1. PRODUCT AND COMPANY IDENTIFICATION

1.1 Product identifiers

Product name: Hexachloroethane
Product Number: 185442
Brand: Aldrich
CAS-No.: 67-72-1

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

Identified uses: Laboratory chemicals, Manufacture of substances

1.3 Details of the supplier of the safety data sheet

Company: Sigma-Aldrich
3050 Spruce Street
SAINT LOUIS MO  63103
USA
Telephone: +1 800-325-5832
Fax: +1 800-325-5052

1.4 Emergency telephone number

Emergency Phone #: (314) 776-6555

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)
Skin irritation (Category 2), H315
Eye irritation (Category 2A), H319
Carcinogenicity (Category 2), H351
Specific target organ toxicity - single exposure (Category 3), Respiratory system, H335
Acute aquatic toxicity (Category 1), H400
Chronic aquatic toxicity (Category 1), H410

For the full text of the H-Statements mentioned in this Section, see Section 16.

2.2 GHS Label elements, including precautionary statements

Pictogram

Signal word: Warning

Hazard statement(s)
H315 Causes skin irritation.
H319 Causes serious eye irritation.
H335 May cause respiratory irritation.
H351 Suspected of causing cancer.
H410 Very toxic to aquatic life with long lasting effects.

Precautionary statement(s)
P201 Obtain special instructions before use.
P202 Do not handle until all safety precautions have been read and understood.
Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.
Wash skin thoroughly after handling.
Use only outdoors or in a well-ventilated area.
Avoid release to the environment.
Wear protective gloves/ eye protection/ face protection.
IF ON SKIN: Wash with plenty of soap and water.
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
IF exposed or concerned: Get medical advice/ attention.
Specific treatment (see supplemental first aid instructions on this label).
If skin irritation occurs: Get medical advice/ attention.
If eye irritation persists: Get medical advice/ attention.
Take off contaminated clothing and wash before reuse.
Collect spillage.
Store in a well-ventilated place. Keep container tightly closed.
Dispose of contents/ container to an approved waste disposal plant.

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS - none

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances
Synonyms: Perchloroethane
Formula: C2Cl6
Molecular Weight: 236.74 g/mol
CAS-No.: 67-72-1
EC-No.: 200-666-4

<table>
<thead>
<tr>
<th>Component</th>
<th>Classification</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hexachloroethane</td>
<td>Skin Irrit. 2; Eye Irrit. 2A; Carc. 2; STOT SE 3; Aquatic Acute 1; Aquatic Chronic 1; H315, H319, H335, H351, H410</td>
<td>-</td>
</tr>
</tbody>
</table>

For the full text of the H-Statements mentioned in this Section, see Section 16.

4. FIRST AID MEASURES

4.1 Description of first aid measures

General advice
Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

If inhaled
If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact
Wash off with soap and plenty of water. Consult a physician.

In case of eye contact
Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

If swallowed
Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

4.2 Most important symptoms and effects, both acute and delayed
The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11
4.3 Indication of any immediate medical attention and special treatment needed
no data available

5. FIREFIGHTING MEASURES

5.1 Extinguishing media
Suitable extinguishing media
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

5.2 Special hazards arising from the substance or mixture
Carbon oxides, Hydrogen chloride gas

5.3 Advice for firefighters
Wear self contained breathing apparatus for fire fighting if necessary.

5.4 Further information
no data available

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures
Use personal protective equipment. Avoid dust formation. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust.
For personal protection see section 8.

6.2 Environmental precautions
Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

6.3 Methods and materials for containment and cleaning up
Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.

6.4 Reference to other sections
For disposal see section 13.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling
Avoid contact with skin and eyes. Avoid formation of dust and aerosols.
Provide appropriate exhaust ventilation at places where dust is formed.
For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities
Keep container tightly closed in a dry and well-ventilated place.

7.3 Specific end use(s)
Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS-No.</th>
<th>Value</th>
<th>Control parameters</th>
<th>Basis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hexachloroethane</td>
<td>67-72-1</td>
<td>TWA</td>
<td>1 ppm</td>
<td>USA. ACGIH Threshold Limit Values (TLV)</td>
</tr>
<tr>
<td>Remarks</td>
<td></td>
<td></td>
<td></td>
<td>Liver &amp; kidney damage</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Confirmed animal carcinogen with unknown relevance to humans</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Danger of cutaneous absorption</td>
</tr>
<tr>
<td>TWA</td>
<td></td>
<td></td>
<td>1 ppm</td>
<td>USA. NIOSH Recommended Exposure Limits</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>10 mg/m3</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Potential Occupational Carcinogen</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>See Appendix C</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>See Appendix A</td>
<td></td>
</tr>
</tbody>
</table>
### Potential for dermal absorption

<table>
<thead>
<tr>
<th></th>
<th>TWA</th>
<th>1 ppm</th>
<th>USA, Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants</th>
</tr>
</thead>
<tbody>
<tr>
<td>Skin designation</td>
<td>10 mg/m³</td>
<td>1 ppm</td>
<td></td>
</tr>
<tr>
<td>The value in mg/m³ is approximate.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### 8.2 Exposure controls

**Appropriate engineering controls**
Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

**Personal protective equipment**

**Eye/face protection**
Safety glasses with side-shields conforming to EN166 Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

**Skin protection**
Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

**Full contact**
Material: Nitrile rubber
Minimum layer thickness: 0.11 mm
Break through time: 480 min
Material tested:Dermatril® (KCL 740 / Aldrich Z677272, Size M)

**Splash contact**
Material: Nitrile rubber
Minimum layer thickness: 0.11 mm
Break through time: 480 min
Material tested:Dermatril® (KCL 740 / Aldrich Z677272, Size M)

data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN374

If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

**Body Protection**
impervious clothing, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

**Respiratory protection**
Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

**Control of environmental exposure**
Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

### 9. PHYSICAL AND CHEMICAL PROPERTIES

**9.1 Information on basic physical and chemical properties**

<p>| |</p>
<table>
<thead>
<tr>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>a) Appearance</td>
</tr>
<tr>
<td>Form: crystalline</td>
</tr>
<tr>
<td>Colour: white</td>
</tr>
<tr>
<td>No.</td>
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<tr>
<td>-----</td>
</tr>
<tr>
<td>b)</td>
</tr>
<tr>
<td>c)</td>
</tr>
<tr>
<td>d)</td>
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<tr>
<td>e)</td>
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<td>f)</td>
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<td>r)</td>
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<tr>
<td>s)</td>
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<tr>
<td>t)</td>
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</tbody>
</table>

9.2 Other safety information
no data available

10. STABILITY AND REACTIVITY

10.1 Reactivity
no data available

10.2 Chemical stability
Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions
no data available

10.4 Conditions to avoid
no data available

10.5 Incompatible materials
Strong oxidizing agents, Strong bases

10.6 Hazardous decomposition products
Other decomposition products - no data available
In the event of fire: see section 5
11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

**Acute toxicity**
- LD50 Oral - guinea pig - 4,970 mg/kg
- TDLo Oral - rat - female - 5,500 mg/kg
- TDLo Oral - rat - 6,944 mg/kg
- TDLo Oral - rat - 48,750 mg/kg
- TDLo Oral - rabbit - 12,000 mg/kg
- Inhalation: Behavioral: Muscle weakness.
- LD50 Dermal - rabbit - 32,000 mg/kg
- LD50 Intraperitoneal - mouse - 4,500 mg/kg
- LDLO Intraperitoneal - rat - 2,900 mg/kg
- LDLO Intravenous - dog - 325 mg/kg

**Skin corrosion/irritation**
no data available

**Serious eye damage/eye irritation**
no data available

**Respiratory or skin sensitisation**
no data available

**Germ cell mutagenicity**

Hamster - ovary
Sister chromatid exchange

**Carcinogenicity**

This product is or contains a component that has been reported to be possibly carcinogenic based on its IARC, ACGIH, NTP, or EPA classification.

Limited evidence of carcinogenicity in animal studies

- IARC: 2B - Group 2B: Possibly carcinogenic to humans (Hexachloroethane)
- NTP: Reasonably anticipated to be a human carcinogen (Hexachloroethane)
- OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

**Reproductive toxicity**
no data available

no data available

**Specific target organ toxicity - single exposure**
no data available

**Specific target organ toxicity - repeated exposure**
no data available
Aspiration hazard
no data available

Additional Information
RTECS: KI4025000
To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Kidney -

12. ECOLOGICAL INFORMATION

12.1 Toxicity
- Toxicity to fish
  NOEC - Cyprinodon variegatus (sheepshead minnow) - 1 mg/l - 96 h
- Toxicity to daphnia and other aquatic invertebrates
  LC50 - Daphnia magna (Water flea) - 1.36 mg/l - 48 h

12.2 Persistence and degradability
- Biodegradability
  Result: - Not biodegradable.
  (OECD Test Guideline 301)

12.3 Bioaccumulative potential
- Bioaccumulation
  Lepomis macrochirus (Bluegill) - 28 d
  - 0.00617 mg/l
  Bioconcentration factor (BCF): 139

12.4 Mobility in soil
no data available

12.5 Results of PBT and vPvB assessment
PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

12.6 Other adverse effects
An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.
Very toxic to aquatic life with long lasting effects.
no data available

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods
- Product
  Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.

- Contaminated packaging
  Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)
- UN number: 3077
- Class: 9
- Packing group: III
- Proper shipping name: Environmentally hazardous substance, solid, n.o.s. (Hexachloroethane)
- Reportable Quantity (RQ): 100 lbs
- Marine pollutant:
- Poison Inhalation Hazard: No

IMDG
- UN number: 3077
- Class: 9
- Packing group: III
- EMS-No: F-A, S-F
- Proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Hexachloroethane)
- Marine pollutant: No
Further information
EHS-Mark required (ADR 2.2.9.1.10, IMDG code 2.10.3) for single packagings and combination packagings containing inner packagings with Dangerous Goods > 5L for liquids or > 5kg for solids.

15. REGULATORY INFORMATION

SARA 302 Components
SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components
The following components are subject to reporting levels established by SARA Title III, Section 313:

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS-No.</th>
<th>Revision Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hexachloroethane</td>
<td>67-72-1</td>
<td>2007-07-01</td>
</tr>
</tbody>
</table>

SARA 311/312 Hazards
Acute Health Hazard, Chronic Health Hazard

Massachusetts Right To Know Components

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS-No.</th>
<th>Revision Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hexachloroethane</td>
<td>67-72-1</td>
<td>2007-07-01</td>
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</table>

Pennsylvania Right To Know Components

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS-No.</th>
<th>Revision Date</th>
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</thead>
<tbody>
<tr>
<td>Hexachloroethane</td>
<td>67-72-1</td>
<td>2007-07-01</td>
</tr>
</tbody>
</table>

New Jersey Right To Know Components

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS-No.</th>
<th>Revision Date</th>
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</thead>
<tbody>
<tr>
<td>Hexachloroethane</td>
<td>67-72-1</td>
<td>2007-07-01</td>
</tr>
</tbody>
</table>

California Prop. 65 Components
WARNING! This product contains a chemical known to the State of California to cause cancer.

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS-No.</th>
<th>Revision Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hexachloroethane</td>
<td>67-72-1</td>
<td>2007-09-28</td>
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16. OTHER INFORMATION

Full text of H-Statements referred to under sections 2 and 3.

<table>
<thead>
<tr>
<th>Component</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aquatic Acute</td>
<td>Acute aquatic toxicity</td>
</tr>
<tr>
<td>Aquatic Chronic</td>
<td>Chronic aquatic toxicity</td>
</tr>
<tr>
<td>Carc.</td>
<td>Carcinogenicity</td>
</tr>
<tr>
<td>Eye Irrit.</td>
<td>Eye irritation</td>
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<tr>
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<td>Suspected of causing cancer.</td>
</tr>
<tr>
<td>H400</td>
<td>Very toxic to aquatic life.</td>
</tr>
<tr>
<td>H410</td>
<td>Very toxic to aquatic life with long lasting effects.</td>
</tr>
</tbody>
</table>

HMIS Rating
Health hazard:  2
Chronic Health Hazard: *
Flammability:  0
Physical Hazard  0

NFPA Rating
Health hazard:  2
Fire Hazard: 0
Reactivity Hazard: 0

Further information
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The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Corporation and its Affiliates shall not be held liable for any damage resulting from handling or from contact with the above product. See www.sigma-aldrich.com and/or the reverse side of invoice or packing slip for additional terms and conditions of sale.

Preparation Information
Sigma-Aldrich Corporation
Product Safety – Americas Region
1-800-521-8956

Version: 4.7       Revision Date: 06/30/2014       Print Date: 08/27/2014