800-424-9300 / **Europe**:001-703-527-3887

2. Hazard(s) identification

Classification

WHMIS 2015 Classification

Classified as hazardous under the Hazardous Products Regulations (SOR/2015-17)

Flammable liquids	Category 2
Specific target organ toxicity (single exposure)	Category 3
Target Organs - Central nervous system (CNS).	
Aspiration Toxicity	Category 1
Physical Hazards Not Otherwise Classified	Category 1
Hazardous polymerization may occur	
Health Hazards Not Otherwise Classified	Category 1
Prolonged or repeated contact may dry skin and cause irritation or cracking	

Label Elements

Signal Word

Danger

Hazard Statements

Highly flammable liquid and vapor

May be fatal if swallowed and enters airways

May cause drowsiness and dizziness
 Hazardous polymerization may occur
 Prolonged or repeated contact may dry skin and cause irritation or cracking



Precautionary Statements

Prevention

Keep cool. Protect from sunlight
 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking
 Keep container tightly closed
 Ground/bond container and receiving equipment
 Use explosion-proof electrical/ventilating/lighting/equipment
 Use only non-sparking tools
 Take precautionary measures against static discharges
 Avoid breathing dust/fume/gas/mist/vapors/spray
 Use only outdoors or in a well-ventilated area
 Wear protective gloves/protective clothing/eye protection/face protection

Response

IF SWALLOWED: Immediately call a POISON CENTER/doctor
 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/ shower
 IF INHALED: Remove person to fresh air and keep comfortable for breathing
 Call a POISON CENTER/ doctor if you feel unwell
 Do NOT induce vomiting
 In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish

Storage

Store locked up
 Store in a well-ventilated place. Keep container tightly closed

Disposal

Dispose of contents/container to an approved waste disposal plant

Other Hazards

Toxic to aquatic life with long lasting effects

3. Composition/Information on Ingredients

Component	CAS-No	Weight %
1-Hexene	592-41-6	>95

4. First-aid measures

Eye Contact

Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Get medical attention.

Skin Contact

Wash off immediately with plenty of water for at least 15 minutes. Get medical attention if symptoms occur.

Inhalation

Move to fresh air. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Obtain medical attention. If not breathing,

give artificial respiration. Risk of serious damage to the lungs.

Ingestion Aspiration hazard. Do not induce vomiting. Call a physician or Poison Control Center immediately. If vomiting occurs naturally, have victim lean forward.

Most important symptoms/effects Breathing difficulties. Inhalation of high vapor concentrations may cause symptoms like headache, dizziness, tiredness, nausea and vomiting

Notes to Physician Treat symptomatically

5. Fire-fighting measures

Suitable Extinguishing Media CO₂, dry chemical, dry sand, alcohol-resistant foam. Cool closed containers exposed to fire with water spray.

Unsuitable Extinguishing Media Water may be ineffective

Flash Point -26 °C / -14.8 °F

Method - Closed cup

Autoignition Temperature 265 °C / 509 °F

Explosion Limits

Upper 6.90 vol %

Lower 1.20 vol %

Sensitivity to Mechanical Impact No information available

Sensitivity to Static Discharge No information available

Specific Hazards Arising from the Chemical

Flammable. Risk of ignition. Vapors may form explosive mixtures with air. Vapors may travel to source of ignition and flash back. Containers may explode when heated. Thermal decomposition can lead to release of irritating gases and vapors. Keep product and empty container away from heat and sources of ignition.

Hazardous Combustion Products

Carbon monoxide (CO) Carbon dioxide (CO₂)

Protective Equipment and Precautions for Firefighters

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

NFPA

Health
1

Flammability
3

Instability
0

Physical hazards
N/A

6. Accidental release measures

Personal Precautions Use personal protective equipment. Remove all sources of ignition. Take precautionary measures against static discharges. Ensure adequate ventilation. Avoid contact with skin, eyes and clothing.

Environmental Precautions Do not flush into surface water or sanitary sewer system.

Methods for Containment and Clean Up Remove all sources of ignition. Soak up with inert absorbent material. Keep in suitable, closed containers for disposal. Use spark-proof tools and explosion-proof equipment.

7. Handling and storage

Handling Wear personal protective equipment. Ensure adequate ventilation. Use spark-proof tools and explosion-proof equipment. Keep away from open flames, hot surfaces and sources of ignition. Take precautionary measures against static discharges. Avoid contact with skin, eyes and clothing. Avoid ingestion and inhalation. Use only non-sparking tools. To avoid ignition of vapors by static electricity discharge, all metal parts of the equipment must be grounded.

Storage

Keep containers tightly closed in a dry, cool and well-ventilated place. Keep away from heat and sources of ignition. Keep under nitrogen. Flammables area.

8. Exposure controls / personal protection

Exposure Guidelines

Component	Alberta	British Columbia	Ontario TWAEV	Quebec	ACGIH TLV	OSHA PEL	NIOSH IDLH
1-Hexene	TWA: 50 ppm TWA: 172 mg/m ³	TWA: 50 ppm	TWA: 50 ppm		TWA: 50 ppm		

Legend

ACGIH - American Conference of Governmental Industrial Hygienists

Engineering Measures

Ensure adequate ventilation, especially in confined areas. Use explosion-proof electrical/ventilating/lighting/equipment. Ensure that eyewash stations and safety showers are close to the workstation location.

Wherever possible, engineering control measures such as the isolation or enclosure of the process, the introduction of process or equipment changes to minimise release or contact, and the use of properly designed ventilation systems, should be adopted to control hazardous materials at source

Personal protective equipment**Eye Protection**

Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.

Hand Protection

Wear appropriate protective gloves and clothing to prevent skin exposure.

Glove material	Breakthrough time	Glove thickness	Glove comments
Nitrile rubber	> 480 minutes	0.38 mm	As tested under EN374-3
Viton (R)	> 480 minutes	0.35 mm	Determination of Resistance to Permeation by Chemicals

Inspect gloves before use. observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. (Refer to manufacturer/supplier for information) gloves are suitable for the task: Chemical compatibility, Dexterity, Operational conditions, User susceptibility, e.g. sensitisation effects, also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion. gloves with care avoiding skin contamination.

Respiratory Protection

When workers are facing concentrations above the exposure limit they must use appropriate certified respirators. Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

To protect the wearer, respiratory protective equipment must be the correct fit and be used and maintained properly

Recommended Filter type: low boiling organic solvent Type AX Brown conforming to EN371

When RPE is used a face piece Fit Test should be conducted

Environmental exposure controls

Prevent product from entering drains. Do not allow material to contaminate ground water system.

Hygiene Measures

Handle in accordance with good industrial hygiene and safety practice. Keep away from food, drink and animal feeding stuffs. Do not eat, drink or smoke when using this product. Remove and wash contaminated clothing before re-use. Wash hands before breaks and at the end of workday.

9. Physical and chemical properties

Physical State
Appearance

Liquid
Colorless

Odor	Characteristic
Odor Threshold	No information available
pH	No information available
Melting Point/Range	-140 °C / -220 °F
Boiling Point/Range	62 - 65 °C / 143.6 - 149 °F @ 760 mmHg
Flash Point	-26 °C / -14.8 °F
Method -	Closed cup
Evaporation Rate	No information available
Flammability (solid,gas)	Not applicable
Flammability or explosive limits	
Upper	6.90 vol %
Lower	1.20 vol %
Vapor Pressure	186 mmHg @ 25 °C
Vapor Density	3.0
Specific Gravity	0.678
Solubility	Insoluble in water
Partition coefficient; n-octanol/water	No data available
Autoignition Temperature	265 °C / 509 °F
Decomposition Temperature	No information available
Viscosity	0.34 cSt at 40 °C
Molecular Formula	C6 H12
Molecular Weight	84.15

10. Stability and reactivity

Reactive Hazard	None known, based on information available
Stability	Stable under normal conditions.
Conditions to Avoid	Incompatible products. Excess heat. Keep away from open flames, hot surfaces and sources of ignition.
Incompatible Materials	Strong oxidizing agents, Acids, Peroxides
Hazardous Decomposition Products	Carbon monoxide (CO), Carbon dioxide (CO ₂)
Hazardous Polymerization	Hazardous polymerization may occur.
Hazardous Reactions	None under normal processing.

11. Toxicological information

Acute Toxicity

Product Information

Component Information

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
1-Hexene	LD50 > 5600 mg/kg (Rat)	> 2000 mg/kg (Rabbit)	LC50 = 32000 ppm (Rat) 4 h

Toxicologically Synergistic Products No information available

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Irritation No information available

Sensitization No information available

Carcinogenicity The table below indicates whether each agency has listed any ingredient as a carcinogen.

Component	CAS-No	IARC	NTP	ACGIH	OSHA	Mexico
1-Hexene	592-41-6	Not listed	Not listed	Not listed	Not listed	Not listed

Mutagenic Effects	Not mutagenic in AMES Test
Reproductive Effects	No information available.
Developmental Effects	No information available.
Teratogenicity	No information available.
STOT - single exposure	Central nervous system (CNS)
STOT - repeated exposure	None known
Aspiration hazard	No information available
Symptoms / effects, both acute and delayed	Inhalation of high vapor concentrations may cause symptoms like headache, dizziness, tiredness, nausea and vomiting
Endocrine Disruptor Information	No information available
Other Adverse Effects	The toxicological properties have not been fully investigated.

12. Ecological information

Ecotoxicity

The product contains following substances which are hazardous for the environment. Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Component	Freshwater Algae	Freshwater Fish	Microtox	Water Flea
1-Hexene	EC50: > 1000 mg/L, 96h (Pseudokirchneriella subcapitata)	LC50 96 h 5.6 mg/L (Rainbow trout)	Not listed	EC50: = 30 mg/L, 48h Static (Daphnia magna) EC50: = 230 mg/L, 48h (Daphnia magna)

Persistence and Degradability Persistence is unlikely based on information available.

Bioaccumulation/ Accumulation No information available.

Mobility Will likely be mobile in the environment due to its volatility.

Component	log Pow
1-Hexene	3.39

13. Disposal considerations

Waste Disposal Methods Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification.

14. Transport information

DOT

UN-No	UN2370
Proper Shipping Name	1-HEXENE
Hazard Class	3
Packing Group	II

TDG

UN-No	UN2370
Proper Shipping Name	1-HEXENE
Hazard Class	3
Packing Group	II

IATA

UN-No	UN2370
Proper Shipping Name	1-HEXENE

Hazard Class	3
Packing Group	II
IMDG/IMO	
UN-No	UN2370
Proper Shipping Name	1-HEXENE
Hazard Class	3
Packing Group	II

15. Regulatory information

International Inventories

Component	DSL	NDSL	TSCA	EINECS	ELINCS	NLP	PICCS	ENCS	AICS	IECSC	KECL
1-Hexene	X	-	X	209-753-1	-		X	X	X	X	X

Canada

SDS in compliance with provisions of information as set out in Canadian Standard - Part 4, Schedule 1 and 2 of the Hazardous Products Regulations (HPR) and meets the requirements of the HPR (Paragraph 13(1)(a) of the Hazardous Products Act (HPA)).

16. Other information

Prepared By	Regulatory Affairs Thermo Fisher Scientific Email: EMSDS.RA@thermofisher.com
Creation Date	03-May-2010
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Revision Summary	This document has been updated to comply with the requirements of WHMIS 2015 to align with the Globally Harmonised System (GHS) for the Classification and Labelling of Chemicals.

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text

End of SDS