

Safety data sheet

according to 1907/2006/EC, Article 31

Printing date 01.11.2012

Revision: 31.10.2012

1 Identification of the substance/mixture and of the company/undertaking

· **Product identifier**

· **Trade name:** Chloroform

· **Article number:** 40-1500-10

· **CAS Number:**

67-66-3

· **EC number:**

200-663-8

· **Index number:**

602-006-00-4

· **Registration number** 01-2119486657-20

· **Relevant identified uses of the substance or mixture and uses advised against**

Use as an intermediate for the production of other chemicals such as organic fine chemicals; Use as a solvent; Use in professional laboratories; Manufacture of HCFC 22; Use as intermediate.

USES ADVISED AGAINST

Information on uses advised against:

- Uses by consumers advised against
- Shall not be placed on the market, or used, in concentrations equal to or greater than 0,1 % by weight, where it is intended for supply to the general public and/or for diffusive applications such as in surface cleaning and cleaning fabrics.
- Use banned for industrial chemical for public use
- Chloroform is prohibited as cosmetic ingredient

· **Sector of Use**

SU0 Other

SU8 Manufacture of bulk, large scale chemicals (including petroleum products)

SU9 Manufacture of fine chemicals

SU10 Formulation [mixing] of preparations and/or re-packaging (excluding alloys)

SU24 Scientific research and development

· **Product category**

PC19 Intermediate

PC21 Laboratory chemicals

· **Process category**

PROC0: Other

PROC1 Use in closed process, no likelihood of exposure

PROC2 Use in closed, continuous process with occasional controlled exposure

PROC3 Use in closed batch process (synthesis or formulation)

PROC7 Industrial spraying

PROC8a Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities

PROC8b Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities

PROC9 Transfer of substance or preparation into small containers (dedicated filling line, including weighing)

PROC15 Use as laboratory reagent

· **Environmental release category**

ERC1 Manufacture of substances

ERC4 Industrial use of processing aids in processes and products, not becoming part of articles

ERC6a Industrial use resulting in manufacture of another substance (use of intermediates)

· **Application of the substance / the preparation**

The substance has many industrial and professional applications.

· **Details of the supplier of the safety data sheet**

· **Manufacturer/Supplier:**

Severn Biotech Ltd.

Unit 2,

Park Lane,

Kidderminster,

Worcestershire.

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DY11 6TJ
 UK
 Tel: 0044 1562 825286
 Fax: 0044 1562 825284
 email: info@severnbiotech.com

- **Further information obtainable from:** Product safety department.
- **Emergency telephone number:** Tel: 0044 1562 825286 (not 24 hours)

2 Hazards identification

- **Classification of the substance or mixture**
- **Classification according to Regulation (EC) No 1272/2008**



GHS08 health hazard

Carc. 2 H351 Suspected of causing cancer.
 STOT RE 2 H373 May cause damage to organs through prolonged or repeated exposure.



GHS07

Acute Tox. 4 H302 Harmful if swallowed.
 Skin Irrit. 2 H315 Causes skin irritation.

- **Classification according to Directive 67/548/EEC or Directive 1999/45/EC**



Xn; Harmful

R22-40-48/20/22: Harmful if swallowed. Limited evidence of a carcinogenic effect. Harmful: danger of serious damage to health by prolonged exposure through inhalation and if swallowed.



Xi; Irritant

R38: Irritating to skin.

Carc. Cat. 3

- **Information concerning particular hazards for human and environment:** Not applicable.

- **Label elements**

- **Labelling according to Regulation (EC) No 1272/2008**

The substance is classified and labelled according to the CLP regulation.

- **Hazard pictograms** GHS07, GHS08

- **Signal word** Warning

- **Hazard statements**

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 statements**

P280 Wear protective gloves/protective clothing/eye protection/face protection.

P270 Do not eat, drink or smoke when using this product.

P260 Do not breathe mist/vapours/spray.

P301+P312 IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.

P308+P313 IF exposed or concerned: Get medical advice/attention.

P302+P352 IF ON SKIN: Wash with plenty of soap and water.

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- **Other hazards**
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.

3 Composition/information on ingredients

- **Chemical characterization: Substances**
- **CAS No. Description**
67-66-3 trichloromethane
- **Identification number(s)**
- **EC number:** 200-663-8
- **Index number:** 602-006-00-4

4 First aid measures

- **Description of first aid measures**
- **General information:**
Immediately remove any clothing soiled by the product.
Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.
Protection of first-aiders: If entering a saturated atmosphere, wear a self contained breathing apparatus.
Protective suit.
- **After inhalation:**
Supply fresh air; consult doctor in case of complaints.
In case of unconsciousness place patient stably in side position for transportation.
- **After skin contact:**
Immediately wash with water and soap and rinse thoroughly.
If skin irritation continues, consult a doctor.
- **After eye contact:**
Check for and remove any contact lenses.
Rinse opened eye for several minutes under running water. Then consult a doctor.
- **After swallowing:**
DO NOT DELAY!
Wash mouth out with water
Do not induce vomiting; call for medical help immediately.
Hospitalise.
- **Information for doctor:**
Do not administer catecholamines (because of the cardiac effect caused by the product).
- **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 Firefighting measures

- **Extinguishing media**
- **Suitable extinguishing agents:** Use fire extinguishing methods suitable to surrounding conditions.
- **For safety reasons unsuitable extinguishing agents:** Water with full jet
- **Special hazards arising from the substance or mixture**
At high temperature, thermal decomposition giving toxic and corrosive products : Hydrogen chloride gas, Phosgene

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- **Advice for firefighters**
- **Protective equipment:**
 - Do not inhale explosion gases or combustion gases.
 - Wear self-contained respiratory protective device.
 - Wear fully protective suit.

6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures**
 - Ensure adequate ventilation
 - Wear protective equipment. Keep unprotected persons away.
 - Keep ignition sources away - no smoking.
 - Use respiratory protective device against the effects of fumes/dust/aerosol.
 - Remove persons from danger area.
- **Environmental precautions:**
 - Do not allow product to reach sewage system or any water course.
 - Do not allow to penetrate the ground/soil.
- **Methods and material for containment and cleaning up:**
 - Send for recovery or disposal in suitable receptacles.
 - Recovery: Pump into a labelled inert emergency tank. Shovel into suitable container for disposal.

Small quantities : Soak up with inert absorbent material (Vermiculite, Clean sand). After cleaning, flush away traces with water.
- **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**
 - Prevent formation of aerosols.
 - Ensure good ventilation/exhaustion at the workplace.
 - Keep away from heat and direct sunlight.
 - Restrict the quantity stored at the work place.
 - Avoid direct contact (skin contact, ingestion and/or inhalation of fume/mist/dust) with the product.
 - Safety showers and eye wash facilities should be available at the work area.
 - Strictly limit the quantities of product in the work area to those which are absolutely necessary for the work in hand.

Risk of phosgene generation:

 - Keep ignition sources away, do NOT smoke in the work area.
 - Welding operations must only permitted only under supervision.
 - No naked flames or uv light sources allowed in the work area.
- **Information about fire - and explosion protection:**
 - Keep ignition sources away - Do not smoke.
 - Protect from heat.
 - Keep respiratory protective device available.
- **Conditions for safe storage, including any incompatibilities**
- **Storage:**
- **Requirements to be met by storerooms and receptacles:**
 - Packaging material:
 - Recommended: Iron, Tinned or plated iron

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To be avoided: Light metals and alloys in the presence of humidity, including parts of the installation in contact with the product

· **Information about storage in one common storage facility:**

Store away from oxidizing agents.

Store away from metals.

Do not store together with acids.

· **Further information about storage conditions:**

Store in a banded area.

Store in cool, dry conditions in well sealed receptacles.

Protect from heat and direct sunlight.

· **Specific end use(s)** No further relevant information available.

8 Exposure controls/personal protection

· **Additional information about design of technical facilities:** No further data; see item 7.

· **Control parameters**

· **Ingredients with limit values that require monitoring at the workplace:**

67-66-3 Chloroform

WEL	Long-term value: 9.9 mg/m ³ , 2 ppm
Sk	

· **DNELs**

WORKERS

Acute / short-term exposure - systemic effects

Inhalation DN(M)EL

- DNEL (Derived No Effect Level): 333 mg/m³

Long-term exposure - systemic effects

Dermal DN(M)EL

- DNEL (Derived No Effect Level): 0.94 mg/kg bw/day

Inhalation DN(M)EL

DNEL (Derived No Effect Level): 2.5 mg/m³

Long-term exposure - local effects

Inhalation DN(M)EL

- DNEL (Derived No Effect Level): 2.5 mg/m³

GENERAL POPULATION

Long-term exposure - systemic effects

Inhalation DN(M)EL

- DNEL (Derived No Effect Level): 0.18 mg/m³

· **PNECs**

PNEC aqua (freshwater): 0.146 mg/L

PNEC aqua (marine water): 0.015 mg/L

PNEC aqua (intermittent releases): 0.133 mg/L

PNEC STP: 0.048 mg/L

PNEC sediment (freshwater): 0.45 mg/kg sediment dw

PNEC sediment (marine water): 0.09 mg/kg sediment dw

PNEC soil: 0.56 mg/kg soil dw

PNEC oral: No potential for bioaccumulation

· **Additional information:** The lists valid during the making were used as basis.

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- **Exposure controls**

- **Personal protective equipment:**

Select PPE appropriate for the operations taking place taking into account the product properties.

- **General protective and hygienic measures:**

Keep away from foodstuffs, beverages and feed.

Immediately remove all soiled and contaminated clothing

Wash hands before breaks and at the end of work.

Avoid contact with the eyes and skin.

Take note of assigned Workplace Exposure Limits.

Ensure that eyewash stations and safety showers are close to the workstation location.

Depending on the degree of exposure, periodic medical examination is suggested.

Pregnant women should strictly avoid inhalation or skin contact.

A safe system of work must be formulated and followed to ensure that workers who may be pregnant or breastfeeding do not come into direct contact with the product.

A safe system of work must be formulated and followed to ensure safe working with this product.

Relevant workers must receive suitable and sufficient training and supervision.

- **Respiratory protection:**

In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use self-contained respiratory protective device.

Respiratory protection:

- Low concentrations or short activity: Power assisted full mask (Respiratory protection complying with EN 141) Recommended Filter type: AXP3.

- High concentrations or prolonged activity: Self contained Breathing Apparatus

- **Protection of hands:**



Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

- **Material of gloves**

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.

- Splash contact, intermittent and prolonged : Gloves, Fluorinated rubber, Glove thickness: 0,5 mm

- **Penetration time of glove material**

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

- **Eye protection:**

Safety glasses

Goggles recommended during refilling

- **Body protection:**

Skin and body protection:

- At the workplace: impervious clothing,

- Intervention at incident: Complete chemical protection suit

9 Physical and chemical properties

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

- **General Information**

- **Appearance:**

Form:	Fluid
Colour:	Colourless

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· Odour:	Pleasant
· Odour threshold:	Not determined.
· pH-value:	Not determined.
· Change in condition	
Melting point/Melting range:	-63 °C
Boiling point/Boiling range:	62 °C
· Flash point:	Cannot support combustion
· Flammability (solid, gaseous):	Not applicable.
· Ignition temperature:	
Decomposition temperature:	Not determined.
· Self-igniting:	Not determined.
· Danger of explosion:	Product does not present an explosion hazard.
· Explosion limits:	
Lower:	Not determined.
Upper:	Not determined.
· Vapour pressure at 20 °C:	210 hPa
· Density at 20 °C:	1.48 g/cm ³
· Relative density	Not determined.
· Vapour density	Not determined.
· Evaporation rate	Not determined.
· Solubility in / Miscibility with water at 20 °C:	8 g/l
· Partition coefficient (n-octanol/water):	1.97 log POW
· Viscosity:	
Dynamic at 20 °C:	0.56 mPas
Kinematic:	Not determined.
· Other information	No further relevant information available.

10 Stability and reactivity

- **Reactivity**
- **Chemical stability**
- **Thermal decomposition / conditions to be avoided:**
At high temperature, thermal decomposition giving toxic and corrosive products : Hydrogen chloride gas, Phosgene
- **Possibility of hazardous reactions**
Possible formation of explosive compounds or those sensitive to impact in contact with strong acids, oxygen or oxidising agents.
- **Conditions to avoid**
Heat, flames and sparks.
Exposure to visible light and to ultra violet light.
Exposure to moisture.
- **Incompatible materials:**
Strong acids, Oxygen, oxidizing agents (possible formation of :explosive compounds or those sensitive to impact).
Finely divided metals, Aluminium, Magnesium, Zinc, Titanium (risk of explosion).
Oxygen.

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· **Hazardous decomposition products:**

At high temperature, thermal decomposition giving toxic and corrosive products : Hydrogen chloride gas, Phosgene

11 Toxicological information

· **Information on toxicological effects**

· **Acute toxicity:**

· **LD/LC50 values relevant for classification:**

Oral	LD50	1100 mg/kg (rat)
Dermal	LD50	>4000 mg/kg (rat)

· **Primary irritant effect:**

· **on the skin:** Irritant to skin and mucous membranes.

· **on the eye:** No irritating effect.

· **Sensitization:** No sensitizing effects known.

· **Additional toxicological information:**

Depending on the degree of exposure, periodic medical examination is suggested.

ROUTES OF ENTRY: The main route of exposure is inhalation but in some cases poisoning is due to ingestion; skin absorption is limited.

NO smoking in or near the work area - breakdown products such as phosgene may be produced in the burning area of the tobacco.

· **CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)**

Carc. 2

12 Ecological information

· **Toxicity**

· **Aquatic toxicity:**

EC50	353 mg/kg (daphnia)
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· **Persistence and degradability** No further relevant information available.

· **Behaviour in environmental systems:**

· **Bioaccumulative potential** Product is not expected to bioaccumulate.

· **Mobility in soil** No further relevant information available.

· **Additional ecological information:**

· **General notes:**

Water hazard class 3 (German Regulation) (Assessment by list): extremely hazardous for water

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.

· **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**

Must not be disposed together with household garbage. Do not allow product to reach sewage system.

Contact waste processors for recycling information.

Used, degraded or contaminated product may be classified as hazardous waste. Anyone classifying hazardous waste and determining its fate must be qualified in accordance with state and international legislation.

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- **European waste catalogue**

Waste key numbers in accordance with the European Waste catalogue (EWC) are origin-referred defined. Since this product is used in several industries, no waste key can be provided by the supplier. The waste key number should be determined in arrangement with your waste disposal partner or the responsible authority.

- **Uncleaned packaging:**


- **Recommendation:**

Disposal must be made according to official regulations.

Container remains hazardous when empty. Continue to observe all precautions.

Do not mix with other waste streams.

14 Transport information

<ul style="list-style-type: none"> · UN-Number · ADR, IMDG, IATA 	UN1888
<ul style="list-style-type: none"> · UN proper shipping name · ADR · IMDG, IATA 	1888 CHLOROFORM CHLOROFORM
<ul style="list-style-type: none"> · Transport hazard class(es) · ADR, IMDG, IATA 	<div style="text-align: center;">  </div>
<ul style="list-style-type: none"> · Class · Label 	6.1 Toxic substances. 6.1
<ul style="list-style-type: none"> · Packing group · ADR, IMDG, IATA 	III
<ul style="list-style-type: none"> · Environmental hazards: · Marine pollutant: 	No
<ul style="list-style-type: none"> · Special precautions for user · Danger code (Kemler): · EMS Number: · Segregation groups 	Warning: Toxic substances. 60 F-A,S-A Liquid halogenated hydrocarbons
<ul style="list-style-type: none"> · Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code 	Not applicable.
<ul style="list-style-type: none"> · Transport/Additional information: 	
<ul style="list-style-type: none"> · ADR · Limited quantities (LQ) · Transport category · Tunnel restriction code 	5L 2 E
<ul style="list-style-type: none"> · UN "Model Regulation": 	UN1888, CHLOROFORM, 6.1, III

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15 Regulatory information

- **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

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