

## 1 Identification

### Product identifier

**Product name:** Hexachlorobenzene

**Stock number:** A15016

**CAS Number:**  
118-74-1

**EC number:**  
204-273-9

**Index number:**  
602-065-00-6

**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  
Thermo Fisher Scientific Chemicals, 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 business hours (Monday-Friday, 8am-7pm EST), call (800) 343-0660. After normal business hours, call Carechem 24 at (866) 928-0789.

## 2 Hazard(s) identification

### Classification of the substance or mixture in accordance with 29 CFR 1910 (OSHA HCS)



GHS08 Health hazard

Carc. 1A H350 May cause cancer.

STOT RE 1 H372 Causes damage to the kidneys, the liver, the reproductive system, the digestive system, the blood, the endocrine system and the immune system through prolonged or repeated exposure. Route of exposure: Oral, Inhalative.

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

### Label elements

**GHS label elements** The product is classified and labeled in accordance with 29 CFR 1910 (OSHA HCS)

### Hazard pictograms



GHS08

### Signal word

Danger

### Hazard statements

H350 May cause cancer.  
H372 Causes damage to the kidneys, the liver, the reproductive system, the digestive system, the blood, the endocrine system and the immune system through prolonged or repeated exposure. Route of exposure: Oral, Inhalative.

### Precautionary statements

P260 Do not breathe dust/fume/gas/mist/vapours/spray.  
P281 Use personal protective equipment as required.  
P264 Wash thoroughly after handling.  
P308+P313 IF exposed or concerned: Get medical advice/attention.  
P405 Store locked up.  
P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

### WHMIS classification

D1B - Toxic material causing immediate and serious toxic effects  
D2A - Very toxic material causing other toxic effects



### Classification system

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

HEALTH	2	Health (acute effects) = 2
FIRE	0	Flammability = 0
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:**  
118-74-1 Hexachlorobenzene  
**Identification number(s):**  
**EC number:** 204-273-9  
**Index number:** 602-065-00-6

Product name: **Hexachlorobenzene**

(Contd. of page 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  
Hydrogen chloride (HCl)  
**Advice for firefighters**  
**Protective equipment:**  
Wear self-contained respirator.  
Wear fully protective impervious suit.

6 Accidental release measures

**Personal precautions, protective equipment and emergency procedures**  
Wear protective equipment. Keep unprotected persons away.  
Ensure adequate ventilation  
**Environmental precautions:** Do not allow material to be released to the environment without proper governmental permits.  
**Methods and material for containment and cleaning up:** Dispose of contaminated material as waste according to section 13.  
**Prevention of secondary hazards:** No special measures required.  
**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.  
Open and handle container with care.  
**Information about protection against explosions and fires:** The product is not flammable  
**Conditions for safe storage, including any incompatibilities**  
**Storage**  
**Requirements to be met by storerooms and receptacles:** No special requirements.  
**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.  
**Components with limit values that require monitoring at the workplace:**

Hexachlorobenzene  
mg/m3  
ACGIH TLV 0.002 (skin); Confirmed Animal Carcinogen  
France Carcinogen  
Germany No MAK established  
Poland TWA 0.5  
Russia 0.9-STEL (skin)  
United Kingdom Carcinogen

Control parameters

Components with limit values that require monitoring at the workplace:

118-74-1 Hexachlorobenzene (100.0%)

TLV (USA)	Long-term value: 0.002 mg/m³ Skin
EL (Canada)	Long-term value: 0.002 mg/m³ Skin; IARC 2B
EV (Canada)	Long-term value: 0.002 mg/m³ Skin

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.  
Store protective clothing separately.  
Maintain an ergonomically appropriate working environment.

(Contd. on page 3)  
USA

**Product name:** Hexachlorobenzene

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

(Contd. of page 2)

**9 Physical and chemical properties**

**Information on basic physical and chemical properties**

**General Information**

**Appearance:**

**Form:** Powder  
**Color:** White  
**Odor:** Not determined  
**Odor threshold:** Not determined.

**pH-value:** Not applicable.

**Change in condition**

**Melting point/Melting range:** 227-229 °C (441-444 °F)  
**Boiling point/Boiling range:** Not determined  
**Sublimation temperature / start:** Not determined

**Flash point:** Not applicable  
**Flammability (solid, gaseous):** Not determined.  
**Ignition temperature:** Not determined  
**Decomposition temperature:** Not determined  
**Auto igniting:** Not determined.

**Danger of explosion:** Product does not present an explosion hazard.

**Explosion limits:**

**Lower:** Not determined  
**Upper:** Not determined  
**Vapor pressure:** Not applicable.  
**Density at 20 °C (68 °F):** 2.044 g/cm<sup>3</sup> (17.057 lbs/gal)  
**Relative density:** Not determined.  
**Vapor density:** Not applicable.  
**Evaporation rate:** Not applicable.  
**Solubility in / Miscibility with**  
**Water:** Insoluble  
**Partition coefficient (n-octanol/water):** Not determined.  
**Viscosity:**  
**dynamic:** Not applicable.  
**kinematic:** Not applicable.  
**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** No dangerous reactions known  
**Conditions to avoid** No further relevant information available.  
**Incompatible materials:** Oxidizing agents  
**Hazardous decomposition products:**  
Carbon monoxide and carbon dioxide  
Hydrogen chloride (HCl)

**11 Toxicological information**

**Information on toxicological effects**

**Acute toxicity:** The Registry of Toxic Effects of Chemical Substances (RTECS) contains acute toxicity data for this substance.

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

**Skin irritation or corrosion:** Irritant to skin and mucous membranes.

**Eye irritation or corrosion:** Irritating effect.

**Sensitization:** No sensitizing effects known.

**Germ cell mutagenicity:** The Registry of Toxic Effects of Chemical Substances (RTECS) contains mutation data for this substance.

**Carcinogenicity:**

May cause cancer.

EPA-B2: Probable human carcinogen, sufficient evidence from animal studies; inadequate evidence or no data from epidemiologic studies.

IARC-2B: Possibly carcinogenic to humans: limited evidence in humans in the absence of sufficient evidence in experimental animals.

NTP-R: Reasonably anticipated to be a carcinogen: limited evidence from studies in humans or sufficient evidence from studies in experimental animals.

ACGIH A3: Animal carcinogen: Agent is carcinogenic in experimental animals at a relatively high dose, by route(s) of administration, at site(s), of histologic type(s), or by mechanism(s) not considered relevant to worker exposure. Available epidemiologic studies do not confirm an increased risk of cancer in exposed humans.

Available evidence suggests that the agent is not likely to cause cancer in humans except under uncommon or unlikely routes or levels of exposure.

The Registry of Toxic Effects of Chemical Substances (RTECS) contains tumorigenic and/or carcinogenic and/or neoplastic data for this substance.

**Reproductive toxicity:** The Registry of Toxic Effects of Chemical Substances (RTECS) contains reproductive data for this substance.

**Specific target organ system toxicity - repeated exposure:**

Causes damage to the kidneys, the liver, the reproductive system, the digestive system, the blood, the endocrine system and the immune system through prolonged

or repeated exposure. Route of exposure: Oral, Inhalative.

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

**Aspiration hazard:** No effects known.

**Other information (about experimental toxicology):**

Tumorigenic effects have been observed on tests with laboratory animals.

Reproductive effects have been observed on tests with laboratory animals.

Mutagenic effects have been observed on tests with bacteria.

Mutagenic effects have been observed on tests with laboratory animals.

**Subacute to chronic toxicity:**

The Registry of Toxic Effects of Chemical Substances (RTECS) reports the following effects in laboratory animals:

Behavioral - somnolence (general depressed activity).

Behavioral - changes in motor activity (specific assay).

Behavioral - tetany.

Behavioral - irritability.

Behavioral - alteration of classical conditioning.

(Contd. on page 4)  
USA

**Product name: Hexachlorobenzene**

(Contd. of page 3)




Behavioral - headache.  
Behavioral - tremor.  
Endocrine - evidence of thyroid hypofunction.  
Endocrine - changes in spleen weight.  
Endocrine - adrenal cortex hyperplasia.  
Endocrine - other changes.  
Endocrine - changes in gonadotropins.  
Endocrine - effect on menstrual cycle.  
Endocrine - changes in thyroid weight.  
Endocrine - changes in thymus weight.  
Lungs, Thorax, or Respiration - structural or functional change in trachea or bronchi.  
Lungs, Thorax, or Respiration - other changes.  
Liver - other changes.  
Liver - changes in liver weight.  
Liver - fatty liver degeneration.  
Liver - tumors.  
Kidney, Ureter, Bladder - other changes.  
Kidney, Ureter, Bladder - changes in bladder weight.  
Kidney, Ureter, Bladder - other changes in urine composition.  
Blood - changes in serum composition (e.g. TP, bilirubin, cholesterol).  
Blood - changes in erythrocyte (RBC) count.  
Blood - other changes.  
Blood - lymphoma, including Hodgkin's disease.  
Blood - leukemia.  
Musculoskeletal - joints.  
Biochemical - Enzyme inhibition, induction, or change in blood or tissue levels - hepatic microsomal mixed oxidase.  
Biochemical - Enzyme inhibition, induction, or change in blood or tissue levels - dehydrogenases.  
Biochemical - Enzyme inhibition, induction, or change in blood or tissue levels - phosphatases.  
Biochemical - Metabolism (Intermediary) - other.  
Biochemical - Metabolism (Intermediary) - porphyrin including bile pigments.  
Biochemical - Metabolism (Intermediary) - plasma proteins not involving coagulation  
Biochemical - Enzyme inhibition, induction, or change in blood or tissue levels - other oxidoreductases.  
Sense Organs and Special Senses (Eye) - conjunctive irritation.  
Immunological Including Allergic - decrease in humoral immune response.  
Kidney, Ureter, Bladder - changes in tubules (including acute renal failure, acute tubular necrosis).  
Kidney, Ureter, Bladder - changes in kidney weight.  
Kidney, Ureter, Bladder - Kidney tumors.  
Related to Chronic Data - death.  
Gastrointestinal - hypermotility, diarrhea.  
Nutritional and Gross Metabolic - weight loss or decreased weight gain.  
Nutritional and Gross Metabolic - changes in calcium.  
Nutritional and Gross Metabolic - changes in phosphorus.  
Cardiac - other changes.  
Reproductive - Maternal Effects - menstrual cycle changes or disorders.  
Reproductive - Maternal Effects - ovaries, fallopian tubes.  
Reproductive - Effects on Newborn - weaning or lactation index (e.g., # alive at weaning per # alive at day 4).  
Reproductive - Specific Developmental Abnormalities - musculoskeletal system.  
Reproductive - Specific Developmental Abnormalities - blood and lymphatic systems (including spleen and marrow).  
Reproductive - Specific Developmental Abnormalities - immune and reticuloendothelial system  
Reproductive - Effects on Newborn - growth statistics (e.g.%, reduced weight gain).  
Reproductive - Effects on Newborn - biochemical and metabolic.  
Reproductive - Specific Developmental Abnormalities - craniofacial (including nose and tongue).  
Reproductive - Specific Developmental Abnormalities - urogenital system.  
Reproductive - Effects on Newborn - live birth index (measured after birth)  
Reproductive - Effects on Newborn - viability index (e.g., # alive at day 4 per # born live).  
Reproductive - Specific Developmental Abnormalities - Central Nervous System.  
Tumorigenic - carcinogenic by RTECS criteria.  
Tumorigenic - neoplastic by RTECS criteria.  
The Registry of Toxic Effects of Chemical Substances (RTECS) contains multiple dose toxicity data for this substance.  
**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.  
**Bioaccumulative potential** No further relevant information available.  
**Mobility in soil** No further relevant information available.  
**Ecotoxical effects:**  
**Remark:** Very toxic for aquatic organisms  
**Additional ecological information:**  
**General notes:**  
Do not allow material to be released to the environment without proper governmental permits.  
Do not allow product to reach ground water, water course or sewage system, even in small quantities.  
Danger to drinking water if even extremely small quantities leak into the ground.  
Also poisonous for fish and plankton in water bodies.  
May cause long lasting harmful effects to aquatic life.  
Avoid transfer into the environment.  
Very toxic for aquatic organisms  
**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.

Product name: <b>Hexachlorobenzene</b>	
(Contd. of page 4)	
<b>14 Transport information</b>	
UN-Number DOT, IMDG, IATA	UN2729
UN proper shipping name DOT IMDG, IATA	Hexachlorobenzene HEXACHLOROBENZENE
Transport hazard class(es) DOT	
	
Class Label Class Label IMDG, IATA	6.1 Toxic substances. 6.1 6.1 (T2) Toxic substances 6.1
	
Class Label	6.1 Toxic substances. 6.1
Packing group DOT, IMDG, IATA	III
Environmental hazards:	Environmentally hazardous substance, solid
Special precautions for user	Warning: Toxic substances
Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	Not applicable.
Transport/Additional information:	
DOT Marine Pollutant (DOT):	No
UN "Model Regulation":	UN2729, Hexachlorobenzene, 6.1, III
<b>15 Regulatory information</b>	
Safety, health and environmental regulations/legislation specific for the substance or mixture GHS label elements The product is classified and labeled in accordance with 29 CFR 1910 (OSHA HCS) Hazard pictograms	
	
GHS08	
Signal word Danger	
Hazard statements H350 May cause cancer. H372 Causes damage to the kidneys, the liver, the reproductive system, the digestive system, the blood, the endocrine system and the immune system through prolonged or repeated exposure. Route of exposure: Oral, Inhalative.	
Precautionary statements P260 Do not breathe dust/fume/gas/mist/vapours/spray. P281 Use personal protective equipment as required. P264 Wash thoroughly after handling. P308+P313 IF exposed or concerned: Get medical advice/attention. P405 Store locked up. P501 Dispose of contents/container in accordance with local/regional/national/international regulations.	
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)	
118-74-1 Hexachlorobenzene	
California Proposition 65	
Prop 65 - Chemicals known to cause cancer	
118-74-1 Hexachlorobenzene	
Prop 65 - Developmental toxicity	
118-74-1 Hexachlorobenzene	
Prop 65 - Developmental toxicity, female Substance is not listed. Prop 65 - Developmental toxicity, male Substance is not listed.	
Information about limitation of use: Workers are not allowed to be exposed to this hazardous material. Exceptions can be made by the authorities in certain cases. For use only by technically qualified individuals. This product is subject to the reporting requirements of section 313 of the Emergency Planning and Community Right to Know Act of 1986 and 40CFR372.	
Other regulations, limitations and prohibitive regulations Substance of Very High Concern (SVHC) according to the REACH Regulations (EC) No. 1907/2006. Substance is not listed. The conditions of restrictions according to Article 67 and Annex XVII of the Regulation (EC) No 1907/2006 (REACH) for the manufacturing, placing on the market and use must be observed. Substance is not listed. Annex XIV of the REACH Regulations (requiring Authorisation for use) Substance is not listed.	
Chemical safety assessment: A Chemical Safety Assessment has not been carried out.	
<b>16 Other information</b>	
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: Global Marketing Department Date of preparation / last revision 11/23/2015 / -	
(Contd. on page 6)	

Product name: Hexachlorobenzene	
<div>Abbreviations and acronyms:</div> <div>ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)</div> <div>IMDG: International Maritime Code for Dangerous Goods</div> <div>DOT: US Department of Transportation</div> <div>IATA: International Air Transport Association</div> <div>EINECS: European Inventory of Existing Commercial Chemical Substances</div> <div>CAS: Chemical Abstracts Service (division of the American Chemical Society)</div> <div>HMIS: Hazardous Materials Identification System (USA)</div> <div>WHMIS: Workplace Hazardous Materials Information System (Canada)</div> <div>LC50: Lethal concentration, 50 percent</div> <div>LD50: Lethal dose, 50 percent</div> <div>vPvB: very Persistent and very Bioaccumulative</div> <div>ACGIH: American Conference of Governmental Industrial Hygienists (USA)</div> <div>OSHA: Occupational Safety and Health Administration (USA)</div> <div>NTP: National Toxicology Program (USA)</div> <div>IARC: International Agency for Research on Cancer</div> <div>EPA: Environmental Protection Agency (USA)</div>	
(Contd. of page 5)	
USA	