

## 1 Identification

### Product identifier

**Product name:** Pentachlorophenol

**Stock number:** A14815

**CAS Number:**

87-86-5

**EC number:**

201-776-6

**Index number:**

604-002-00-8

**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)



GHS06 Skull and crossbones

Acute Tox. 2 H300 Fatal if swallowed.

Acute Tox. 2 H310 Fatal in contact with skin.

Acute Tox. 2 H330 Fatal if inhaled.



GHS08 Health hazard

Carc. 2 H351 Suspected of causing cancer.



GHS07

Skin Irrit. 2 H315 Causes skin irritation.

Eye Irrit. 2A H319 Causes serious eye irritation.

STOT SE 3 H335 May cause respiratory irritation.

**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



GHS06 GHS08

### Signal word

**Danger**

### Hazard statements

H300+H310+H330 Fatal if swallowed, in contact with skin or if inhaled.

H315 Causes skin irritation.

H319 Causes serious eye irritation.

H351 Suspected of causing cancer.

H335 May cause respiratory irritation.

### Precautionary statements

P260 Do not breathe dust/fume/gas/mist/vapours/spray.

P301+P310 IF SWALLOWED: Immediately call a POISON CENTER/ doctor/...

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P320 Specific treatment is urgent (see on this label).

P361 Take off immediately all contaminated clothing.

P405 Store locked up.

P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

### WHMIS classification

D1A - Very 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 3 Health (acute effects) = 3

FIRE 1 Flammability = 1

REACTIVITY 1 Physical Hazard = 1

### Other hazards

#### Results of PBT and vPvB assessment

PBT: Not applicable.

Product name: **Pentachlorophenol**

vPvB: Not applicable. (Contd. of page 1)

**3 Composition/information on ingredients**  
**Chemical characterization: Substances**  
**CAS# Description:**  
87-86-5 Pentachlorophenol  
**Identification number(s):**  
**EC number:** 201-778-6  
**Index number:** 604-002-00-8

**4 First-aid measures**  
**Description of first aid measures**  
**General information**  
Immediately remove any clothing soiled by the product.  
Remove breathing apparatus only after contaminated clothing has been completely removed.  
In case of irregular breathing or respiratory arrest provide artificial respiration.  
**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** Do not induce vomiting; immediately call for medical help.  
**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** Use carbon dioxide, extinguishing powder or foam. Water may be ineffective but may be used for cooling exposed containers.  
**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.  
Ensure adequate ventilation.  
**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.  
Prevent formation of dust.  
**Information about protection against explosions and fires:** No information known.  
**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.  
**Control parameters**  
**Components with limit values that require monitoring at the workplace:**  
**87-86-5 Pentachlorophenol (100.0%)**  

PEL (USA)	Long-term value: 0.5 mg/m³ Skin
REL (USA)	Long-term value: 0.5 mg/m³ Skin
TLV (USA)	Short-term value: NIC-1* mg/m³ Long-term value: (0.5) NIC-0.5* mg/m³ Skin; BEI;*inhalable fraction+vapor

Product name: <b>Pentachlorophenol</b>	
(Contd. of page 2)	
EL (Canada)	Long-term value: 0.5 mg/m <sup>3</sup> Skin
EV (Canada)	Long-term value: 0.5 mg/m <sup>3</sup> Skin
<b>Ingredients with biological limit values:</b>	
<b>87-86-5 Pentachlorophenol (100.0%)</b>	
BEI (USA)	2 mg/g creatinine Medium: urine Time: prior to last shift of workweek Parameter: Total pentachlorophenol (background)  5 mg/L Medium: plasma Time: end of shift Parameter: Free pentachlorophenol (background)
<b>Additional information:</b> No data	
<b>Exposure controls</b> <b>Personal protective equipment</b> <b>General protective and hygienic measures</b> 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. Avoid contact with the eyes and skin. Maintain an ergonomically appropriate working environment. <b>Breathing equipment:</b> Use self-contained respiratory protective device in emergency situations. <b>Protection of hands:</b> 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. <b>Penetration time of glove material (in minutes)</b> Not determined <b>Eye protection:</b> Safety glasses <b>Body protection:</b> Protective work clothing.	
<b>9 Physical and chemical properties</b>	
<b>Information on basic physical and chemical properties</b> <b>General Information</b> <b>Appearance:</b> Form: Solid Color: Yellow or pale brown Odor: Not determined Odor threshold: Not determined.	
pH-value:	Not applicable.
<b>Change in condition</b> Melting point/Melting range: 187-189 °C (369-372 °F) Boiling point/Boiling range: 310 °C (590 °F) 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.	
<b>Danger of explosion:</b> Product does not present an explosion hazard. <b>Explosion limits:</b> Lower: Not determined Upper: Not determined Vapor pressure: Not applicable. Density at 20 °C (68 °F): 1.978 g/cm <sup>3</sup> (16.506 lbs/gal) Relative density: Not determined. Vapor density: Not applicable. Evaporation rate: Not applicable. Solubility in / Miscibility with Water: Slightly soluble Partition coefficient (n-octanol/water): Not determined. Viscosity: dynamic: Not applicable. kinematic: Not applicable. Other information: No further relevant information available.	
<b>10 Stability and reactivity</b> <b>Reactivity</b> No information known. <b>Chemical stability</b> Stable under recommended storage conditions. <b>Thermal decomposition / conditions to be avoided:</b> Decomposition will not occur if used and stored according to specifications. <b>Possibility of hazardous reactions</b> No dangerous reactions known <b>Conditions to avoid</b> No further relevant information available. <b>Incompatible materials:</b> Oxidizing agents <b>Hazardous decomposition products:</b> Carbon monoxide and carbon dioxide	
<b>11 Toxicological information</b> <b>Information on toxicological effects</b> <b>Acute toxicity:</b> Fatal in contact with skin. Fatal if swallowed. Fatal if inhaled. Danger through skin absorption.	
(Contd. on page 4) USA	

**Product name: Pentachlorophenol**

(Contd. of page 3)

LD/LC50 values that are relevant for classification:		
Oral	LD50	380 mg/kg (duck) 294 mg/kg (gerbil) 30 mg/kg (mouse) 27 mg/kg (rat) 200 mg/kg (rabbit)
Dermal	LD50	96 mg/kg (rat)
Inhalative	LC50	225 mg/m3 (mouse) 200 mg/m3 (rat)

**Skin irritation or corrosion:** Causes skin irritation.  
**Eye irritation or corrosion:** Causes serious eye irritation.  
**Sensitization:** No sensitizing effects known.  
**Germ cell mutagenicity:** No effects known.  
**Carcinogenicity:**  
Suspected of causing cancer.  
EPA-L: Likely to produce cancer in humans.  
IARC-2B: Possibly carcinogenic to humans: limited evidence in humans in the absence of sufficient evidence 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.  
**Reproductive toxicity:** No effects known.  
**Specific target organ system toxicity - repeated exposure:** No effects known.  
**Specific target organ system toxicity - single exposure:** May cause respiratory irritation.  
**Aspiration hazard:** No effects known.  
**Other information (about experimental toxicology):**  
Mutagenic effects have been observed on tests with bacteria.  
Mutagenic effects have been observed on tests with laboratory animals.  
Reproductive effects have been observed on tests with laboratory animals.  
Tumorigenic effects have been observed on tests with laboratory animals.  
**Subacute to chronic toxicity:**  
Behavioral - changes in motor activity (specific assay).  
Behavioral - excitement.  
Behavioral - muscle contraction or spasticity.  
Behavioral - convulsions or effect on seizure threshold.  
Behavioral - muscle weakness.  
Skin and Appendages - sweating.  
Nutritional and Gross Metabolic - body temperature increase.  
Nutritional and Gross Metabolic - weight loss or decreased weight gain.  
Vascular - BP elevation not characterized in autonomic section.  
Endocrine - hyperglycemia.  
Endocrine - other changes.  
Endocrine - tumors.  
Endocrine - changes in spleen weight.  
Endocrine - changes in thymus weight.  
Endocrine - adrenal cortex tumors.  
Lungs, Thorax, or Respiration - dyspnea.  
Lungs, Thorax, or Respiration - tumors.  
Kidney, Ureter, Bladder - urine volume increased.  
Immunological Including Allergic - decrease in humoral immune response.  
Liver - changes in liver weight.  
Liver - tumors.  
Blood - changes in erythrocyte (RBC) count.  
Blood - changes in serum composition (e.g. TP, bilirubin, cholesterol).  
Blood - tumors.  
Blood - changes in leukocyte (WBC) count.  
Related to Chronic Data - changes in uterine weight.  
Biochemical - Enzyme inhibition, induction, or change in blood or tissue levels - transaminases.  
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.  
Reproductive - Effects on Embryo or Fetus - fetotoxicity (except death, e.g., stunted fetus).  
Reproductive - Specific Developmental Abnormalities - musculoskeletal system.  
Reproductive - Effects on Newborn - weaning or lactation index (e.g., # alive at weaning per # alive at day 4).  
Reproductive - Effects on Newborn - growth statistics (e.g.%, reduced weight gain).  
Reproductive - Specific Developmental Abnormalities - homeostasis.  
Reproductive - Effects on Embryo or Fetus - fetal death.  
Reproductive - Effects on Newborn - delayed effects.  
Reproductive - Effects on Newborn - other postnatal measures or effects.  
Reproductive - Fertility - post-implantation mortality (e.g. dead/or resorbed implants per total number of implants).  
Tumorigenic - carcinogenic by RTECS criteria.  
Tumorigenic - equivocal tumorigenic agent by RTECS criteria.  
Tumorigenic - neoplastic by RTECS criteria.  
**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.  
**Ecotoxicological 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.

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USA

**Product name: Pentachlorophenol**

**vPvB:** Not applicable.  
**Other adverse effects** No further relevant information available.

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### 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.

### 14 Transport information

**UN-Number**  
**DOT, IMDG, IATA** UN3155

**UN proper shipping name**  
**DOT** Pentachlorophenol  
**IMDG, IATA** PENTACHLOROPHENOL

**Transport hazard class(es)**

**DOT**



**Class** 6.1 Toxic substances.  
**Label** 6.1  
**Class** 6.1 (T2) Toxic substances  
**Label** 6.1  
**IMDG, IATA**



**Class** 6.1 Toxic substances.  
**Label** 6.1

**Packing group** II  
**DOT, IMDG, IATA**

**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":** UN3155, Pentachlorophenol, 6.1, II

### 15 Regulatory information

**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**



GHS06 GHS08

**Signal word** Danger

**Hazard statements**  
H300+H310+H330 Fatal if swallowed, in contact with skin or if inhaled.  
H315 Causes skin irritation.  
H319 Causes serious eye irritation.  
H351 Suspected of causing cancer.  
H335 May cause respiratory irritation.

**Precautionary statements**  
P260 Do not breathe dust/fume/gas/mist/vapours/spray.  
P301+P310 IF SWALLOWED: Immediately call a POISON CENTER/ doctor/...  
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
P320 Specific treatment is urgent (see on this label).  
P361 Take off immediately all contaminated clothing.  
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)**

87-86-5 Pentachlorophenol

**California Proposition 65**

**Prop 65 - Chemicals known to cause cancer**

87-86-5 Pentachlorophenol

**Prop 65 - Developmental toxicity** Substance is not listed.

**Prop 65 - Developmental toxicity, female** Substance is not listed.

**Prop 65 - Developmental toxicity, male** Substance is not listed.

**Information about limitation of use:**

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.

(Contd. on page 6)  
USA



Product name: **Pentachlorophenol**

*(Contd. of page 5)*  
**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.

**16 Other information**  
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 / -  
**Abbreviations and acronyms:**  
RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)  
ICAO: International Civil Aviation Organization  
ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)  
IMDG: International Maritime Code for Dangerous Goods  
DOT: US Department of Transportation  
IATA: International Air Transport Association  
EINECS: European Inventory of Existing Commercial Chemical Substances  
CAS: Chemical Abstracts Service (division of the American Chemical Society)  
HMIS: Hazardous Materials Identification System (USA)  
WHMIS: Workplace Hazardous Materials Information System (Canada)  
LC50: Lethal concentration, 50 percent  
LD50: Lethal dose, 50 percent  
vPvB: very Persistent and very Bioaccumulative  
ACGIH: American Conference of Governmental Industrial Hygienists (USA)  
OSHA: Occupational Safety and Health Administration (USA)  
NTP: National Toxicology Program (USA)  
IARC: International Agency for Research on Cancer  
EPA: Environmental Protection Agency (USA)

USA