Material Safety Data Sheet
Hexachloroethane, 99%

ACC# 48183

Section 1 - Chemical Product and Company Identification

MSDS Name: Hexachloroethane, 99%
Catalog Numbers: AC148540000, AC148540010, AC148540025, AC148540050, AC148541000, AC148545000
Synonyms: Ethane hexachloride; Ethylene hexachloride; 1,1,1,2,2,2-Hexachloroethane; Hexachloroethylene; Carbon hexachloride; Perchloroethane
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

<table>
<thead>
<tr>
<th>CAS#</th>
<th>Chemical Name</th>
<th>Percent</th>
<th>EINECS/ELINCS</th>
</tr>
</thead>
<tbody>
<tr>
<td>67-72-1</td>
<td>Hexachloroethane</td>
<td>99</td>
<td>200-666-4</td>
</tr>
</tbody>
</table>

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Appearance: colorless crystals.
Target Organs: Kidneys, central nervous system, liver.

Potential Health Effects
Eye: Causes eye irritation. May result in corneal injury.
Skin: Causes skin irritation.
Ingestion: May cause central nervous system depression, kidney damage, and liver damage. May cause gastrointestinal irritation with nausea, vomiting and diarrhea.
Inhalation: Causes irritation of mucous membrane. Causes upper respiratory tract irritation.
Chronic: Possible cancer hazard based on tests with laboratory animals. May cause liver and kidney damage.

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 immediately.
Skin: Get medical aid immediately. Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes.
Ingestion: Do not induce vomiting. If victim is conscious and alert, give 2-4 cupfuls of milk or water. Never give anything by mouth to an unconscious person. Get medical aid immediately.
Inhalation: Get medical aid immediately. Remove from exposure and move to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen.
Notes to Physician: Treat symptomatically.

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. Vapors can travel to a source of ignition and flash back. During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion. Vapors may be heavier than air. They can spread along the ground and collect in low or confined areas.
Extinguishing Media: Use water spray, dry chemical, carbon dioxide, or appropriate foam.
Flash Point: Not applicable.
Autoignition Temperature: Not available.
Explosion Limits, Lower: Not available.
Upper: Not available.
NFPA Rating: Not published.

Section 6 - Accidental Release Measures

General Information: Use proper personal protective equipment as indicated in Section 8.
Spills/Leaks: Clean up spills immediately, observing precautions in the Protective Equipment section. Sweep up, then place into a suitable container for disposal. Avoid generating dusty conditions. Do not let this chemical enter the environment.
Section 7 - Handling and Storage

Handling: Wash thoroughly after handling. Use with adequate ventilation. Avoid contact with eyes, skin, and clothing. Avoid ingestion and inhalation.

Storage: Store in a cool, dry place. Keep container closed when not in use.

Section 8 - Exposure Controls, Personal Protection

Engineering Controls: Use adequate general or local exhaust ventilation to keep airborne concentrations below the permissible exposure limits.

Exposure Limits

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>ACGIH</th>
<th>NIOSH</th>
<th>OSHA - Final PELs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hexachloroethane</td>
<td>1 ppm TWA; Skin - potential significant contribution to overall exposure by the cutaneous route</td>
<td>1 ppm TWA; 10 mg/m3 TWA 300 ppm IDLH</td>
<td>1 ppm TWA; 10 mg/m3 TWA</td>
</tr>
</tbody>
</table>

OSHA Vacated PELs: Hexachloroethane: 1 ppm TWA; 10 mg/m3 TWA

Personal Protective Equipment

Eyes: 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.

Skin: Wear appropriate protective gloves to prevent skin exposure.

Clothing: Wear appropriate protective clothing to prevent skin exposure.

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.

Section 9 - Physical and Chemical Properties

Physical State: Crystals

Appearance: colorless

Odor: camphor

pH: Not available.

Vapor Pressure: 0.21 mm Hg @ 20

Vapor Density: 8.16 (Air=1)

Evaporation Rate: Not available.

Viscosity: Not available.

Boiling Point: 186 deg C @ 777mm Hg (subl.)

Freezing/Melting Point: 185 deg C

Decomposition Temperature: Not available.

Solubility: Insoluble.

Specific Gravity/Density: 2.091

Molecular Formula: C2Cl6

Molecular Weight: 236.74

Section 10 - Stability and Reactivity

Chemical Stability: Stable under normal temperatures and pressures.

Conditions to Avoid: Incompatible materials.

Incompatibilities with Other Materials: Metals, strong oxidizing agents, strong bases, alkalies.

Hazardous Decomposition Products: Phosgene, carbon monoxide, irritating and toxic fumes and gases, carbon dioxide, chloride fumes.

Hazardous Polymerization: Has not been reported.

Section 11 - Toxicological Information

RTECS#: CAS# 67-72-1: KI4025000

LD50/LC50:

CAS# 67-72-1:

Oral, rat: LD50 = 4460 mg/kg;

Skin, rabbit: LD50 = 32 g/kg;

Carcinogenicity:

CAS# 67-72-1:

- ACGIH: A3 - Confirmed animal carcinogen with unknown relevance to humans
- California: carcinogen, initial date 7/1/90
- NTP: Suspect carcinogen
- IARC: Group 2B carcinogen

Epidemiology: No data available.

Teratogenicity: No data available.
Teratogenicity: No data available.
Reproductive Effects: No data available.
Mutagenicity: No data available.
Neurotoxicity: No data available.
Other Studies:

Section 12 - Ecological Information

Ecotoxicity: No data available. No information available.
Environmental: No information available.
Physical: No information available.
Other: Waste minimization priority chemical.

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.

Section 14 - Transport Information

<table>
<thead>
<tr>
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<th>US DOT</th>
<th>Canada TDG</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shipping Name:</td>
<td>NOT REGULATED FOR DOMESTIC TRANSPORT</td>
<td>No information available.</td>
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<tr>
<td>Hazard Class:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>UN Number:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Packing Group:</td>
<td></td>
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</tr>
</tbody>
</table>

Section 15 - Regulatory Information

US FEDERAL

TSCA
CAS# 67-72-1 is listed on the TSCA inventory.

Health & Safety Reporting List
CAS# 67-72-1: Effective 4/29/83, Sunset 1/13/86

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
CAS# 67-72-1: 100 lb final RQ; 45.4 kg final RQ

SARA Section 302 Extremely Hazardous Substances
None of the chemicals in this product have a TPQ.

SARA Codes
CAS# 67-72-1: immediate, delayed.

Section 313
This material contains Hexachloroethane (CAS# 67-72-1, 99%), which is subject to the reporting requirements of Section 313 of SARA Title III and 40 CFR

Clean Air Act:
CAS# 67-72-1 is listed as a hazardous air pollutant (HAP).
This material does not contain any Class 1 Ozone depletors.
This material does not contain any Class 2 Ozone depletors.

Clean Water Act:
None of the chemicals in this product are listed as Hazardous Substances under the CWA. CAS# 67-72-1 is listed as a Priority Pollutant under the Clean Water Act. CAS# 67-72-1 is listed as a Toxic Pollutant under the Clean Water Act.

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

STATE
CAS# 67-72-1 can be found on the following state right to know lists: California, New Jersey, Pennsylvania, Minnesota, Massachusetts.

California Prop 65
The following statement(s) is(are) made in order to comply with the California Safe Drinking Water Act:
WARNING: This product contains Hexachloroethane, a chemical known to the state of California to cause cancer.
California No Significant Risk Level: CAS# 67-72-1: 20 æg/day NSRL

European/International Regulations
European Labeling in Accordance with EC Directives

Hazard Symbols:
XN

Risk Phrases:
R 36/37/38 Irritating to eyes, respiratory system and skin.
R 36/37/38
Irritating to eyes, respiratory system and skin.
R 40
Limited evidence of a carcinogenic effect.

Safety Phrases:
S 24/25 Avoid contact with skin and eyes.
S 26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
S 36/37/39 Wear suitable protective clothing, gloves and eye/face protection.

WGK (Water Danger/Protection)
CAS# 67-72-1: 3

Canada - DSL/NDSL
CAS# 67-72-1 is listed on Canada's DSL List.

Canada - WHMIS
WHMIS: Not available.
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# 67-72-1 is listed on the Canadian Ingredient Disclosure List.

Section 16 - Additional Information

MSDS Creation Date: 3/24/1998
Revision #4 Date: 10/03/2005

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.