

1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1 Product identifiers

Product name: **CHLOROFORM**

CAS-No.: **67-66-3**

Product Number: **F76396**

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 : Philip Harris Ltd., 2 Gregory Street, Hyde, Cheshire, SK14 4HR,

UNITED KINGDOM

Telephone: +44 (0)845 1200 506 Fax: +44 (0)161 367 2140

Email: enquiries@philipharris.co.uk

1.4 Emergency telephone number

Emergency Phone #: **+44 (0)845 1200 506**

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

According to Regulation (EC) No1272/2008: Acute toxicity, Oral (Category 4), Skin irritation (Category 2), Carcinogenicity (Category 2), Specific target organ toxicity - repeated exposure (Category 2)

According to European Directive 67/548/EEC as amended: Limited evidence of a carcinogenic effect. Harmful if swallowed. Harmful: danger of serious damage to health by prolonged exposure through inhalation and if swallowed. Irritating to skin.

2.2 Label elements

Pictogram



Signal word

Warning

Hazard statement(s): H302 Harmful if swallowed. H315 Causes skin irritation. H351 Suspected of causing cancer. H373 May cause damage to organs through prolonged or repeated exposure.

Precautionary statement(s): P281 Use personal protective equipment as required.

According to European Directive 67/548/EEC as amended.

Hazard symbol(s)



R-phrases(s): R22 Harmful if swallowed. R38 Irritating to skin. R40 Limited evidence of a carcinogenic effect. R48/20/22 Harmful: danger of serious damage to health by prolonged exposure through inhalation and if swallowed.

S-phrases(s): S36/37 Wear suitable protective clothing and gloves.

2.3 Other hazards – no data available.

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Formula: **CHCl₃**

Molecular Weight: **119.38**

Chloroform (Synonyms : Trichloromethane; Methylidyne trichloride)

CAS-No.: **67-66-3**

EC-No.: **200-663-8**

Index-No.: **602-006-00-4**

2-Methyl-2-butene

CAS-No.: **513-35-9**

EC-No.: **208-156-3**

3.2 Mixtures

Component	Classification	Concentration
Chloroform	-	>= 99.5 %
2-Methyl-2-butene	-	>= 0.001 - <= 0.015 %

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.

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

In case of skin contact: Wash off with soap and plenty of water.

In case of eye contact: Rinse thoroughly with plenty of water for at least 15 minutes.

If swallowed: Never give anything by mouth to an unconscious person. Rinse mouth with water.

4.2 Most important symptoms and effects, both acute and delayed: Vomiting, Gastrointestinal disturbance, Exposure to and/or consumption of alcohol may increase toxic effects.

4.3 Indication of immediate medical attention and special treatment needed: no data available

5. FIRE-FIGHTING 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, Phosgene, Chlorine, Hydrogen chloride gas

5.3 Precautions for fire-fighters: 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 breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas.

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: Soak up with inert absorbent material and dispose of as hazardous waste. 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 inhalation of vapour or mist. Normal measures for preventive fire protection.

7.2 Conditions for safe storage, including any incompatibilities: Store in cool place. Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

7.3 Specific end uses: no data available.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Components with workplace control parameters

Component	CAS No.	Value	Control Parameters	Update
Chloroform	67-66-3	TWA	2ppm 9.9mg/m ³	UK. EH40 WEL ¹
Chloroform	67-66-3	TWA	2ppm 10mg/m ³	Europe. ²

¹Workplace Exposure Limits. Remarks Can be absorbed through skin. The assigned substances are those for which there are concerns that dermal absorption will lead to systemic toxicity. Where no specific short-term exposure limit is listed, a figure three times the long-term exposure should be used.

²Commission Directive 2000/39/EC establishing a first list of indicative occupational exposure limit values Identifies the possibility of significant uptake through the skin Indicative

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: Face shield and safety glasses 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. The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it.

Body Protection: Complete suit protecting against chemicals, 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 respirator with multi-purpose combination (US) or type AXBEK (EN 14387) 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).

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

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|--|----------------------|-------------------------------------|
| a) Appearance: | Form: Liquid | Colour: Colourless |
| b) Odour: | no data available | |
| c) Odour Threshold: | no data available | |
| d) pH: | no data available | |
| e) Melting/freezing point: | -63 °C | Melting point/range: 60.5 - 61.5 °C |
| f) Initial boiling point and boiling range: | no data available | |
| g) Flash point: | no data available | |
| h) Evaporation rate: | no data available | |
| i) Flammability (solid, gas): | no data available | |
| j) Upper/lower flammability or explosive limits: | no data available | |
| k) Vapour pressure: | 213.3 hPa at 20.0 °C | |
| l) Vapour density: | no data available | |
| m) Relative density: | 1.492 g/mL at 25 °C | |
| n) Water solubility: | no data available | |
| o) Partition coefficient: n-octanol/water: | 1.97 | |
| p) Autoignition temperature: | no data available | |
| q) Decomposition temperature: | no data available | |
| r) Viscosity: | no data available | |
| s) Explosive properties: | no data available | |

t) Oxidizing properties: no data available
9.2 Other safety information: Surface tension 27.1 mN/m at 20.0 °C

10. STABILITY AND REACTIVITY

10.1 Reactivity: no data available
10.2 Chemical stability: Contains the following stabiliser(s): 2-Methyl-2-butene (≥ 0.001 - ≤ 0.015 %)
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, Magnesium, Sodium/sodium oxides, Lithium
10.6 Hazardous decomposition products: Other decomposition products - no data available

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity: LD50 Oral - rat - 695.0 mg/kg

Remarks: Behavioural: Change in motor activity (specific assay). Behavioral: Ataxia. Lungs, Thorax, or Respiration: Respiratory stimulation.

LC50 Inhalation - rat - 4 h - 47,702 mg/m³

LD50 Dermal - rabbit - > 20,000 mg/kg

Skin corrosion/irritation: Skin - rabbit - Mild skin irritation - 24 h

Serious eye damage/eye irritation: Eyes - rabbit - Irritating to eyes. - 24 h

Respiratory or skin sensitization: no data available

Germ cell mutagenicity: Laboratory experiments have shown mutagenic effects.

Carcinogenicity: Carcinogenicity - rat – Oral Tumorigenic: Carcinogenic by RTECS criteria. Leukaemia. This product is or contains a component that has been reported to be probably carcinogenic based on its IARC, OSHA, ACGIH, NTP, or EPA classification. The National Cancer Institute (NCI) has found clear evidence for carcinogenicity. Limited evidence of carcinogenicity in animal studies IARC: 2B - Group 2B: Possibly carcinogenic to humans (Chloroform)

Reproductive toxicity: no data available

Specific target organ toxicity - single exposure: no data available

Specific target organ toxicity - repeated exposure: May cause damage to organs through prolonged or repeated exposure.

Aspiration hazard: no data available

Potential health effects

Inhalation Harmful if inhaled. Causes respiratory tract irritation.

Ingestion Harmful if swallowed.

Skin Harmful if absorbed through skin. Causes skin irritation.

Eyes Causes serious eye irritation.

Signs and Symptoms of Exposure: Vomiting, Gastrointestinal disturbance, Exposure to and/or consumption of alcohol may increase toxic effects.

Additional Information: RTECS: FS9100000

12. ECOLOGICAL INFORMATION

12.1 Toxicity: Toxicity to fish LC50 - *Leuciscus idus* (Golden orfe) - 162 mg/l - 48 h

LC100 - *Leuciscus idus* (Golden orfe) - 220 mg/l - 48 h

LC50 - other fish - 97 mg/l - 96 h

LC50 - *Danio rerio* (zebra fish) - 121 mg/l - 96 h

NOEC - *Oryzias latipes* - 122 mg/l - 10 d

NOEC - *Oncorhynchus mykiss* (rainbow trout) - 24 mg/l - 96 h

Toxicity to daphnia and other aquatic invertebrates.

EC50 - *Daphnia magna* (Water flea) - 79.00 mg/l - 24 h

Immobilization EC50 - *Daphnia magna* (Water flea) - 51.6 mg/l - 48 h

NOEC - *Daphnia magna* (Water flea) - 120 mg/l - 11 d

Toxicity to algae EC50 - No information available. - 500.00 mg/l - 24 h

12.2 Persistence and degradability: no data available

12.3 Bioaccumulative potential: Bioaccumulation *Lepomis macrochirus* (Bluegill) - 14 d -0.11 mg/l

Bioconcentration factor (BCF): 6

12.4 Mobility in soil: no data available

12.5 Results of PBT and vPvB assessment: no data available

12.6 Other adverse effects: Harmful to aquatic life.

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.

Contaminated packaging: Dispose of as unused product.

14. TRANSPORT INFORMATION

14.1 UN-Number

ADR/RID:	1888	IMDG:	1888	IATA:	1888
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14.2 UN proper shipping name

ADR/RID:	CHLOROFORM
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IMDG:	CHLOROFORM
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IATA:	CHLOROFORM
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14.3 Transport hazard class(es)

ADR/RID:	6.1	IMDG:	6.1	IATA:	6.1
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14.4 Packaging group

ADR/RID:	III	IMDG:	III	IATA:	III
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14.5 Environmental hazards

ADR/RID: no IMDG Marine pollutant: no IATA: no

14.6 Special precautions for users

no data available

15. REGULATORY INFORMATION

This safety datasheet complies with the requirements of Regulation (EC) No. 1907/2006.

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture: no data available

15.2 Chemical Safety Assessment: no data available

16. OTHER INFORMATION

no data available