

# Material Safety Data Sheet

## 1,4-Hexadiene, mixture of cis and trans, 99%

ACC# 38588

### Section 1 - Chemical Product and Company Identification

**MSDS Name:** 1,4-Hexadiene, mixture of cis and trans, 99%

**Catalog Numbers:** AC156550050, AC156550100

**Synonyms:** None.

**Company Identification:**

Acros Organics N.V.

One Reagent Lane

Fair Lawn, NJ 07410

**For information in North America, call:** 800-ACROS-01

**For emergencies in the US, call CHEMTREC:** 800-424-9300

### Section 2 - Composition, Information on Ingredients

CAS#	Chemical Name	Percent	EINECS/ELINCS
592-45-0	1,4-Hexadiene	99	209-756-8

### Section 3 - Hazards Identification

#### EMERGENCY OVERVIEW

Appearance: clear, colorless liquid. Flash Point: -25 deg C.

**Danger!** Extremely flammable liquid and vapor. Vapor may cause flash fire. Causes eye and respiratory tract irritation. May cause skin irritation. May cause central nervous system effects. Reactive monomer. Store under refrigeration to preserve product quality. Product polymerizes gradually at room temperature; at elevated temperatures, polymerization may occur rapidly enough to generate heat and pressure.

**Target Organs:** Central nervous system, respiratory system, eyes.

#### Potential Health Effects

**Eye:** Causes eye irritation.

**Skin:** May cause skin irritation.

**Ingestion:** May cause gastrointestinal irritation with nausea, vomiting and diarrhea. May cause central nervous system effects.

**Inhalation:** Causes respiratory tract irritation. Vapors may cause dizziness or suffocation.

**Chronic:** Prolonged or repeated skin contact may cause dermatitis.

### Section 4 - First Aid Measures

**Eyes:** Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid.

**Skin:** Get medical aid. Flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse.

**Ingestion:** Never give anything by mouth to an unconscious person. Get medical aid. Do NOT induce vomiting. Give milk or water with activated charcoal if available.

**Inhalation:** Remove from exposure and move to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical aid.

**Notes to Physician:** Treat symptomatically and supportively.

### Section 5 - Fire Fighting Measures

**General Information:** As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. Extremely flammable liquid and vapor. Vapor may cause flash fire. Vapors are heavier than air and may travel to a source of ignition and flash back. Vapors can spread along the ground and collect in low or confined areas. This liquid floats on water and may travel to a source of ignition and spread fire.

**Extinguishing Media:** For small fires, use dry chemical, carbon dioxide, water spray or alcohol-resistant foam. For large fires, use water spray, fog, or alcohol-resistant foam. Water may be ineffective. This material is lighter than water and insoluble in water. The fire could easily be spread by the use of water in an area where the water cannot be contained. Do NOT use straight streams of water.

**Flash Point:** -25 deg C ( -13.00 deg F)

**Autoignition Temperature:** Not applicable.

**Explosion Limits, Lower:** 2.00 vol %

**Upper:** 6.10 vol %

**NFPA Rating:** (estimated) Health: 2; Flammability: 3; Instability: 2

### Section 6 - Accidental Release Measures

**General Information:** Use proper personal protective equipment as indicated in Section 8.

**Spills/Leaks:** Absorb spill with inert material (e.g. vermiculite, sand or earth), then place in suitable container. Avoid runoff into storm sewers and ditches which lead to waterways. Clean up spills immediately, observing precautions in the Protective Equipment section. Remove all sources of ignition. Use a spark-proof tool. Provide ventilation. A vapor suppressing foam may be used to reduce vapors.

## Section 7 - Handling and Storage

**Handling:** Wash thoroughly after handling. Remove contaminated clothing and wash before reuse. Ground and bond containers when transferring material. Avoid contact with eyes, skin, and clothing. Empty containers retain product residue, (liquid and/or vapor), and can be dangerous. Keep container tightly closed. Keep away from heat, sparks and flame. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose empty containers to heat, sparks or open flames. Use only with adequate ventilation. Avoid breathing vapor.

**Storage:** Keep away from sources of ignition. Store in a tightly closed container. Refrigerator/flammables.

## Section 8 - Exposure Controls, Personal Protection

**Engineering Controls:** Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use adequate general or local explosion-proof ventilation to keep airborne levels to acceptable levels.

### Exposure Limits

Chemical Name	ACGIH	NIOSH	OSHA - Final PELs
1,4-Hexadiene	none listed	none listed	none listed
Hexadiene	none listed	none listed	none listed

**OSHA Vacated PELs:** 1,4-Hexadiene: No OSHA Vacated PELs are listed for this chemical. Hexadiene: No OSHA Vacated PELs are listed for this chemical.

### Personal Protective Equipment

**Eyes:** Wear chemical splash goggles.

**Skin:** Wear appropriate protective gloves to prevent skin exposure.

**Clothing:** Wear appropriate protective clothing to prevent skin exposure.

**Respirators:** A respiratory protection program that meets OSHA's 29 CFR 1910.134 and ANSI Z88.2 requirements or European Standard EN 149 must be followed whenever workplace conditions warrant respirator use.

## Section 9 - Physical and Chemical Properties

**Physical State:** Liquid

**Appearance:** clear, colorless

**Odor:** None reported.

**pH:** Not available.

**Vapor Pressure:** Not available.

**Vapor Density:** 2.83 (air=1)

**Evaporation Rate:**Not available.

**Viscosity:** Not available.

**Boiling Point:** 64-66 deg C @ 760 mmHg

**Freezing/Melting Point:**Not available.

**Decomposition Temperature:**Not available.

**Solubility:** Insoluble.

**Specific Gravity/Density:**0.7100 g/cm3

**Molecular Formula:**C6H10

**Molecular Weight:**82.13

## Section 10 - Stability and Reactivity

**Chemical Stability:** May polymerize.

**Conditions to Avoid:** Ignition sources, excess heat.

**Incompatibilities with Other Materials:** Strong oxidizing agents.

**Hazardous Decomposition Products:** Carbon monoxide, irritating and toxic fumes and gases, carbon dioxide.

**Hazardous Polymerization:** May occur.

## Section 11 - Toxicological Information

### RTECS#:

**CAS#** 592-45-0 unlisted.

**CAS#** 42296-74-2 unlisted.

### LD50/LC50:

Not available.

Not available.

### Carcinogenicity:

CAS# 592-45-0: Not listed by ACGIH, IARC, NTP, or CA Prop 65.

CAS# 42296-74-2: Not listed by ACGIH, IARC, NTP, or CA Prop 65.

**Epidemiology:** No information available.

**Teratogenicity:** No information available.

**Reproductive Effects:** No information available.

**Mutagenicity:** No information available.  
**Neurotoxicity:** No information available.  
**Other Studies:**

## Section 12 - Ecological Information

No information available.

## Section 13 - Disposal Considerations

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. US EPA guidelines for the classification determination are listed in 40 CFR Parts 261.3. Additionally, waste generators must consult state and local hazardous waste regulations to ensure complete and accurate classification.

**RCRA P-Series:** None listed.

**RCRA U-Series:** None listed.

## Section 14 - Transport Information

	US DOT	Canada TDG
<b>Shipping Name:</b>	HEXADIENE	HEXADIENE
<b>Hazard Class:</b>	3	3
<b>UN Number:</b>	UN2458	UN2458
<b>Packing Group:</b>	II	II
<b>Additional Info:</b>		FLASHPOINT -25 DEG C

## Section 15 - Regulatory Information

### US FEDERAL

#### TSCA

CAS# 592-45-0 is listed on the TSCA inventory.

CAS# 42296-74-2 is not listed on the TSCA inventory. It is for research and development use only.

#### Health & Safety Reporting List

None of the chemicals are on the Health & Safety Reporting List.

#### Chemical Test Rules

None of the chemicals in this product are under a Chemical Test Rule.

#### Section 12b

None of the chemicals are listed under TSCA Section 12b.

#### TSCA Significant New Use Rule

None of the chemicals in this material have a SNUR under TSCA.

#### CERCLA Hazardous Substances and corresponding RQs

None of the chemicals in this material have an RQ.

#### SARA Section 302 Extremely Hazardous Substances

None of the chemicals in this product have a TPQ.

**Section 313** No chemicals are reportable under Section 313.

#### Clean Air Act:

This material does not contain any hazardous air pollutants.

This material does not contain any Class 1 Ozone depleters.

This material does not contain any Class 2 Ozone depleters.

#### Clean Water Act:

None of the chemicals in this product are listed as Hazardous Substances under the CWA.

None of the chemicals in this product are listed as Priority Pollutants under the CWA.

None of the chemicals in this product are listed as Toxic Pollutants under the CWA.

#### OSHA:

None of the chemicals in this product are considered highly hazardous by OSHA.

#### STATE

CAS# 592-45-0 can be found on the following state right to know lists: New Jersey, (listed as Hexadiene), Pennsylvania, Massachusetts.

CAS# 42296-74-2 can be found on the following state right to know lists: New Jersey.

### California Prop 65

California No Significant Risk Level: None of the chemicals in this product are listed.

### European/International Regulations

#### European Labeling in Accordance with EC Directives

#### Hazard Symbols:

XI F

#### Risk Phrases:

R 11 Highly flammable.

R 36/37 Irritating to eyes and respiratory system.

#### Safety Phrases:

S 16 Keep away from sources of ignition - No smoking.

### WGK (Water Danger/Protection)

CAS# 592-45-0: No information available.  
CAS# 42296-74-2: No information available.

**Canada - DSL/NDSL**

CAS# 592-45-0 is listed on Canada's NDSL List.

**Canada - WHMIS**

This product has a WHMIS classification of B2, D2B.

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all of the information required by those regulations.

**Canadian Ingredient Disclosure List**

CAS# 592-45-0 is not listed on the Canadian Ingredient Disclosure List.

<b>Section 16 - Additional Information</b>
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**MSDS Creation Date:** 9/02/1997

**Revision #8 Date:** 11/02/2005

*The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall Fisher be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, howsoever arising, even if Fisher has been advised of the possibility of such damages.*