



# MATERIAL SAFETY DATA SHEET

according to the Global Harmonized System

Revision Date 02/04/2013

Version 1.1

## SECTION 1. Identification

### Product identifier

Product number 818469  
Product name 2,4,6-Trichlorophenol for synthesis

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

Identified uses Chemical for synthesis

### Details of the supplier of the safety data sheet

Company EMD Millipore Corporation | 290 Concord Road, Billerica, MA 01821,  
United States of America | SDS Phone Support: +1-978-715-1335 |  
General Inquiries: +1-978-751-4321 | Monday to Friday, 9:00 AM to  
4:00 PM Eastern Time (GMT-5)  
  
e-mail: mm\_sds@merckgroup.com

Emergency telephone 613-996-6666 CANUTEC (Canada)  
+1-703-527-3887 CHEMTREC (International)  
24 Hours/day; 7 Days/week

## SECTION 2. Hazards identification

### GHS Classification

Acute toxicity, Category 3, Dermal, H311  
Acute toxicity, Category 4, Oral, H302  
Skin irritation, Category 2, H315  
Eye irritation, Category 2, H319  
Carcinogenicity, Category 2, H351  
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.

### GHS-Labeling

*Hazard pictograms*



*Signal Word*  
Warning

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*Hazard Statements*

H302 Harmful if swallowed.  
H311 Toxic in contact with skin.  
H315 Causes skin irritation.  
H319 Causes serious eye irritation.  
H351 Suspected of causing cancer.  
H410 Very toxic to aquatic life with long lasting effects.

*Precautionary Statements*

P273 Avoid release to the environment.  
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.  
P302 + P352 IF ON SKIN: Wash with plenty of soap and water.  
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
P309 + P310 IF exposed or if you feel unwell: Immediately call a POISON CENTER or doctor/physician.

**Other hazards**

None known.

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**SECTION 3. Composition/information on ingredients**

Formula	C <sub>6</sub> H <sub>3</sub> Cl <sub>3</sub> O (Hill)
CAS-No.	88-06-2
Molar mass	197.44 g/mol

**Hazardous ingredients**

*Chemical Name (Concentration)*

CAS-No.  
2,4,6,-Trichlorophenol (>= 90 % - <= 100 % )  
88-06-2

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**SECTION 4. First aid measures**

**Description of first-aid measures**

*Inhalation*

After inhalation: fresh air. Get medical attention.

*Skin contact*

After skin contact: wash off with plenty of water. Remove contaminated clothing. Call a physician immediately.

*Eye contact*

After eye contact: rinse out with plenty of water. Call in ophthalmologist.

*Ingestion*

After swallowing: immediately make victim drink water (two glasses at most). Consult a physician.

Never give anything by mouth to an unconscious person.

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**Most important symptoms and effects, both acute and delayed**

irritant effects, cardiovascular disorders, CNS disorders

**Indication of any immediate medical attention and special treatment needed**

No information available.

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**SECTION 5. Fire-fighting measures**

**Extinguishing media**

*Suitable extinguishing media*

Water, Carbon dioxide (CO<sub>2</sub>), Foam, Dry powder

*Unsuitable extinguishing media*

For this substance/mixture no limitations of extinguishing agents are given.

**Special hazards arising from the substance or mixture**

Combustible material, Vapors are heavier than air and may spread along floors.

Forms explosive mixtures with air on intense heating.

Development of hazardous combustion gases or vapors possible in the event of fire.

Fire may cause evolution of:

Hydrogen chloride gas

**Advice for firefighters**

*Special protective equipment for fire-fighters*

Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.

*Further information*

Suppress (knock down) gases/vapors/mists with a water spray jet. Prevent fire extinguishing water from contaminating surface water or the ground water system.

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**SECTION 6. Accidental release measures**

**Personal precautions, protective equipment and emergency procedures**

Advice for non-emergency personnel: Avoid substance contact. Avoid inhalation of dusts. Ensure adequate ventilation. Evacuate the danger area, observe emergency procedures, consult an expert.

Advice for emergency responders: Protective equipment see section 8.

**Environmental precautions**

Do not empty into drains.

**Methods and materials for containment and cleaning up**

Cover drains. Collect, bind, and pump off spills.

Observe possible material restrictions (see sections 7 and 10).

Take up dry. Dispose of properly. Clean up affected area. Avoid generation of dusts.

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**SECTION 7. Handling and storage**

**Precautions for safe handling**

Observe label precautions.

Work under hood. Do not inhale substance/mixture.

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**Conditions for safe storage, including any incompatibilities**

Tightly closed. Dry.

Store at +15°C to +25°C (+59°F to +77°F).

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**SECTION 8. Exposure controls/personal protection**

**Exposure limit(s)**

Contains no substances with occupational exposure limit values.

**Engineering measures**

Technical measures and appropriate working operations should be given priority over the use of personal protective equipment.

**Individual protection measures**

Protective clothing should be selected specifically for the workplace, depending on concentration and quantity of the hazardous substances handled. The chemical resistance of the protective equipment should be inquired at the respective supplier.

*Hygiene measures*

Immediately change contaminated clothing. Apply skin- protective barrier cream. Wash hands and face after working with substance. Work under hood. Do not inhale substance/mixture.

*Eye/face protection*

Safety glasses

*Hand protection*

Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.

*Other protective equipment:*

protective clothing

*Respiratory protection*

required when dusts are generated.

Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

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**SECTION 9. Physical and chemical properties**

Physical state	powder, finocrystalline
Color	gray
Odor	unpleasant
Odor Threshold	No information available.
pH	No information available.
Melting point	65 - 68 °C

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Boiling point/boiling range	471 - 475 °F (244 - 246 °C) at 1,013 hPa
Flash point	210 °F (99 °C) Method: c.c.
Evaporation rate	No information available.
Flammability (solid, gas)	No information available.
Lower explosion limit	No information available.
Upper explosion limit	No information available.
Vapor pressure	13.3 hPa at 171 °F (77 °C)  0.035 hPa at 68 °F (20 °C)
Relative vapor density	6.82
Relative density	1.675 g/cm <sup>3</sup> at 77 °F (25 °C)
Water solubility	0.8 g/l at 77 °F (25 °C)
Partition coefficient: n-octanol/water	log Pow: 3.69 (experimental) A remarkable bioaccumulation potential is expected (log Po/w >3). (Lit.)
Autoignition temperature	No information available.
Decomposition temperature	No information available.
Viscosity, dynamic	No information available.
Explosive properties	Not classified as explosive.

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## SECTION 10. Stability and reactivity

### Reactivity

Forms explosive mixtures with air on intense heating.  
The following applies in general to flammable organic substances and mixtures: in correspondingly fine distribution, when whirled up a dust explosion potential may generally be assumed.

### Chemical stability

The product is chemically stable under standard ambient conditions (room temperature) .

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**Possibility of hazardous reactions**

Violent reactions possible with:

Strong oxidizing agents, acid halides, Acid anhydrides

**Conditions to avoid**

Strong heating.

A range from approx. 15 Kelvin below the flash point is to be rated as critical.

**Incompatible materials**

no information available

**Hazardous decomposition products**

in the event of fire: See section 5.

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**SECTION 11. Toxicological information**

**Information on toxicological effects**

*Likely route of exposure*

Eye contact, Skin contact, Ingestion

*Acute oral toxicity*

LD50 rat: 887 mg/kg

OECD Test Guideline 401

Symptoms: Irritations of mucous membranes in the mouth, pharynx, oesophagus and gastrointestinal tract.

absorption

*Acute inhalation toxicity*

Symptoms: Possible damages:, mucosal irritations

*Acute dermal toxicity*

LD50 rat: 400 - 2,000 mg/kg

OECD Test Guideline 402

absorption

*Skin irritation*

rabbit

Result: slight irritation  
(RTECS)

Causes skin irritation.

*Eye irritation*

rabbit

Result: Eye irritation  
(RTECS)

(Regulation (EC) No 1272/2008, Annex VI)

Causes serious eye irritation.

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*CMR effects*

Carcinogenicity:  
Suspected of causing cancer.

*Specific target organ systemic toxicity - single exposure*

The substance or mixture is not classified as specific target organ toxicant, single exposure.

*Specific target organ systemic toxicity - repeated exposure*

The substance or mixture is not classified as specific target organ toxicant, repeated exposure.

*Aspiration hazard*

Regarding the available data the classification criteria are not fulfilled.

**Carcinogenicity**

IARC	Group 2B: Possibly carcinogenic to humans 2,4,6,-Trichlorophenol 88-06-2
OSHA	No ingredient of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.
NTP	Anticipated carcinogen. 2,4,6,-Trichlorophenol 88-06-2
ACGIH	No ingredient of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

**Further information**

After absorption of toxic quantities:

CNS disorders  
cardiovascular disorders

Further data:

Handle in accordance with good industrial hygiene and safety practice.

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**SECTION 12. Ecological information**

**Ecotoxicity**

*Toxicity to fish*

LC50 *Lepomis macrochirus* (Bluegill sunfish): 0.41 mg/l; 96 h (ECOTOX Database)

*Toxicity to daphnia and other aquatic invertebrates*

EC50 *Daphnia magna* (Water flea): 3.3 mg/l; 48 h (ECOTOX Database)

**Persistence and degradability**

No information available.

**Bioaccumulative potential**

*Partition coefficient: n-octanol/water*

log Pow: 3.69

(experimental)

A remarkable bioaccumulation potential is expected (log Po/w >3). (Lit.)

**Mobility in soil**

No information available.

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**Other adverse effects**

*Additional ecological information*

Discharge into the environment must be avoided.

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**SECTION 13. Disposal considerations**

The information presented only applies to the material as supplied. The identification based on characteristic(s) or listing may not apply if the material has been used or otherwise contaminated. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste identification and disposal methods in compliance with applicable regulations. Disposal should be in accordance with applicable regional, national and local laws and regulations.

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**SECTION 14. Transport information**

**Land transport (DOT)**

UN number UN 2020  
Proper shipping name CHLOROPHENOLS, SOLID  
Class 6.1  
Packing group III  
Environmentally hazardous --

**Air transport (IATA)**

UN number UN 2020  
Proper shipping name CHLOROPHENOLS, SOLID  
Class 6.1  
Packing group III  
Environmentally hazardous --  
Special precautions for user no

**Sea transport (IMDG)**

UN number UN 2020  
Proper shipping name CHLOROPHENOLS, SOLID  
Class 6.1  
Packing group III  
Environmentally hazardous --  
Special precautions for user yes  
EmS F-A S-A

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**SECTION 15. Regulatory information**

**United States of America**

**Canada**

**WHMIS Classification**

D1B Toxic Material Causing Immediate and Serious Toxic Effects  
D2A Very Toxic Material Causing Other Toxic Effects  
D2B Toxic Material Causing Other Toxic Effects



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Toxic by skin absorption, Carcinogen, Skin irritant, Eye irritant

This product has been classified according to the hazard criteria of the CPR and the MSDS contains all of the information required by the CPR.

**Notification status**

TSCA: On TSCA Inventory

DSL: This product contains one or several components listed in the Canadian NDSL.  
*Ingredients*  
2,4,6,-Trichlorophenol

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**SECTION 16. Other information**

**Training advice**

Provide adequate information, instruction and training for operators.

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

H302 Harmful if swallowed.  
H311 Toxic in contact with skin.  
H315 Causes skin irritation.  
H319 Causes serious eye irritation.  
H351 Suspected of causing cancer.  
H400 Very toxic to aquatic life.  
H410 Very toxic to aquatic life with long lasting effects.

**Key or legend to abbreviations and acronyms used in the safety data sheet**

Used abbreviations and acronyms can be looked up at [www.wikipedia.org](http://www.wikipedia.org).

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The information contained herein is based on the present state of our knowledge. It characterizes the product with regard to appropriate safety precautions. It does not represent a warranty of any product properties and we assume no liability for any loss or injury which may result from the use of this information. Users should conduct their own investigations to determine the suitability of the information.

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