

# Safety Data Sheet

acc. to OSHA HCS

Printing date 03/19/2019

Reviewed on 03/19/2019

## 1 Identification

- **Product identifier**
- **Trade name:** CHLOROFORM, REAGENT ACS
- **Article number:** 12540, 12541, 12550, 12551
- **CAS Number:**  
67-66-3
- **EC number:**  
200-663-8
- **Index number:**  
602-006-00-4
- **Application of the substance / the mixture** Laboratory chemicals
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**  
Electron Microscopy Sciences  
1560 Industry Road  
USA-Hatfield, PA 19440  
Tel: 215-412-8400 Fax: 215-412-8450  
email: sgkcek@aol.com  
www.emsdiasum.com
- **Information department:** Product safety department
- **Emergency telephone number:**  
ChemTrec 1-800-424-9300 Contract CCN7661  
1-703-527-3887

## 2 Hazard(s) identification

- **Classification of the substance or mixture**



GHS02 Flame

Flam. Liq. 2 H225 Highly flammable liquid and vapor.

.....



GHS06 Skull and crossbones

Acute Tox. 2 H310 Fatal in contact with skin.

Acute Tox. 3 H331 Toxic if inhaled.

.....



GHS08 Health hazard

Carc. 2 H351 Suspected of causing cancer.

Repr. 2 H361 Suspected of damaging fertility or the unborn child.

STOT RE 1 H372 Causes damage to organs through prolonged or repeated exposure.

.....



GHS07

Acute Tox. 4 H302 Harmful if swallowed.

Skin Irrit. 2 H315 Causes skin irritation.

(Contd. on page 2)

US

# Safety Data Sheet

acc. to OSHA HCS

Printing date 03/19/2019

Reviewed on 03/19/2019

**Trade name: CHLOROFORM, REAGENT ACS**

(Contd. of page 1)

*Eye Irrit. 2A H319 Causes serious eye irritation.*

· **Label elements**

· **GHS label elements** *The substance is classified and labeled according to the Globally Harmonized System (GHS).*

· **Hazard pictograms**



GHS02   GHS06   GHS07   GHS08

· **Signal word** *Danger*

· **Hazard statements**

*Highly flammable liquid and vapor.*

*Harmful if swallowed.*

*Fatal in contact with skin.*

*Toxic if inhaled.*

*Causes skin irritation.*

*Causes serious eye irritation.*

*Suspected of causing cancer.*

*Suspected of damaging fertility or the unborn child.*

*Causes damage to organs through prolonged or repeated exposure.*

· **Precautionary statements**

*Obtain special instructions before use.*

*Do not handle until all safety precautions have been read and understood.*

*Keep away from heat/sparks/open flames/hot surfaces. - No smoking.*

*Ground/bond container and receiving equipment.*

*Use explosion-proof electrical/ventilating/lighting/equipment.*

*Use only non-sparking tools.*

*Take precautionary measures against static discharge.*

*Do not breathe dust/fume/gas/mist/vapors/spray.*

*Do not get in eyes, on skin, or on clothing.*

*Wash thoroughly after handling.*

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

*Use only outdoors or in a well-ventilated area.*

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

*If swallowed: Call a poison center/doctor if you feel unwell.*

*If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.*

*IF INHALED: Remove person to fresh air and keep comfortable for breathing.*

*If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.*

*Continue rinsing.*

*Immediately call a poison center/doctor.*

*IF exposed or concerned: Get medical advice/attention.*

*Specific treatment (see on this label).*

*Get medical advice/attention if you feel unwell.*

*Rinse mouth.*

*Take off immediately all contaminated clothing and wash it before reuse.*

*If skin irritation occurs: Get medical advice/attention.*

*If eye irritation persists: Get medical advice/attention.*

*In case of fire: Use for extinction: CO<sub>2</sub>, powder or water spray.*

*Store in a well-ventilated place. Keep container tightly closed.*

*Store in a well-ventilated place. Keep cool.*

*Store locked up.*

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

(Contd. on page 3)

# Safety Data Sheet

acc. to OSHA HCS

Printing date 03/19/2019

Reviewed on 03/19/2019

Trade name: **CHLOROFORM, REAGENT ACS**

(Contd. of page 2)

· **Classification system:**· **NFPA ratings (scale 0 - 4)**· **HMIS-ratings (scale 0 - 4)**

HEALTH	2	Health = 2
FIRE	0	Fire = 0
REACTIVITY	0	Reactivity = 0

· **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 CHLOROFORM, REAGENT ACS

· **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:**

Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.

· **After inhalation:**

Supply fresh air. If required, provide artificial respiration. Keep patient warm. Consult doctor if symptoms persist. In case of unconsciousness place patient stably in side position for transportation.

· **After skin contact:** Immediately wash with water and soap and rinse thoroughly.· **After eye contact:**

Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.

· **After swallowing:** Immediately call a doctor.· **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:**CO<sub>2</sub>, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.· **Special hazards arising from the substance or mixture** No further relevant information available.

(Contd. on page 4)

# Safety Data Sheet

acc. to OSHA HCS

Printing date 03/19/2019

Reviewed on 03/19/2019

**Trade name: CHLOROFORM, REAGENT ACS**

(Contd. of page 3)

- **Advice for firefighters**
- **Protective equipment:** Mouth respiratory protective device.

## 6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures** Not required.
- **Environmental precautions:** Do not allow to enter sewers/ surface or ground water.
- **Methods and material for containment and cleaning up:**  
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).  
Dispose contaminated material as waste according to item 13.  
Ensure adequate ventilation.
- **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.
- **Protective Action Criteria for Chemicals**
- **PAC-1:** 2 ppm
- **PAC-2:** 64 ppm
- **PAC-3:** 3,200 ppm

## 7 Handling and storage

- **Handling:**
- **Precautions for safe handling** Ensure good ventilation/exhaustion at the workplace.
- **Information about protection against explosions and fires:** No special measures required.
- **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:** Not required.
- **Further information about storage conditions:** Keep receptacle tightly sealed.
- **Specific end use(s)** No further relevant information available.

## 8 Exposure controls/personal protection

- **Additional information about design of technical systems:** No further data; see item 7.
- **Control parameters**

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

### 67-66-3 CHLOROFORM, REAGENT ACS

PEL	Ceiling limit value: 240 mg/m <sup>3</sup> , 50 ppm
REL	Short-term value: 9.78* mg/m <sup>3</sup> , 2* ppm *60-min; See Pocket Guide App. A
TLV	Long-term value: 49 mg/m <sup>3</sup> , 10 ppm

- **Additional information:** The lists that were valid during the creation were used as basis.
- **Exposure controls**
- **Personal protective equipment:**
- **General protective and hygienic measures:**  
Keep away from foodstuffs, beverages and feed.  
Immediately remove all soiled and contaminated clothing.

(Contd. on page 5)

# Safety Data Sheet

acc. to OSHA HCS

Printing date 03/19/2019

Reviewed on 03/19/2019

**Trade name: CHLOROFORM, REAGENT ACS**

(Contd. of page 4)

Wash hands before breaks and at the end of work.

Avoid contact with the eyes and skin.

· **Breathing equipment:**

In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use respiratory protective device that is independent of circulating air.

· **Protection of hands:**



Protective gloves

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

Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.

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.

· **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



Tightly sealed goggles

## 9 Physical and chemical properties

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

· **General Information**

· **Appearance:**

<b>Form:</b>	Fluid
<b>Color:</b>	Colorless
<b>Odor:</b>	Pleasant
<b>Odor threshold:</b>	Not determined.

· **pH-value:** Not determined.

· **Change in condition**

<b>Melting point/Melting range:</b>	-63 °C (-81.4 °F)
<b>Boiling point/Boiling range:</b>	62 °C (143.6 °F)

· **Flash point:** 0 °C (32 °F)

· **Flammability (solid, gaseous):** Not flammable.

· **Ignition temperature:** 982 °C (1,799.6 °F)

· **Decomposition temperature:** Not determined.

· **Auto igniting:** Not determined.

· **Danger of explosion:** Product is not explosive. However, formation of explosive air/vapor mixtures are possible.

(Contd. on page 6)

# Safety Data Sheet

acc. to OSHA HCS

Printing date 03/19/2019

Reviewed on 03/19/2019

Trade name: **CHLOROFORM, REAGENT ACS**

(Contd. of page 5)

- |   |   |
|---|---|
| · <b>Explosion limits:</b>  |   |
| Lower:  | Not determined.                             |
| Upper:  | Not determined.                             |
| · <b>Vapor pressure at 20 °C (68 °F):</b>                         | 210 hPa (157.5 mm Hg)                       |
| · <b>Density at 20 °C (68 °F):</b>                                | 1.47988 g/cm <sup>3</sup> (12.3496 lbs/gal) |
| · <b>Relative density</b>   | Not determined.                             |
| · <b>Vapor density</b>  | Not determined.                             |
| · <b>Evaporation rate</b>   | Not determined.                             |
| · <b>Solubility in / Miscibility with Water at 20 °C (68 °F):</b> | 8 g/l                                       |
| · <b>Partition coefficient (n-octanol/water):</b> Not determined. |   |
| · <b>Viscosity:</b>   |   |
| Dynamic at 20 °C (68 °F):   | 0.56 mPas                                   |
| Kinematic:  | Not determined.                             |
| · <b>Other information</b>  | No further relevant information available.  |

## 10 Stability and reactivity

- **Reactivity** No further relevant information available.
- **Chemical stability**
- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
- **Possibility of hazardous reactions** No dangerous reactions known.
- **Conditions to avoid** No further relevant information available.
- **Incompatible materials:** No further relevant information available.
- **Hazardous decomposition products:** No dangerous decomposition products known.

## 11 Toxicological information

- **Information on toxicological effects**
- **Acute toxicity:**

- **LD/LC50 values that are relevant for classification:**

Oral	LD50	908 mg/kg (rat)
Dermal	LD50	75 mg/kg (rat)

- **Primary irritant effect:**
- **on the skin:** Irritant to skin and mucous membranes.
- **on the eye:** Irritating effect.
- **Sensitization:** No sensitizing effects known.
- **Additional toxicological information:**
- **Carcinogenic categories**
- **IARC (International Agency for Research on Cancer)** 2B
- **NTP (National Toxicology Program)** R
- **OSHA-Ca (Occupational Safety Health Administration)** Substance is not listed.

US

(Contd. on page 7)

# Safety Data Sheet

acc. to OSHA HCS

Printing date 03/19/2019

Reviewed on 03/19/2019

**Trade name: CHLOROFORM, REAGENT ACS**

(Contd. of page 6)


## 12 Ecological information

- **Toxicity**
- **Aquatic toxicity:** No further relevant information available.
- **Persistence and degradability** No further relevant information available.
- **Behavior in environmental systems:**
- **Bioaccumulative potential** No further relevant information available.
- **Mobility in soil** No further relevant information available.
- **Additional ecological information:**
- **General notes:**  
*Water hazard class 3 (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 of together with household garbage. Do not allow product to reach sewage system.*
- **Uncleaned packagings:**
- **Recommendation:** Disposal must be made according to official regulations.

## 14 Transport information

- |   |   |
|---|---|
| <ul style="list-style-type: none"> <li>· <b>UN-Number</b></li> <li>· <b>DOT, ADR, IMDG, IATA</b></li> </ul>   | <p style="margin: 0;">UN1888</p>  |
| <ul style="list-style-type: none"> <li>· <b>UN proper shipping name</b></li> <li>· <b>DOT</b></li> <li>· <b>ADR</b></li> <li>· <b>IMDG, IATA</b></li> </ul> | <p style="margin: 0;">Chloroform<br/>1888 CHLOROFORM<br/>CHLOROFORM</p>   |
| <ul style="list-style-type: none"> <li>· <b>Transport hazard class(es)</b></li> <li>· <b>DOT</b></li> </ul>   | <div style="display: flex; align-items: center; gap: 10px;">  </div> |
| <ul style="list-style-type: none"> <li>· <b>Class</b></li> <li>· <b>Label</b></li> </ul>  | <p style="margin: 0;">6.1 Toxic substances<br/>6.1</p>  |

(Contd. on page 8)

US

# Safety Data Sheet

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Printing date 03/19/2019

Reviewed on 03/19/2019

Trade name: **CHLOROFORM, REAGENT ACS**

(Contd. of page 7)

· **ADR, IMDG, IATA**

· **Class** 6.1 Toxic substances  
 · **Label** 6.1

· **Packing group**  
 · **DOT, ADR, IMDG, IATA** III

· **Environmental hazards:** Not applicable.

· **Special precautions for user** Warning: Toxic substances  
 · **Danger code (Kemler):** 60  
 · **EMS Number:** 6.1-02  
 · **Segregation groups** Liquid halogenated hydrocarbons  
 · **Stowage Category** A  
 · **Stowage Code** SW2 Clear of living quarters.

· **Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code** Not applicable.

· **Transport/Additional information:**

· **DOT**  
 · **Quantity limitations** On passenger aircraft/rail: 60 L  
 On cargo aircraft only: 220 L  
 · **Hazardous substance:** 10 lbs, 4.54 kg

· **ADR**  
 · **Excepted quantities (EQ)** Code: E1  
 Maximum net quantity per inner packaging: 30 ml  
 Maximum net quantity per outer packaging: 1000 ml

· **IMDG**  
 · **Limited quantities (LQ)** 5L  
 · **Excepted quantities (EQ)** Code: E1  
 Maximum net quantity per inner packaging: 30 ml  
 Maximum net quantity per outer packaging: 1000 ml

· **UN "Model Regulation":** UN 1888 CHLOROFORM, 6.1, III

## 15 Regulatory information

- **Safety, health and environmental regulations/legislation specific for the substance or mixture**
- **Sara**
- **Section 355 (extremely hazardous substances):** Substance is listed.
- **Section 313 (Specific toxic chemical listings):** Substance is listed.
- **TSCA (Toxic Substances Control Act):** Substance is listed.
- **Proposition 65**
- **Chemicals known to cause cancer:** Substance is listed.
- **Chemicals known to cause reproductive toxicity for females:** Substance is not listed.
- **Chemicals known to cause reproductive toxicity for males:** Substance is not listed.
- **Chemicals known to cause developmental toxicity:** Substance is listed.

(Contd. on page 9)

US



# Safety Data Sheet

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Printing date 03/19/2019

Reviewed on 03/19/2019

Trade name: **CHLOROFORM, REAGENT ACS**

(Contd. of page 8)

- **Carcinogenic categories**
- **EPA (Environmental Protection Agency) B2, L, NL**
- **TLV (Threshold Limit Value established by ACGIH) A3**
- **NIOSH-Ca (National Institute for Occupational Safety and Health) Substance is listed.**
- **GHS label elements** The substance is classified and labeled according to the Globally Harmonized System (GHS).
- **Hazard pictograms**



GHS02    GHS06    GHS07    GHS08

- **Signal word** *Danger*
- **Hazard statements**
  - Highly flammable liquid and vapor.*
  - Harmful if swallowed.*
  - Fatal in contact with skin.*
  - Toxic if inhaled.*
  - Causes skin irritation.*
  - Causes serious eye irritation.*
  - Suspected of causing cancer.*
  - Suspected of damaging fertility or the unborn child.*
  - Causes damage to organs through prolonged or repeated exposure.*
- **Precautionary statements**
  - Obtain special instructions before use.*
  - Do not handle until all safety precautions have been read and understood.*
  - Keep away from heat/sparks/open flames/hot surfaces. - No smoking.*
  - Ground/bond container and receiving equipment.*
  - Use explosion-proof electrical/ventilating/lighting/equipment.*
  - Use only non-sparking tools.*
  - Take precautionary measures against static discharge.*
  - Do not breathe dust/fume/gas/mist/vapors/spray.*
  - Do not get in eyes, on skin, or on clothing.*
  - Wash thoroughly after handling.*
  - Do not eat, drink or smoke when using this product.*
  - Use only outdoors or in a well-ventilated area.*
  - Wear protective gloves/protective clothing/eye protection/face protection.*
  - If swallowed: Call a poison center/doctor if you feel unwell.*
  - If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.*
  - IF INHALED: Remove person to fresh air and keep comfortable for breathing.*
  - If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.*
  - Immediately call a poison center/doctor.*
  - IF exposed or concerned: Get medical advice/attention.*
  - Specific treatment (see on this label).*
  - Get medical advice/attention if you feel unwell.*
  - Rinse mouth.*
  - Take off immediately all contaminated clothing and wash it before reuse.*
  - If skin irritation occurs: Get medical advice/attention.*
  - If eye irritation persists: Get medical advice/attention.*
  - In case of fire: Use for extinction: CO2, powder or water spray.*
  - Store in a well-ventilated place. Keep container tightly closed.*
  - Store in a well-ventilated place. Keep cool.*
  - Store locked up.*

(Contd. on page 10)

# Safety Data Sheet

## acc. to OSHA HCS

Printing date 03/19/2019

Reviewed on 03/19/2019

**Trade name: CHLOROFORM, REAGENT ACS**

(Contd. of page 9)

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

· **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.*

· **Date of preparation / last revision** 03/19/2019 / -

· **Abbreviations and acronyms:**

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

ACGIH: American Conference of Governmental Industrial Hygienists

EINECS: European Inventory of Existing Commercial Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

NFPA: National Fire Protection Association (USA)

HMIS: Hazardous Materials Identification System (USA)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

NIOSH: National Institute for Occupational Safety

OSHA: Occupational Safety **Health**

**TLV: Threshold Limit Value**

**PEL: Permissible Exposure Limit**

**REL: Recommended Exposure Limit**

**Flam. Liq. 2: Flammable liquids – Category 2**

**Acute Tox. 4: Acute toxicity – Category 4**

**Acute Tox. 2: Acute toxicity – Category 2**

**Acute Tox. 3: Acute toxicity – Category 3**

**Skin Irrit. 2: Skin corrosion/irritation – Category 2**

**Eye Irrit. 2A: Serious eye damage/eye irritation – Category 2A**

**Carc. 2: Carcinogenicity – Category 2**

**Repr. 2: Reproductive toxicity – Category 2**

**STOT RE 1: Specific target organ toxicity (repeated exposure) – Category 1**

# Safety Data Sheet

according to WHS Regulations

Printing date 19.03.2019

Revision: 19.03.2019

## 1 Identification

- **Product identifier**
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- **Article number:** 12540, 12541, 12550, 12551
- **CAS Number:**  
67-66-3
- **EC number:**  
200-663-8
- **Index number:**  
602-006-00-4
- **Relevant identified uses of the substance or mixture and uses advised against**  
No further relevant information available.
- **Application of the substance / the mixture** Laboratory chemicals
  
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**  
Electron Microscopy Sciences  
1560 Industry Road  
USA-Hatfield, PA 19440  
Tel: 215-412-8400 Fax: 215-412-8450  
email: sgkcck@aol.com  
www.emsdiasum.com
  
- ProSciTech Pty Ltd  
11 Carlton Street, Kirwan QLD 4817 Australia  
Telephone Number: (07) 4773 9444 - 8:30am - 5:00pm, Monday to Friday (excluding Public Holidays)  
Emergency Contact: (07) 4773 9444 - 8:30am - 5:00pm, Monday to Friday (excluding Public Holidays)  
Website: [ems.proscitech.com](http://ems.proscitech.com)
  
- Emgrid Australia Pty. Ltd.  
P.O. Box 118  
The Patch VIC 3792  
Australia  
Tel: 03 9752 1785  
Fax: 03 9752 1784  
Website: [www.emgrid.com.au](http://www.emgrid.com.au)
  
- **Further information obtainable from:** Product safety department
- **Emergency telephone number:**  
ChemTrec 1-800-424-9300 Contract CCN7661  
1-703-527-3887

## 2 Hazard(s) Identification

- **Classification of the substance or mixture**



GHS02 flame

Flam. Liq. 2 H225 Highly flammable liquid and vapour.

.....



GHS06 skull and crossbones

Acute Tox. 2 H310 Fatal in contact with skin.

Acute Tox. 3 H331 Toxic if inhaled.

(Contd. on page 2)

# Safety Data Sheet

## according to WHS Regulations

Printing date 19.03.2019

Revision: 19.03.2019

Trade name: **CHLOROFORM, REAGENT ACS**

(Contd. of page 1)



GHS08 health hazard

Carc. 2 H351 Suspected of causing cancer.

Repr. 2 H361 Suspected of damaging fertility or the unborn child.

STOT RE 1 H372 Causes damage to organs through prolonged or repeated exposure.



GHS07

Acute Tox. 4 H302 Harmful if swallowed.

Skin Irrit. 2 H315 Causes skin irritation.

Eye Irrit. 2A H319 Causes serious eye irritation.

· **Label elements**

· **GHS label elements**

The substance is classified and labelled according to the Globally Harmonised System (GHS).

· **Hazard pictograms**



GHS02



GHS06



GHS07



GHS08

· **Signal word** *Danger*

· **Hazard statements**

*Highly flammable liquid and vapour.*

*Harmful if swallowed.*

*Fatal in contact with skin.*

*Toxic if inhaled.*

*Causes skin irritation.*

*Causes serious eye irritation.*

*Suspected of causing cancer.*

*Suspected of damaging fertility or the unborn child.*

*Causes damage to organs through prolonged or repeated exposure.*

· **Precautionary statements**

*Obtain special instructions before use.*

*Do not handle until all safety precautions have been read and understood.*

*Keep away from heat/sparks/open flames/hot surfaces. No smoking.*

*Ground/bond container and receiving equipment.*

*Use explosion-proof electrical/ventilating/lighting equipment.*

*Use only non-sparking tools.*

*Take precautionary measures against static discharge.*

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

*Do not get in eyes, on skin, or on clothing.*

*Wash thoroughly after handling.*

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

*Use only outdoors or in a well-ventilated area.*

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

*IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell.*

*IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.*

(Contd. on page 3)

## Safety Data Sheet according to WHS Regulations

Printing date 19.03.2019

Revision: 19.03.2019

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(Contd. of page 2)

*IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.*  
*IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.*  
*Immediately call a POISON CENTER/doctor.*  
*IF exposed or concerned: Get medical advice/attention.*  
*Specific treatment (see on this label).*  
*Get medical advice/attention if you feel unwell.*  
*Rinse mouth.*  
*Take off immediately all contaminated clothing and wash it before reuse.*  
*If skin irritation occurs: Get medical advice/attention.*  
*If eye irritation persists: Get medical advice/attention.*  
*In case of fire: Use for extinction: CO<sub>2</sub>, powder or water spray.*  
*Store in a well-ventilated place. Keep container tightly closed.*  
*Store in a well-ventilated place. Keep cool.*  
*Store locked up.*  
*Dispose of contents/container in accordance with local/regional/national/international regulations.*

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

### 3 Composition and Information on Ingredients

- **Chemical characterisation: Substances**
- **CAS No. Description**  
67-66-3 CHLOROFORM, REAGENT ACS
- **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:**  
Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.
- **After inhalation:**  
Supply fresh air. If required, provide artificial respiration. Keep patient warm. Consult doctor if symptoms persist.  
In case of unconsciousness place patient stably in side position for transportation.
- **After skin contact:** Immediately wash with water and soap and rinse thoroughly.
- **After eye contact:**  
Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.
- **After swallowing:** Call for a doctor immediately.
- **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.

AU

(Contd. on page 4)

# Safety Data Sheet

## according to WHS Regulations

Printing date 19.03.2019

Revision: 19.03.2019

Trade name: **CHLOROFORM, REAGENT ACS**

(Contd. of page 3)

### 5 Fire Fighting Measures

- **Extinguishing media**
- **Suitable extinguishing agents:**  
CO<sub>2</sub>, powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
- **Special hazards arising from the substance or mixture** No further relevant information available.
- **Advice for firefighters**
- **Protective equipment:** Mouth respiratory protective device.

### 6 Accidental Release Measures

- **Personal precautions, protective equipment and emergency procedures** Not required.
- **Environmental precautions:** Do not allow to enter sewers/ surface or ground water.
- **Methods and material for containment and cleaning up:**  
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).  
Dispose contaminated material as waste according to item 13.  
Ensure adequate ventilation.
- **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** Ensure good ventilation/exhaustion at the workplace.
- **Information about fire - and explosion protection:** No special measures required.
- **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:** Not required.
- **Further information about storage conditions:** Keep container tightly sealed.
- **Specific end use(s)** No further relevant information available.

### 8 Exposure controls and 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, REAGENT ACS**

NES	Long-term value: 10 mg/m <sup>3</sup> , 2 ppm
	Sk

WES	Long-term value: 10 mg/m <sup>3</sup> , 2 ppm
	Sk

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

(Contd. on page 5)

AU

# Safety Data Sheet

## according to WHS Regulations

Printing date 19.03.2019

Revision: 19.03.2019

Trade name: **CHLOROFORM, REAGENT ACS**

(Contd. of page 4)

- **Exposure controls**
- **Personal protective equipment:**
- **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.
- **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.
- **Protection of hands:**



Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.  
 Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.

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.
- **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



Tightly sealed goggles

## 9 Physical and Chemical Properties

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

- **General Information**

- **Appearance:**

<b>Form:</b>	Fluid
<b>Colour:</b>	Colourless
<b>Odour:</b>	Pleasant
<b>Odour threshold:</b>	Not determined.

- **pH-value:** Not determined.

- **Change in condition**

<b>Melting point/freezing point:</b>	-63 °C
<b>Initial boiling point and boiling range:</b>	62 °C

- **Flash point:** 0 °C

- **Flammability (solid, gas):** Not applicable.

- **Ignition temperature:** 982 °C

(Contd. on page 6)



# Safety Data Sheet

## according to WHS Regulations

Printing date 19.03.2019

Revision: 19.03.2019

Trade name: **CHLOROFORM, REAGENT ACS**

(Contd. of page 5)

· <b>Decomposition temperature:</b>	Not determined.
· <b>Auto-ignition temperature:</b>	Not determined.
· <b>Explosive properties:</b>	Product is not explosive. However, formation of explosive air/vapour mixtures are possible.
· <b>Explosion limits:</b>	
<b>Lower:</b>	Not determined.
<b>Upper:</b>	Not determined.
· <b>Vapour pressure at 20 °C:</b>	210 hPa
· <b>Density at 20 °C:</b>	1.47988 g/cm <sup>3</sup>
· <b>Relative density</b>	Not determined.
· <b>Vapour density</b>	Not determined.
· <b>Evaporation rate</b>	Not determined.
· <b>Solubility in / Miscibility with water at 20 °C:</b>	8 g/l
· <b>Partition coefficient: n-octanol/water:</b>	Not determined.
· <b>Viscosity:</b>	
<b>Dynamic at 20 °C:</b>	0.56 mPas
<b>Kinematic:</b>	Not determined.
· <b>Other information</b>	No further relevant information available.

### 10 Stability and Reactivity

- **Reactivity** No further relevant information available.
- **Chemical stability**
- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
- **Possibility of hazardous reactions** No dangerous reactions known.
- **Conditions to avoid** No further relevant information available.
- **Incompatible materials:** No further relevant information available.
- **Hazardous decomposition products:** No dangerous decomposition products known.

### 11 Toxicological Information

- **Information on toxicological effects**
- **Acute toxicity**

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

Oral	LD50	908 mg/kg (rat)
Dermal	LD50	75 mg/kg (rat)

- **Primary irritant effect:**
- **Skin corrosion/irritation** Irritant to skin and mucous membranes.
- **Serious eye damage/irritation** Irritating effect.
- **Respiratory or skin sensitisation** No sensitising effects known.
- **CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)**  
Carc. 2, Repr. 2

AU

(Contd. on page 7)



# Safety Data Sheet

according to WHS Regulations

Printing date 19.03.2019

Revision: 19.03.2019

Trade name: **CHLOROFORM, REAGENT ACS**

(Contd. of page 6)


## 12 Ecological Information

- **Toxicity**
- **Aquatic toxicity:** No further relevant information available.
- **Persistence and degradability** No further relevant information available.
- **Behaviour in environmental systems:**
- **Bioaccumulative potential** No further relevant information available.
- **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.*
- **Uncleaned packaging:**
- **Recommendation:** Disposal must be made according to official regulations.

## 14 Transport information

<ul style="list-style-type: none"> <li>· <b>UN-Number</b></li> <li>· <b>ADG, IMDG, IATA</b></li> </ul>	<p style="margin: 0;">UN1888</p>
<ul style="list-style-type: none"> <li>· <b>UN proper shipping name</b></li> <li>· <b>ADG</b></li> <li>· <b>IMDG, IATA</b></li> </ul>	<p style="margin: 0;">1888 CHLOROFORM CHLOROFORM</p>
<ul style="list-style-type: none"> <li>· <b>Transport hazard class(es)</b></li> <li>· <b>ADG, IMDG, IATA</b></li> </ul> <div style="text-align: center; margin: 10px 0;">  </div> <ul style="list-style-type: none"> <li>· <b>Class</b></li> <li>· <b>Label</b></li> </ul>	<p style="margin: 0;">6.1 Toxic substances. 6.1</p>
<ul style="list-style-type: none"> <li>· <b>Packing group</b></li> <li>· <b>ADG, IMDG, IATA</b></li> </ul>	<p style="margin: 0;">III</p>
<ul style="list-style-type: none"> <li>· <b>Environmental hazards:</b></li> </ul>	<p style="margin: 0;">Not applicable.</p>
<ul style="list-style-type: none"> <li>· <b>Special precautions for user</b></li> <li>· <b>Danger code (Kemler):</b></li> <li>· <b>EMS Number:</b></li> </ul>	<p style="margin: 0;">Warning: Toxic substances. 60 6.1-02</p>

(Contd. on page 8)

# Safety Data Sheet

## according to WHS Regulations

Printing date 19.03.2019

Revision: 19.03.2019

Trade name: **CHLOROFORM, REAGENT ACS**

(Contd. of page 7)

· <b>Segregation groups</b>	Liquid halogenated hydrocarbons
· <b>Stowage Category</b>	A
· <b>Stowage Code</b>	SW2 Clear of living quarters.
· <b>Transport in bulk according to Annex II of Marpol and the IBC Code</b>	Not applicable.
· <b>Transport/Additional information:</b>	
· <b>ADG</b>	
· <b>Limited quantities (LQ)</b>	5L
· <b>Excepted quantities (EQ)</b>	Code: E1 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 1000 ml
· <b>Transport category</b>	2
· <b>Tunnel restriction code</b>	E
· <b>IMDG</b>	
· <b>Limited quantities (LQ)</b>	5L
· <b>Excepted quantities (EQ)</b>	Code: E1 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 1000 ml
· <b>UN "Model Regulation":</b>	UN 1888 CHLOROFORM, 6.1, III

### 15 Regulatory information

- **Safety, health and environmental regulations/legislation specific for the substance or mixture**
- **Australian Inventory of Chemical Substances** Substance is listed.
- **Standard for the Uniform Scheduling of Medicines and Poisons S2, S4, S6**
- **GHS label elements**  
The substance is classified and labelled according to the Globally Harmonised System (GHS).

- **Hazard pictograms**



GHS02 GHS06 GHS07 GHS08

- **Signal word** *Danger*
- **Hazard statements**  
*Highly flammable liquid and vapour.*  
*Harmful if swallowed.*  
*Fatal in contact with skin.*  
*Toxic if inhaled.*  
*Causes skin irritation.*  
*Causes serious eye irritation.*  
*Suspected of causing cancer.*  
*Suspected of damaging fertility or the unborn child.*  
*Causes damage to organs through prolonged or repeated exposure.*
- **Precautionary statements**  
*Obtain special instructions before use.*  
*Do not handle until all safety precautions have been read and understood.*  
*Keep away from heat/sparks/open flames/hot surfaces. No smoking.*  
*Ground/bond container and receiving equipment.*

(Contd. on page 9)

# Safety Data Sheet

## according to WHS Regulations

Printing date 19.03.2019

Revision: 19.03.2019

**Trade name: CHLOROFORM, REAGENT ACS**

(Contd. of page 8)

- Use explosion-proof electrical/ventilating/lighting equipment.  
 Use only non-sparking tools.  
 Take precautionary measures against static discharge.  
 Do not breathe dust/fume/gas/mist/vapours/spray.  
 Do not get in eyes, on skin, or on clothing.  
 Wash thoroughly after handling.  
 Do not eat, drink or smoke when using this product.  
 Use only outdoors or in a well-ventilated area.  
 Wear protective gloves/protective clothing/eye protection/face protection.  
**IF SWALLOWED:** Call a POISON CENTER/doctor if you feel unwell.  
**IF ON SKIN (or hair):** Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.  
**IF INHALED:** Remove victim to fresh air and keep at rest in a position comfortable for breathing.  
**IF IN EYES:** Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
 Immediately call a POISON CENTER/doctor.  
**IF exposed or concerned:** Get medical advice/attention.  
 Specific treatment (see on this label).  
 Get medical advice/attention if you feel unwell.  
 Rinse mouth.  
 Take off immediately all contaminated clothing and wash it before reuse.  
 If skin irritation occurs: Get medical advice/attention.  
 If eye irritation persists: Get medical advice/attention.  
**In case of fire:** Use for extinction: CO<sub>2</sub>, powder or water spray.  
 Store in a well-ventilated place. Keep container tightly closed.  
 Store in a well-ventilated place. Keep cool.  
 Store locked up.  
 Dispose of contents/container in accordance with local/regional/national/international regulations.
- **Directive 2012/18/EU**
  - **Named dangerous substances - ANNEX I** Substance is not listed.
  - **Seveso category**  
 H2 ACUTE TOXIC  
 P5c FLAMMABLE LIQUIDS
  - **Qualifying quantity (tonnes) for the application of lower-tier requirements** 50 t
  - **Qualifying quantity (tonnes) for the application of upper-tier requirements** 200 t
  - **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.

### · Abbreviations and acronyms:

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  
 IATA: International Air Transport Association  
 EINECS: European Inventory of Existing Commercial Chemical Substances  
 CAS: Chemical Abstracts Service (division of the American Chemical Society)  
 LC50: Lethal concentration, 50 percent  
 LD50: Lethal dose, 50 percent  
 PBT: Persistent, Bioaccumulative and Toxic  
 vPvB: very Persistent and very Bioaccumulative  
 Flam. Liq. 2: Flammable liquids – Category 2  
 Acute Tox. 4: Acute toxicity – Category 4  
 Acute Tox. 2: Acute toxicity – Category 2  
 Acute Tox. 3: Acute toxicity – Category 3  
 Skin Irrit. 2: Skin corrosion/irritation – Category 2

(Contd. on page 10)

**Safety Data Sheet**  
according to WHS Regulations

Printing date 19.03.2019

Revision: 19.03.2019

**Trade name: CHLOROFORM, REAGENT ACS**

*Eye Irrit. 2A: Serious eye damage/eye irritation – Category 2A*  
*Carc. 2: Carcinogenicity – Category 2*  
*Repr. 2: Reproductive toxicity – Category 2*  
*STOT RE 1: Specific target organ toxicity (repeated exposure) – Category 1*

(Contd. of page 9)

AU

# Safety Data Sheet

acc. to OSHA HCS

Printing date 03/19/2019

Reviewed on 03/19/2019

## 1 Identification

- **Product identifier**
- **Trade name:** CHLOROFORM, REAGENT ACS
- **Article number:** 12540, 12541, 12550, 12551
- **CAS Number:**  
67-66-3
- **EC number:**  
200-663-8
- **Index number:**  
602-006-00-4
- **Application of the substance / the mixture** Laboratory chemicals
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**  
Electron Microscopy Sciences  
1560 Industry Road  
USA-Hatfield, PA 19440  
Tel: 215-412-8400 Fax: 215-412-8450  
email: sgkcck@aol.com  
www.emsdiasum.com
- **Information department:** Product safety department
- **Emergency telephone number:**  
ChemTrec 1-800-424-9300 Contract CCN7661  
1-703-527-3887

## 2 Hazard(s) identification

- **Classification of the substance or mixture**



GHS02 Flame

Flammable Liquids - Category 2

H225 Highly flammable liquid and vapour.



GHS06 Skull and crossbones

Acute Toxicity (Dermal) – Category 2

H310 Fatal in contact with skin.

Acute Toxicity (Inhalation) - Category 3

H331 Toxic if inhaled.



GHS08 Health hazard

Carcinogenicity – Category 2

H351 Suspected of causing cancer.

Reproductive Toxicity - Category 2

H361 Suspected of damaging fertility or the unborn child.

Specific Target Organ Toxicity - Repeated Exposure - Category 1

H372 Causes damage to organs through prolonged or repeated exposure.



GHS07

Acute Toxicity (Oral) - Category 4

H302 Harmful if swallowed.

(Contd. on page 2)

# Safety Data Sheet

acc. to OSHA HCS

Printing date 03/19/2019

Reviewed on 03/19/2019

**Trade name: CHLOROFORM, REAGENT ACS**

(Contd. of page 1)

*Skin Irritation - Category 2*

*H315 Causes skin irritation.*

*Eye Irritation - Category 2A*

*H319 Causes serious eye irritation.*

· **Label elements**

· **GHS label elements** *The substance is classified and labeled according to the Globally Harmonized System (GHS).*

· **Hazard pictograms**



GHS02

GHS06

GHS07

GHS08

· **Signal word** *Danger*

· **Hazard statements**

*Highly flammable liquid and vapour.*

*Harmful if swallowed.*

*Fatal in contact with skin.*

*Toxic if inhaled.*

*Causes skin irritation.*

*Causes serious eye irritation.*

*Suspected of causing cancer.*

*Suspected of damaging fertility or the unborn child.*

*Causes damage to organs through prolonged or repeated exposure.*

· **Precautionary statements**

*Obtain special instructions before use.*

*Do not handle until all safety precautions have been read and understood.*

*Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.*

*Ground and bond container and receiving equipment.*

*Use explosion-proof [electrical/ventilating/lighting] equipment.*

*Use non-sparking tools.*

*Take actions to prevent static discharges.*

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

*Do not get in eyes, on skin, or on clothing.*

*Wash thoroughly after handling.*

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

*Use only outdoors or in a well-ventilated area.*

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

*If swallowed: Call a poison center/doctor if you feel unwell.*

*IF ON SKIN: Gently wash with plenty of soap and water.*

*IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower].*

*IF INHALED: Remove person to fresh air and keep comfortable for breathing.*

*IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.*

*Continue rinsing.*

*Immediately call a poison center/doctor.*

*IF exposed or concerned: Get medical advice/attention.*

*Get medical advice/attention if you feel unwell.*

*Rinse mouth.*

*Take off contaminated clothing and wash it before reuse.*

*Specific measures (see on this label).*

*If skin irritation occurs: Get medical advice/attention.*

*If eye irritation persists: Get medical advice/attention.*

*Wash contaminated clothing before reuse.*

*In case of fire: Use for extinction: CO2, powder or water spray.*

*Store in a well-ventilated place. Keep container tightly closed.*

(Contd. on page 3)

CA

# Safety Data Sheet

acc. to OSHA HCS

Printing date 03/19/2019

Reviewed on 03/19/2019

**Trade name: CHLOROFORM, REAGENT ACS**

(Contd. of page 2)

Store in a well-ventilated place. Keep cool.

Store locked up.

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

· **Classification system:**

· **NFPA ratings (scale 0 - 4)**



· **HMIS-ratings (scale 0 - 4)**

HEALTH	2	Health = 2
FIRE	0	Fire = 0
REACTIVITY	0	Reactivity = 0

### 3 Composition/information on ingredients

· **Chemical characterization: Substances**

· **CAS No. Description**

67-66-3 CHLOROFORM, REAGENT ACS

· **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:**

Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.

· **After inhalation:**

Supply fresh air. If required, provide artificial respiration. Keep patient warm. Consult doctor if symptoms persist.

In case of unconsciousness place patient stably in side position for transportation.

· **After skin contact:** Immediately wash with water and soap and rinse thoroughly.

· **After eye contact:**

Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.

· **After swallowing:** Immediately call a doctor.

· **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:**

CO<sub>2</sub>, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.

· **Special hazards arising from the substance or mixture** No further relevant information available.

(Contd. on page 4)

# Safety Data Sheet

acc. to OSHA HCS

Printing date 03/19/2019

Reviewed on 03/19/2019

**Trade name: CHLOROFORM, REAGENT ACS**

(Contd. of page 3)

- **Advice for firefighters**
- **Protective equipment:** Mouth respiratory protective device.

## 6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures** Not required.
- **Environmental precautions:** Do not allow to enter sewers/ surface or ground water.
- **Methods and material for containment and cleaning up:**  
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).  
Dispose contaminated material as waste according to item 13.  
Ensure adequate ventilation.
- **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** Ensure good ventilation/exhaustion at the workplace.
- **Information about protection against explosions and fires:** No special measures required.
- **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:** Not required.
- **Further information about storage conditions:** Keep receptacle tightly sealed.
- **Specific end use(s)** No further relevant information available.

## 8 Exposure controls/personal protection

- **Additional information about design of technical systems:** No further data; see item 7.
- **Control parameters**

- **Components with limit values that require monitoring at the workplace:**

**67-66-3 CHLOROFORM, REAGENT ACS**

EL	Long-term value: 2 ppm IARC 2B; R
EV	Long-term value: 49 mg/m <sup>3</sup> , 10 ppm

- **Additional information:** The lists that were valid during the creation were used as basis.
- **Exposure controls**
- **Personal protective equipment:**
- **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.
- **Breathing equipment:**  
In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use respiratory protective device that is independent of circulating air.

(Contd. on page 5)



# Safety Data Sheet

acc. to OSHA HCS

Printing date 03/19/2019

Reviewed on 03/19/2019

Trade name: **CHLOROFORM, REAGENT ACS**

(Contd. of page 4)

· **Protection of hands:**



Protective gloves

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

Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.

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.

· **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



Tightly sealed goggles

## 9 Physical and chemical properties

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

· **General Information**

· **Appearance:**

<b>Form:</b>	Fluid
<b>Color:</b>	Colorless
<b>Odor:</b>	Pleasant
<b>Odor threshold:</b>	Not determined.

· **pH-value:** Not determined.

· **Change in condition**

<b>Melting point/Melting range:</b>	-63 °C
<b>Boiling point/Boiling range:</b>	62 °C

· **Flash point:** 0 °C

· **Flammability (solid, gaseous):** Not flammable.

· **Ignition temperature:** 982 °C

· **Decomposition temperature:** Not determined.

· **Auto igniting:** Not determined.

· **Danger of explosion:** Product is not explosive. However, formation of explosive air/vapor mixtures are possible.

· **Explosion limits:**

<b>Lower:</b>	Not determined.
<b>Upper:</b>	Not determined.

· **Vapor pressure at 20 °C:** 210 hPa

(Contd. on page 6)

# Safety Data Sheet

acc. to OSHA HCS

Printing date 03/19/2019

Reviewed on 03/19/2019

Trade name: **CHLOROFORM, REAGENT ACS**

(Contd. of page 5)

- |   |                           |
|---|---------------------------|
| · <b>Density at 20 °C:</b>  | 1.47988 g/cm <sup>3</sup> |
| · <b>Relative density</b>   | Not determined.           |
| · <b>Vapor density</b>  | Not determined.           |
| · <b>Evaporation rate</b>   | Not determined.           |
| · <b>Solubility in / Miscibility with Water at 20 °C:</b>         | 8 g/l                     |
| · <b>Partition coefficient (n-octanol/water):</b> Not determined. |                           |
| · <b>Viscosity:</b>   |                           |
| <b>Dynamic at 20 °C:</b>  | 0.56 mPas                 |
| <b>Kinematic:</b>   | Not determined.           |
| · <b>Other information</b>  |                           |
| No further relevant information available.                        |                           |

## 10 Stability and reactivity

- **Reactivity** No further relevant information available.
- **Chemical stability**
- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
- **Possibility of hazardous reactions** No dangerous reactions known.
- **Conditions to avoid** No further relevant information available.
- **Incompatible materials:** No further relevant information available.
- **Hazardous decomposition products:** No dangerous decomposition products known.

## 11 Toxicological information

- **Information on toxicological effects**
- **Acute toxicity:**

- **LD/LC50 values that are relevant for classification:**

Oral	LD50	908 mg/kg (rat)
Dermal	LD50	75 mg/kg (rat)

- **Primary irritant effect:**
- **on the skin:** Irritant to skin and mucous membranes.
- **on the eye:** Irritating effect.
- **Sensitization:** No sensitizing effects known.
- **Additional toxicological information:**
- **Carcinogenic categories**
- **IARC (International Agency for Research on Cancer)** 2B
- **NTP (National Toxicology Program)** R

## 12 Ecological information

- **Toxicity**
- **Aquatic toxicity:** No further relevant information available.
- **Persistence and degradability** No further relevant information available.
- **Behavior in environmental systems:**
- **Bioaccumulative potential** No further relevant information available.
- **Mobility in soil** No further relevant information available.

(Contd. on page 7)

# Safety Data Sheet

acc. to OSHA HCS

Printing date 03/19/2019

Reviewed on 03/19/2019

**Trade name: CHLOROFORM, REAGENT ACS**

(Contd. of page 6)

- **Additional ecological information:**
- **General notes:**  
*Water hazard class 3 (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 of together with household garbage. Do not allow product to reach sewage system.*
- **Uncleaned packagings:**
- **Recommendation:** Disposal must be made according to official regulations.

## 14 Transport information

<b>· UN-Number</b>	UN1888
<b>· DOT, TDG, IMDG, IATA</b>	
<b>· UN proper shipping name</b>	Chloroform
<b>· DOT</b>	1888 CHLOROFORM
<b>· TDG</b>	CHLOROFORM
<b>· IMDG, IATA</b>	
<b>· Transport hazard class(es)</b>	
<b>· DOT</b>	
<b>· Class</b>	6.1 Toxic substances
<b>· Label</b>	6.1
<b>· TDG, IMDG, IATA</b>	
<b>· Class</b>	6.1 Toxic substances
<b>· Label</b>	6.1
<b>· Packing group</b>	III
<b>· DOT, TDG, IMDG, IATA</b>	
<b>· Environmental hazards:</b>	Not applicable.
<b>· Special precautions for user</b>	Warning: Toxic substances
<b>· Danger code (Kemler):</b>	60
<b>· EMS Number:</b>	6.1-02

(Contd. on page 8)

# Safety Data Sheet

acc. to OSHA HCS

Printing date 03/19/2019

Reviewed on 03/19/2019

Trade name: **CHLOROFORM, REAGENT ACS**

(Contd. of page 7)

· <b>Segregation groups</b>	Liquid halogenated hydrocarbons
· <b>Stowage Category</b>	A
· <b>Stowage Code</b>	SW2 Clear of living quarters.
· <b>Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code</b>	Not applicable.
· <b>Transport/Additional information:</b>	
· <b>DOT</b>	
· <b>Quantity limitations</b>	On passenger aircraft/rail: 60 L On cargo aircraft only: 220 L
· <b>Hazardous substance:</b>	10 lbs, 4.54 kg
· <b>TDG</b>	
· <b>Excepted quantities (EQ)</b>	Code: E1 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 1000 ml
· <b>IMDG</b>	
· <b>Limited quantities (LQ)</b>	5L
· <b>Excepted quantities (EQ)</b>	Code: E1 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 1000 ml
· <b>UN "Model Regulation":</b>	UN 1888 CHLOROFORM, 6.1, III

## 15 Regulatory information

- **Safety, health and environmental regulations/legislation specific for the substance or mixture**
- **Sara**
- **Section 355 (extremely hazardous substances):** Substance is listed.
- **Section 313 (Specific toxic chemical listings):** Substance is listed.
- **TSCA (Toxic Substances Control Act):** Substance is listed.
- **Canadian substance listings:**
- **Canadian Domestic Substances List (DSL)** Substance is listed.
- **Canadian Ingredient Disclosure list (limit 0.1%)** Substance is listed.
- **Canadian Ingredient Disclosure list (limit 1%)** Substance is not listed.
- **GHS label elements** The substance is classified and labeled according to the Globally Harmonized System (GHS).
- **Hazard pictograms**



- **Signal word** *Danger*
- **Hazard statements**  
Highly flammable liquid and vapour.  
Harmful if swallowed.  
Fatal in contact with skin.  
Toxic if inhaled.  
Causes skin irritation.  
Causes serious eye irritation.  
Suspected of causing cancer.

(Contd. on page 9)

CA

# Safety Data Sheet

acc. to OSHA HCS

Printing date 03/19/2019

Reviewed on 03/19/2019

**Trade name: CHLOROFORM, REAGENT ACS**

(Contd. of page 8)

*Suspected of damaging fertility or the unborn child.*

*Causes damage to organs through prolonged or repeated exposure.*

**· Precautionary statements**

*Obtain special instructions before use.*

*Do not handle until all safety precautions have been read and understood.*

*Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.*

*Ground and bond container and receiving equipment.*

*Use explosion-proof [electrical/ventilating/lighting] equipment.*

*Use non-sparking tools.*

*Take actions to prevent static discharges.*

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

*Do not get in eyes, on skin, or on clothing.*

*Wash thoroughly after handling.*

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

*Use only outdoors or in a well-ventilated area.*

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

*If swallowed: Call a poison center/doctor if you feel unwell.*

*IF ON SKIN: Gently wash with plenty of soap and water.*

*IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower].*

*IF INHALED: Remove person to fresh air and keep comfortable for breathing.*

*IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.*

*Continue rinsing.*

*Immediately call a poison center/doctor.*

*IF exposed or concerned: Get medical advice/attention.*

*Get medical advice/attention if you feel unwell.*

*Rinse mouth.*

*Take off contaminated clothing and wash it before reuse.*

*Specific measures (see on this label).*

*If skin irritation occurs: Get medical advice/attention.*

*If eye irritation persists: Get medical advice/attention.*

*Wash contaminated clothing before reuse.*

*In case of fire: Use for extinction: CO<sub>2</sub>, powder or water spray.*

*Store in a well-ventilated place. Keep container tightly closed.*

*Store in a well-ventilated place. Keep cool.*

*Store locked up.*

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

**· 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.*

**· Date of the latest revision of the safety data sheet** 03/19/2019 / -

**· Abbreviations and acronyms:**

*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)*

*NFPA: National Fire Protection Association (USA)*

*HMIS: Hazardous Materials Identification System (USA)*

*LC50: Lethal concentration, 50 percent*

*LD50: Lethal dose, 50 percent*

*PBT: Persistent, Bioaccumulative and Toxic*

*vPvB: very Persistent and very Bioaccumulative*

**Safety data sheet**  
according to 1907/2006/EC, Article 31

Printing date 19.03.2019

Revision: 19.03.2019

### SECTION 1: Identification of the substance/mixture and of the company/undertaking

- **1.1 Product identifier**
- **Trade name:** CHLOROFORM, REAGENT ACS
- **Article number:** 12540, 12541, 12550, 12551
- **CAS Number:**  
67-66-3
- **EC number:**  
200-663-8
- **Index number:**  
602-006-00-4
- **1.2 Relevant identified uses of the substance or mixture and uses advised against**  
No further relevant information available.
- **Application of the substance / the mixture** Laboratory chemicals
- **1.3 Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**  
Electron Microscopy Sciences  
1560 Industry Road  
USA-Hatfield, PA 19440  
Tel: 215-412-8400 Fax: 215-412-8450  
email: sgkcck@aol.com  
www.emsdiasum.com
- **Further information obtainable from:** Product safety department
- **1.4 Emergency telephone number:**  
ChemTrec 1-800-424-9300 Contract CCN7661  
1-703-527-3887

### SECTION 2: Hazards identification

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



GHS02 flame

Flam. Liq. 2 H225 Highly flammable liquid and vapour.



GHS06 skull and crossbones

Acute Tox. 2 H310 Fatal in contact with skin.

Acute Tox. 3 H331 Toxic if inhaled.



GHS08 health hazard

Carc. 2 H351 Suspected of causing cancer.

Repr. 2 H361d Suspected of damaging the unborn child.

STOT RE 1 H372 Causes damage to organs through prolonged or repeated exposure.



GHS07

(Contd. on page 2)

GB

# Safety data sheet

according to 1907/2006/EC, Article 31

Printing date 19.03.2019

Revision: 19.03.2019

**Trade name: CHLOROFORM, REAGENT ACS**

(Contd. of page 1)

Acute Tox. 4 H302 Harmful if swallowed.  
 Skin Irrit. 2 H315 Causes skin irritation.  
 Eye Irrit. 2 H319 Causes serious eye irritation.

## · 2.2 Label elements

### · Labelling according to Regulation (EC) No 1272/2008

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

### · Hazard pictograms



### · Signal word *Danger*

### · Hazard statements

H225 Highly flammable liquid and vapour.  
 H302 Harmful if swallowed.  
 H310 Fatal in contact with skin.  
 H331 Toxic if inhaled.  
 H315 Causes skin irritation.  
 H319 Causes serious eye irritation.  
 H351 Suspected of causing cancer.  
 H361d Suspected of damaging the unborn child.  
 H372 Causes damage to organs through prolonged or repeated exposure.

### · Precautionary statements

P303+P361+P353 **IF ON SKIN (or hair):** Take off immediately all contaminated clothing. Rinse skin with water/shower.  
 P305+P351+P338 **IF IN EYES:** Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
 P310 Immediately call a POISON CENTER/doctor.  
 P321 Specific treatment (see on this label).  
 P330 Rinse mouth.  
 P361+P364 Take off immediately all contaminated clothing and wash it before reuse.  
 P405 Store locked up.  
 P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

## · 2.3 Other hazards

### · Results of PBT and vPvB assessment

- **PBT:** Not applicable.
- **vPvB:** Not applicable.

## SECTION 3: Composition/information on ingredients

### · 3.1 Chemical characterisation: Substances

#### · CAS No. Description

67-66-3 CHLOROFORM, REAGENT ACS

#### · Identification number(s)

· **EC number:** 200-663-8

· **Index number:** 602-006-00-4

GB

(Contd. on page 3)



**Safety data sheet**  
according to 1907/2006/EC, Article 31

Printing date 19.03.2019

Revision: 19.03.2019

Trade name: **CHLOROFORM, REAGENT ACS**

(Contd. of page 2)

**SECTION 4: First aid measures**· **4.1 Description of first aid measures**· **General information:**

Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.

· **After inhalation:**

Supply fresh air. If required, provide artificial respiration. Keep patient warm. Consult doctor if symptoms persist. In case of unconsciousness place patient stably in side position for transportation.

· **After skin contact:** Immediately wash with water and soap and rinse thoroughly.· **After eye contact:**

Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.

· **After swallowing:** Call for a doctor immediately.· **4.2 Most important symptoms and effects, both acute and delayed** No further relevant information available.· **4.3 Indication of any immediate medical attention and special treatment needed**

No further relevant information available.

**SECTION 5: Firefighting measures**· **5.1 Extinguishing media**· **Suitable extinguishing agents:**

CO<sub>2</sub>, powder or water spray. Fight larger fires with water spray or alcohol resistant foam.

· **5.2 Special hazards arising from the substance or mixture** No further relevant information available.· **5.3 Advice for firefighters**· **Protective equipment:** Mouth respiratory protective device.**SECTION 6: Accidental release measures**· **6.1 Personal precautions, protective equipment and emergency procedures** Not required.· **6.2 Environmental precautions:** Do not allow to enter sewers/ surface or ground water.· **6.3 Methods and material for containment and cleaning up:**

Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).

Dispose contaminated material as waste according to item 13.

Ensure adequate ventilation.

· **6.4 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.

**SECTION 7: Handling and storage**· **7.1 Precautions for safe handling** Ensure good ventilation/exhaustion at the workplace.· **Information about fire - and explosion protection:** No special measures required.· **7.2 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:** Not required.· **Further information about storage conditions:** Keep container tightly sealed.

(Contd. on page 4)



**Safety data sheet**  
according to 1907/2006/EC, Article 31

Printing date 19.03.2019

Revision: 19.03.2019

Trade name: **CHLOROFORM, REAGENT ACS**

(Contd. of page 3)

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

### SECTION 8: Exposure controls/personal protection

· **Additional information about design of technical facilities:** No further data; see item 7.· **8.1 Control parameters**· **Ingredients with limit values that require monitoring at the workplace:****67-66-3 CHLOROFORM, REAGENT ACS**

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

· **Additional information:** The lists valid during the making were used as basis.· **8.2 Exposure controls**· **Personal protective equipment:**· **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.

· **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.

· **Protection of hands:**

Protective gloves

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

Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.

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.

· **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



Tightly sealed goggles

GB

(Contd. on page 5)

**Safety data sheet**  
according to 1907/2006/EC, Article 31

Printing date 19.03.2019

Revision: 19.03.2019

Trade name: **CHLOROFORM, REAGENT ACS**

(Contd. of page 4)

### SECTION 9: Physical and chemical properties

#### · 9.1 Information on basic physical and chemical properties

##### · General Information

##### · Appearance:

Form:	Fluid
Colour:	Colourless
Odour:	Pleasant
Odour threshold:	Not determined.

· pH-value: Not determined.

##### · Change in condition

Melting point/freezing point:	-63 °C
Initial boiling point and boiling range:	62 °C

· Flash point: 0 °C

· Flammability (solid, gas): Not applicable.

· Ignition temperature: 982 °C

· Decomposition temperature: Not determined.

· Auto-ignition temperature: Not determined.

· Explosive properties: Product is not explosive. However, formation of explosive air/vapour mixtures are possible.

##### · Explosion limits:

Lower:	Not determined.
Upper:	Not determined.

· Vapour pressure at 20 °C: 210 hPa

· Density at 20 °C: 1.47988 g/cm<sup>3</sup>

· 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: Not determined.

##### · Viscosity:

Dynamic at 20 °C:	0.56 mPas
Kinematic:	Not determined.

· 9.2 Other information: No further relevant information available.

### SECTION 10: Stability and reactivity

· 10.1 Reactivity: No further relevant information available.

· 10.2 Chemical stability

· Thermal decomposition / conditions to be avoided: No decomposition if used according to specifications.

· 10.3 Possibility of hazardous reactions: No dangerous reactions known.

· 10.4 Conditions to avoid: No further relevant information available.

· 10.5 Incompatible materials: No further relevant information available.

(Contd. on page 6)

**Safety data sheet**  
according to 1907/2006/EC, Article 31

Printing date 19.03.2019

Revision: 19.03.2019

Trade name: **CHLOROFORM, REAGENT ACS**

(Contd. of page 5)

· **10.6 Hazardous decomposition products:** No dangerous decomposition products known.

## SECTION 11: Toxicological information

· **11.1 Information on toxicological effects**· **Acute toxicity**

Harmful if swallowed.

Fatal in contact with skin.

Toxic if inhaled.

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

Oral LD50 908 mg/kg (rat)

Dermal LD50 75 mg/kg (rat)

· **Primary irritant effect:**· **Skin corrosion/irritation**

Causes skin irritation.

· **Serious eye damage/irritation**

Causes serious eye irritation.

· **Respiratory or skin sensitisation** Based on available data, the classification criteria are not met.· **CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)**· **Germ cell mutagenicity** Based on available data, the classification criteria are not met.· **Carcinogenicity**

Suspected of causing cancer.

· **Reproductive toxicity**

Suspected of damaging the unborn child.

· **STOT-single exposure** Based on available data, the classification criteria are not met.· **STOT-repeated exposure**

Causes damage to organs through prolonged or repeated exposure.

· **Aspiration hazard** Based on available data, the classification criteria are not met.

## SECTION 12: Ecological information

· **12.1 Toxicity**· **Aquatic toxicity:** No further relevant information available.· **12.2 Persistence and degradability** No further relevant information available.· **12.3 Bioaccumulative potential** No further relevant information available.· **12.4 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.

· **12.5 Results of PBT and vPvB assessment**· **PBT:** Not applicable.· **vPvB:** Not applicable.· **12.6 Other adverse effects** No further relevant information available.

GB

(Contd. on page 7)

**Safety data sheet**  
according to 1907/2006/EC, Article 31

Printing date 19.03.2019

Revision: 19.03.2019


Trade name: **CHLOROFORM, REAGENT ACS**

(Contd. of page 6)

### SECTION 13: Disposal considerations

- **13.1 Waste treatment methods**
- **Recommendation**  
Must not be disposed together with household garbage. Do not allow product to reach sewage system.
- **Uncleaned packaging:**
- **Recommendation:** Disposal must be made according to official regulations.

### SECTION 14: Transport information

- |  |  |
|--|--|
| · <b>14.1 UN-Number</b>  | UN1888   |
| · <b>ADR, IMDG, IATA</b>   |  |
| · <b>14.2 UN proper shipping name</b>  | 1888 CHLOROFORM  |
| · <b>ADR</b>   | CHLOROFORM   |
| · <b>IMDG, IATA</b>  |  |
| · <b>14.3 Transport hazard class(es)</b>   |  |
| · <b>ADR, IMDG, IATA</b>   |  |
|  |                                |
| · <b>Class</b>   | 6.1 Toxic substances.  |
| · <b>Label</b>   | 6.1  |
| · <b>14.4 Packing group</b>  | III  |
| · <b>ADR, IMDG, IATA</b>   |  |
| · <b>14.5 Environmental hazards:</b>   | Not applicable.  |
| · <b>14.6 Special precautions for user</b>                                       | Warning: Toxic substances.   |
| · <b>Danger code (Kemler):</b>   | 60   |
| · <b>EMS Number:</b>   | 6.1-02   |
| · <b>Segregation groups</b>  | Liquid halogenated hydrocarbons  |
| · <b>Stowage Category</b>  | A  |
| · <b>Stowage Code</b>  | SW2 Clear of living quarters.  |
| · <b>14.7 Transport in bulk according to Annex II of Marpol and the IBC Code</b> | Not applicable.  |
| · <b>Transport/Additional information:</b>                                       |  |
| · <b>ADR</b>   |  |
| · <b>Limited quantities (LQ)</b>   | 5L   |
| · <b>Excepted quantities (EQ)</b>  | Code: E1<br>Maximum net quantity per inner packaging: 30 ml<br>Maximum net quantity per outer packaging: 1000 ml |
| · <b>Transport category</b>  | 2  |
| · <b>Tunnel restriction code</b>   | E  |
| · <b>IMDG</b>  |  |
| · <b>Limited quantities (LQ)</b>   | 5L   |

(Contd. on page 8)

GB

**Safety data sheet**  
according to 1907/2006/EC, Article 31

Printing date 19.03.2019

Revision: 19.03.2019

Trade name: **CHLOROFORM, REAGENT ACS**

(Contd. of page 7)

· <b>Excepted quantities (EQ)</b>	Code: E1 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 1000 ml
· <b>UN "Model Regulation":</b>	UN 1888 CHLOROFORM, 6.1, III

### SECTION 15: Regulatory information

- **15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**
- **Directive 2012/18/EU**
- **Named dangerous substances - ANNEX I Substance is not listed.**
- **Seveso category**  
H2 ACUTE TOXIC  
P5c FLAMMABLE LIQUIDS
- **Qualifying quantity (tonnes) for the application of lower-tier requirements 50 t**
- **Qualifying quantity (tonnes) for the application of upper-tier requirements 200 t**
- **REGULATION (EC) No 1907/2006 ANNEX XVII Conditions of restriction: 3, 32, 40**
- **Regulation (EU) No 649/2012 Annex I Part 1**
- **15.2 Chemical safety assessment: A Chemical Safety Assessment has not been carried out.**

### SECTION 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.

· **Abbreviations and acronyms:**

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  
 IATA: International Air Transport Association  
 GHS: Globally Harmonised System of Classification and Labelling of Chemicals  
 EINECS: European Inventory of Existing Commercial Chemical Substances  
 CAS: Chemical Abstracts Service (division of the American Chemical Society)  
 LC50: Lethal concentration, 50 percent  
 LD50: Lethal dose, 50 percent  
 PBT: Persistent, Bioaccumulative and Toxic  
 vPvB: very Persistent and very Bioaccumulative  
 Flam. Liq. 2: Flammable liquids – Category 2  
 Acute Tox. 4: Acute toxicity – Category 4  
 Acute Tox. 2: Acute toxicity – Category 2  
 Acute Tox. 3: Acute toxicity – Category 3  
 Skin Irrit. 2: Skin corrosion/irritation – Category 2  
 Eye Irrit. 2: Serious eye damage/eye irritation – Category 2  
 Carc. 2: Carcinogenicity – Category 2  
 Repr. 2: Reproductive toxicity – Category 2  
 STOT RE 1: Specific target organ toxicity (repeated exposure) – Category 1

GB

# Bezpečnostní list podle 1907/2006/ES, Článek 31

Datum vydání: 19.03.2019

Revize: 19.03.2019

## ODDÍL 1: Identifikace látky/směsi a společnosti/podniku

- **1.1 Identifikátor výrobku**
- **Obchodní označení:** chloroform
- **Číslo výrobku:** 12540, 12541, 12550, 12551
- **Číslo CAS:**  
67-66-3
- **Číslo ES:**  
200-663-8
- **Indexové číslo:**  
602-006-00-4
- **1.2 Příslušná určená použití látky nebo směsi a nedoporučená použití**  
Další relevantní informace nejsou k dispozici.
- **Použití látky / přípravku** Laboratorní chemikálie
- **1.3 Podrobné údaje o dodavateli bezpečnostního listu**
- **Identifikace výrobce/dovozce:**  
Electron Microscopy Sciences  
1560 Industry Road  
USA-Hatfield, PA 19440  
Tel: 215-412-8400 Fax: 215-412-8450  
email: sgkcck@aol.com  
www.emsdiasum.com
- **Obor poskytující informace:** Product safety department
- **1.4 Telefonní číslo pro naléhavé situace:**  
ChemTrec 1-800-424-9300 Contract CCN7661  
1-703-527-3887

## ODDÍL 2: Identifikace nebezpečnosti

- **2.1 Klasifikace látky nebo směsi**
- **Klasifikace v souladu s nařízením (ES) č. 1272/2008**



GHS02 plamen

Flam. Liq. 2 H225 Vysoce hořlavá kapalina a páry.



GHS06 lebka se zkříženými hnáty

Acute Tox. 2 H310 Při styku s kůží může způsobit smrt.

Acute Tox. 3 H331 Toxický při vdechování.



GHS08 nebezpečnost pro zdraví

Carc. 2 H351 Podezření na vyvolání rakoviny.

Repr. 2 H361d Podezření na poškození plodu v těle matky.

STOT RE 1 H372 Způsobuje poškození orgánů při prodloužené nebo opakované expozici.



GHS07

(pokračování na straně 2)

# Bezpečnostní list

## podle 1907/2006/ES, Článek 31

Datum vydání: 19.03.2019

Revize: 19.03.2019

**Obchodní označení: chloroform**

(pokračování strany 1)

Acute Tox. 4 H302 Zdraví škodlivý při požití.  
 Skin Irrit. 2 H315 Dráždí kůži.  
 Eye Irrit. 2 H319 Způsobuje vážné podráždění očí.

**2.2 Prvky označení**

- **Označování v souladu s nařízením (ES) č. 1272/2008** Látka je klasifikována a označena podle nařízení CLP.
- **Výstražné symboly nebezpečnosti**



GHS02 GHS06 GHS08

**Signální slovo Nebezpečí****Standardní věty o nebezpečnosti**

H225 Vysoce hořlavá kapalina a páry.  
 H302 Zdraví škodlivý při požití.  
 H310 Při styku s kůží může způsobit smrt.  
 H331 Toxický při vdechování.  
 H315 Dráždí kůži.  
 H319 Způsobuje vážné podráždění očí.  
 H351 Podezření na vyvolání rakoviny.  
 H361d Podezření na poškození plodu v těle matky.  
 H372 Způsobuje poškození orgánů při prodloužené nebo opakované expozici.

**Pokyny pro bezpečné zacházení**

P303+P361+P353 PŘI STYKU S KŮŽÍ (nebo s vlasy): Veškeré kontaminované části oděvu okamžitě svlékněte. Opláchněte kůži vodou/osprchujte.  
 P305+P351+P338 PŘI ZASAŽENÍ OČÍ: Několik minut opatrně vyplachujte vodou. Vyjměte kontaktní čočky, jsou-li nasazeny a pokud je lze vyjmout snadno. Pokračujte ve vyplachování.  
 P310 Okamžitě volejte TOXIKOLOGICKÉ INFORMAČNÍ STŘEDISKO/lékaře.  
 P321 Odborné ošetření (viz na tomto štítku).  
 P330 Vypláchněte ústa.  
 P361+P364 Veškeré kontaminované části oděvu okamžitě svlékněte a před opětovným použitím vyperte.  
 P405 Skladujte uzamčené.  
 P501 Obsah/nádobu likvidujte v souladu s místními/regionálními/národními/mezinárodními předpisy.

**2.3 Další nebezpečnost****Výsledky posouzení PBT a vPvB**

- **PBT:** Nedá se použít.
- **vPvB:** Nedá se použít.

### ODDÍL 3: Složení/informace o složkách

**3.1 Chemická charakteristika: Látky****Číslo CAS:**

67-66-3 chloroform

**Identifikační číslo(čísla)**· **Číslo ES:** 200-663-8· **Indexové číslo:** 602-006-00-4

CZ

(pokračování na straně 3)



# Bezpečnostní list

## podle 1907/2006/ES, Článek 31

Datum vydání: 19.03.2019

Revize: 19.03.2019

Obchodní označení: chloroform

(pokračování strany 2)

### ODDÍL 4: Pokyny pro první pomoc

- **4.1 Popis první pomoci**
- **Všeobecné pokyny:**  
Příznaky otravy se mohou projevit až po mnoha hodinách, proto je nutný lékařský dohled nejméně 48 hodin po nehodě.
- **Při nadýchání:**  
Přívod čerstvého vzduchu, případně kyslíkový přístroj, teplo. Při déle trvajících potížích konzultovat lékaře.  
Při bezvědomí uložit a přepravit ve stabilní poloze na boku.
- **Při styku s kůží:** Ihned omýt vodou a mýdlem a dobře opláchnout.
- **Při zasažení očí:**  
Oči s otevřenými víčky vyplachovat po více minut proudem tekoucí vody. Při přetrvávajících potížích se poradit s lékařem.
- **Při požití:** Ihned vyhledat lékaře.
- **4.2 Nejdůležitější akutní a opožděné symptomy a účinky** Další relevantní informace nejsou k dispozici.
- **4.3 Pokyn týkající se okamžité lékařské pomoci a zvláštního ošetření**  
Další relevantní informace nejsou k dispozici.

### ODDÍL 5: Opatření pro hašení požáru

- **5.1 Hasiva**
- **Vhodná hasiva:**  
CO<sub>2</sub>, hasící prášek nebo rozstříkované vodní paprsky. Větší ohně zdotat rozstříkovanými vodními paprsky nebo pěnou odolnou vůči alkoholu.
- **5.2 Zvláštní nebezpečnost vyplývající z látky nebo směsi** Další relevantní informace nejsou k dispozici.
- **5.3 Pokyny pro hasiče**
- **Zvláštní ochranné prostředky pro hasiče:** Použít ochranný dýchací přístroj.

### ODDÍL 6: Opatření v případě náhodného úniku

- **6.1 Opatření na ochranu osob, ochranné prostředky a nouzové postupy** Není nutné.
- **6.2 Opatření na ochranu životního prostředí:**  
Nenechat proniknout do kanalizace/povrchových vod/podzemních vod.
- **6.3 Metody a materiál pro omezení úniku a pro čištění:**  
Sebrat s materiály, vázícími kapaliny (písek, šterkový písek, pojidla kyselin, universální pojidla, piliny).  
Kontaminovaný materiál odstranit jako odpad podle bodu 13.  
Zajistit dostatečné větrání.
- **6.4 Odkaz na jiné oddíly**  
Informace o bezpečnému zacházení viz kapitola 7.  
Informace o osobní ochranné výstroji viz kapitola 8.  
Informace k odstranění viz kapitola 13.

### ODDÍL 7: Zacházení a skladování

- **7.1 Opatření pro bezpečné zacházení** Na pracovišti zabezpečit dobré větrání a odsávání.
- **Upozornění k ochraně před ohněm a explozí:** Nejsou nutná žádná zvláštní opatření.
- **7.2 Podmínky pro bezpečné skladování látek a směsí včetně neslučitelných látek a směsí**
- **Pokyny pro skladování:**
- **Požadavky na skladovací prostory a nádoby:** Žádné zvláštní požadavky.
- **Upozornění k hromadnému skladování:** Není nutné.
- **Další údaje k podmínkám skladování:** Nádrž držet neprodyšně uzavřenou.

(pokračování na straně 4)



# Bezpečnostní list

## podle 1907/2006/ES, Článek 31

Datum vydání: 19.03.2019

Revize: 19.03.2019

Obchodní označení: chloroform

(pokračování strany 3)

· 7.3 **Specifické konečné / specifická konečná použití** Další relevantní informace nejsou k dispozici.

### ODDÍL 8: Omezování expozice / osobní ochranné prostředky

· **Technická opatření:** Žádné další údaje, viz bod 7.· **8.1 Kontrolní parametry**· **Kontrolní parametry:****67-66-3 chloroform**

NPK	Krátkodobá hodnota: 20 mg/m <sup>3</sup> Dlouhodobá hodnota: 10 mg/m <sup>3</sup> D, I, P
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· **Další upozornění:** Jako podklad sloužily při zhotovení platné listiny.· **8.2 Omezování expozice**· **Osobní ochranné prostředky:**· **Všeobecná ochranná a hygienická opatření:**

Zdržovat od potravin, nápojů a krmiv.

Zašpiněné, nasáknuté šaty ihned vysvléci.

Před přestávkami a po práci umýt ruce.

Zamezit styku s pokožkou a zrakem.

· **Ochrana dýchacích orgánů:**

Při krátkodobém nebo nízkém zatížení použít dýchací přístroj s filtrem, při intenzivním nebo delším zatížení se musí použít dýchací přístroj nezávislý na okolním vzduchu.

· **Ochrana rukou:**

Ochranné rukavice

Materiál rukavic musí být nepropustný a odolný proti produktu / látce / směsi.

Vzhledem k tomu, že chybí testy, není možné doporučit materiál rukavic pro produkt / přípravek / chemickou směs.

Výběr materiálu rukavic proveďte podle času průniku, permeability a degradace.

· **Materiál rukavic**

Správný výběr rukavic nezávisí jen na materiálu, ale také na dalších kritériích, která se liší podle výrobce.

· **Doba průniku materiálem rukavic**

Je nutno u výrobce rukavic zjistit a dodržovat přesné časy průniku materiálem ochranných rukavic.

· **Ochrana očí:**

Ochranné brýle



Uzavřené ochranné brýle

### ODDÍL 9: Fyzikální a chemické vlastnosti

· **9.1 Informace o základních fyzikálních a chemických vlastnostech**· **Všeobecné údaje**· **Vzhled:**

Skupenství:

Kapalná

Barva:

Bezbarvá

(pokračování na straně 5)

## Bezpečnostní list podle 1907/2006/ES, Článek 31

Datum vydání: 19.03.2019

Revize: 19.03.2019

Obchodní označení: chloroform

(pokračování strany 4)

· <b>Zápach:</b>	Příjemný
· <b>Prahová hodnota zápachu:</b>	Není určeno.
· <b>Hodnota pH:</b>	Není určeno.
· <b>Změna stavu</b>	
<b>Bod tání/bod tuhnutí:</b>	-63 °C
<b>Počáteční bod varu a rozmezí bodu varu:</b>	62 °C
· <b>Bod vzplanutí:</b>	0 °C
· <b>Hořlavost (pevné látky, plyny):</b>	Nedá se použít.
· <b>Zápalná teplota:</b>	982 °C
· <b>Teplota rozkladu:</b>	Není určeno.
· <b>Teplota samovznícení:</b>	Není určeno.
· <b>Výbušné vlastnosti:</b>	I když produktu nehrozí nebezpečí exploze, je přesto možné nebezpečí exploze ve směsi par se vzduchem.
· <b>Meze výbušnosti:</b>	
<b>Dolní mez:</b>	Není určeno.
<b>Horní mez:</b>	Není určeno.
· <b>Tlak páry při 20 °C:</b>	210 hPa
· <b>Hustota při 20 °C:</b>	1,47988 g/cm <sup>3</sup>
· <b>Relativní hustota</b>	Není určeno.
· <b>Hustota páry:</b>	Není určeno.
· <b>Rychlost odpařování</b>	Není určeno.
· <b>Rozpustnost ve / směsitelnost s vodě při 20 °C:</b>	8 g/l
· <b>Rozdělovací koeficient: n-oktanol/voda:</b>	Není určeno.
· <b>Viskozita:</b>	
<b>Dynamicky při 20 °C:</b>	0,56 mPas
<b>Kinematicky:</b>	Není určeno.
· <b>9.2 Další informace</b>	Další relevantní informace nejsou k dispozici.

### ODDÍL 10: Stálost a reaktivita

- **10.1 Reaktivita** Další relevantní informace nejsou k dispozici.
- **10.2 Chemická stabilita**
- **Termický rozklad / Podmínky, kterých je nutno se vyvarovat:**  
Nedochází k rozkladu při doporučeném způsobu použití.
- **10.3 Možnost nebezpečných reakcí** Žádné nebezpečné reakce nejsou známy.
- **10.4 Podmínky, kterým je třeba zabránit** Další relevantní informace nejsou k dispozici.
- **10.5 Neslučitelné materiály:** Další relevantní informace nejsou k dispozici.
- **10.6 Nebezpečné produkty rozkladu:** Nejsou známy žádné nebezpečné produkty při rozkladu.

cz

(pokračování na straně 6)

# Bezpečnostní list

## podle 1907/2006/ES, Článek 31

Datum vydání: 19.03.2019

Revize: 19.03.2019

Obchodní označení: chloroform

(pokračování strany 5)

### ODDÍL 11: Toxikologické informace

#### 11.1 Informace o toxikologických účincích

##### Akutní toxicita

Zdraví škodlivý při požití.

Při styku s kůží může způsobit smrt.

Toxický při vdechování.

#### Zařazení relevantní hodnoty LD/LC 50:

Orálně	LD50	908 mg/kg (rat)
Pokožkou	LD50	75 mg/kg (rat)

##### Primární dráždivé účinky:

##### Žíravost/dráždivost pro kůži

Dráždí kůži.

##### Vážné poškození očí / podráždění očí

Způsobuje vážné podráždění očí.

##### Senzibilizace dýchacích cest / senzibilizace kůže

Na základě dostupných údajů nejsou kritéria pro klasifikaci splněna.

##### Účinky CMR (karcinogenita, mutagenita a toxicita pro reprodukci)

Mutagenita v zárodečných buňkách Na základě dostupných údajů nejsou kritéria pro klasifikaci splněna.

##### Karcinogenita

Podezření na vyvolání rakoviny.

##### Toxicita pro reprodukci

Podezření na poškození plodu v těle matky.

##### Toxicita pro specifické cílové orgány – jednorázová expozice

Na základě dostupných údajů nejsou kritéria pro klasifikaci splněna.

##### Toxicita pro specifické cílové orgány – opakovaná expozice

Způsobuje poškození orgánů při prodloužené nebo opakované expozici.

##### Nebezpečnost při vdechnutí

 Na základě dostupných údajů nejsou kritéria pro klasifikaci splněna.

### ODDÍL 12: Ekologické informace

#### 12.1 Toxicita

##### Aquatická toxicita:

 Další relevantní informace nejsou k dispozici.

##### 12.2 Perzistence a rozložitelnost

 Další relevantní informace nejsou k dispozici.

##### 12.3 Bioakumulační potenciál

 Další relevantní informace nejsou k dispozici.

##### 12.4 Mobilita v půdě

 Další relevantní informace nejsou k dispozici.

#### Další ekologické údaje:

##### Všeobecná upozornění:

Třída ohrožení vody 3 (zařazení v listině): silně ohrožuje vodu

Nesmí vniknout do spodní vody, povodí nebo do kanalizace, ani v malých množstvích.

Ohrožuje pitnou vodu už při proniknutí nepatrného množství do zeminy.

#### 12.5 Výsledky posouzení PBT a vPvB

##### PBT:

 Nedá se použít.

##### vPvB:

 Nedá se použít.

#### 12.6 Jiné nepříznivé účinky

 Další relevantní informace nejsou k dispozici.

### ODDÍL 13: Pokyny pro odstraňování

#### 13.1 Metody nakládání s odpady

##### Doporučení:

 Nesmí se odstraňovat společně s odpady z domácnosti. Nepřipustit únik do kanalizace.

(pokračování na straně 7)

# Bezpečnostní list

## podle 1907/2006/ES, Článek 31

Datum vydání: 19.03.2019

Revize: 19.03.2019

Obchodní označení: chloroform

(pokračování strany 6)

- **Kontaminované obaly:**
- **Doporučení:** Odstranění podle příslušných předpisů.

### ODDÍL 14: Informace pro přepravu

## · 14.1 UN číslo

· ADR, IMDG, IATA UN1888

## · 14.2 Oficiální (OSN) pojmenování pro přepravu

· ADR 1888 CHLOROFORM· IMDG, IATA CHLOROFORM

## · 14.3 Třída/třídy nebezpečnosti pro přepravu

· ADR, IMDG, IATA

· třída 6.1 Jedovaté látky· Etiketa 6.1

## · 14.4 Obalová skupina

· ADR, IMDG, IATA III· 14.5 Nebezpečnost pro životní prostředí: Nedá se použít.· 14.6 Zvláštní bezpečnostní opatření pro uživatele Varování: Jedovaté látky· Kemlerovo číslo: 60· EMS-skupina: 6.1-02· Segregation groups Liquid halogenated hydrocarbons· Stowage Category A· Stowage Code SW2 Clear of living quarters.

## · 14.7 Hromadná přeprava podle přílohy II úmluvy

**MARPOL a předpisu IBC** Nedá se použít.

## · Přeprava/další údaje:

## · ADR

· Omezené množství (LQ) 5L· Vyňatá množství (EQ) Kód: E1Nejvyšší čisté množství na vnitřní obal: 30 mlNejvyšší čisté množství na vnější obal: 1000 ml· Přepravní kategorie 2· Kód omezení pro tunely: E

## · IMDG

· Limited quantities (LQ) 5L· Excepted quantities (EQ) Code: E1Maximum net quantity per inner packaging: 30 mlMaximum net quantity per outer packaging: 1000 ml

· UN "Model Regulation":

UN 1888 CHLOROFORM, 6.1, III

CZ

(pokračování na straně 8)

# Bezpečnostní list

## podle 1907/2006/ES, Článek 31

Datum vydání: 19.03.2019

Revize: 19.03.2019

Obchodní označení: chloroform

(pokračování strany 7)

### ODDÍL 15: Informace o předpisech

- **15.1 Předpisy týkající se bezpečnosti, zdraví a životního prostředí/specifické právní předpisy týkající se látky nebo směsi**
- **Rady 2012/18/EU**
- **Nebezpečné látky jmenovitě uvedené - PŘÍLOHA I Látky neobsažena.**
- **Kategorie Seveso**  
H2 AKUTNÍ TOXICITA  
P5c HOŘLAVÉ KAPALINY
- **Kvalifikační množství (v tunách) při uplatnění požadavků pro podlimitní množství 50 t**
- **Kvalifikační množství (v tunách) při uplatnění požadavků pro nadlimitní množství 200 t**
- **Rady (ES) č. 1907/2006 PŘÍLOHA XVII Omezující podmínky: 3, 32, 40**
- **Rady (EU) č. 649/2012 Annex I Part 1**
- **15.2 Posouzení chemické bezpečnosti: Posouzení chemické bezpečnosti nebylo provedeno.**

### ODDÍL 16: Další informace

Údaje se opírají o dnešní stav našich vědomostí, nepředstavují však záruku vlastností produktu a nevznikají tak žádné smluvní právní vztahy.

- **Zkratky a akronymy:**  
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  
IATA: International Air Transport Association  
GHS: Globally Harmonised System of Classification and Labelling of Chemicals  
EINECS: European Inventory of Existing Commercial Chemical Substances  
CAS: Chemical Abstracts Service (division of the American Chemical Society)  
LC50: Lethal concentration, 50 percent  
LD50: Lethal dose, 50 percent  
PBT: Persistent, Bioaccumulative and Toxic  
vPvB: very Persistent and very Bioaccumulative  
Flam. Liq. 2: Hořlavé kapaliny – Kategorie 2  
Acute Tox. 4: Akutní toxicita – Kategorie 4  
Acute Tox. 2: Akutní toxicita – Kategorie 2  
Acute Tox. 3: Akutní toxicita – Kategorie 3  
Skin Irrit. 2: Žíravost/dráždivost pro kůži – Kategorie 2  
Eye Irrit. 2: Vážné poškození očí / podráždění očí – Kategorie 2  
Carc. 2: Karcinogenita – Kategorie 2  
Repr. 2: Toxicita pro reprodukci – Kategorie 2  
STOT RE 1: Toxicita pro specifické cílové orgány (opakovaná expozice) – Kategorie 1

# Veiligheidsinformatieblad volgens 1907/2006/EG, Artikel 31

datum van de druk: 19.03.2019

Herziening van: 19.03.2019

## RUBRIEK 1: Identificatie van de stof of het mengsel en van de vennootschap/onderneming

### · 1.1 Productidentificatie

· Handelsnaam: trichloormethaan

· Artikelnummer: 12540, 12541, 12550, 12551

· CAS-nummer:

67-66-3

· EC-nummer:

200-663-8

· Catalogusnummer:

602-006-00-4

· 1.2 Relevant geïdentificeerd gebruik van de stof of het mengsel en ontraden gebruik

Geen verdere relevante informatie verkrijgbaar.

· Toepassing van de stof / van de bereiding *Laboratoriumchemicaliën*

· 1.3 Details betreffende de verstrekker van het veiligheidsinformatieblad

· Fabrikant/leverancier:

*Electron Microscopy Sciences*

*1560 Industry Road*

*USA-Hatfield, PA 19440*

*Tel: 215-412-8400 Fax: 215-412-8450*

*email: sgkcck@aol.com*

*www.emsdiasum.com*

*Aurion*

*Binnenhaven 5*

*6709 PD Wageningen*

*The Netherlands*

*Tel: 31 317 415094*

*Fax: 31 317 415955*

*email: info@aurion.nl*

· Inlichtingengevende sector: *Product safety department*

· 1.4 Telefoonnummer voor noodgevallen:

*ChemTrec 1-800-424-9300 Contract CCN7661*

*1-703-527-3887*

## RUBRIEK 2: Identificatie van de gevaren

· 2.1 Indeling van de stof of het mengsel

· Indeling overeenkomstig Verordening (EG) nr. 1272/2008



GHS02 vlam

*Flam. Liq. 2 H225 Licht ontvlambare vloeistof en damp.*



GHS06 doodshoofd met gekruiste beenderen

*Acute Tox. 2 H310 Dodelijk bij contact met de huid.*

*Acute Tox. 3 H331 Giftig bij inademing.*



GHS08 gezondheidsgevaar

(Vervolg op blz. 2)

# Veiligheidsinformatieblad

## volgens 1907/2006/EG, Artikel 31

datum van de druk: 19.03.2019

Herziening van: 19.03.2019

**Handelsnaam: trichloormethaan**

(Vervolg van blz. 1)

Carc. 2 H351 Verdacht van het veroorzaken van kanker.  
 Repr. 2 H361d Wordt ervan verdacht het ongeboren kind te schaden.  
 STOT RE 1 H372 Veroorzaakt schade aan organen bij langdurige of herhaalde blootstelling.



GHS07

Acute Tox. 4 H302 Schadelijk bij inslikken.  
 Skin Irrit. 2 H315 Veroorzaakt huidirritatie.  
 Eye Irrit. 2 H319 Veroorzaakt ernstige oogirritatie.

### · 2.2 Etiketteringselementen

#### · Etikettering overeenkomstig Verordening (EG) nr. 1272/2008

De stof/product is geclassificeerd en geëtiketteerd volgens de CLP-verordening.

#### · Gevarenpictogrammen



GHS02

GHS06

GHS08

#### · Signaalwoord Gevaar

#### · Gevarenaanduidingen

H225 Licht ontvlambare vloeistof en damp.  
 H302 Schadelijk bij inslikken.  
 H310 Dodelijk bij contact met de huid.  
 H331 Giftig bij inademing.  
 H315 Veroorzaakt huidirritatie.  
 H319 Veroorzaakt ernstige oogirritatie.  
 H351 Verdacht van het veroorzaken van kanker.  
 H361d Wordt ervan verdacht het ongeboren kind te schaden.  
 H372 Veroorzaakt schade aan organen bij langdurige of herhaalde blootstelling.

#### · Veiligheidsaanbevelingen

P303+P361+P353 BIJ CONTACT MET DE HUID (of het haar): verontreinigde kleding onmiddellijk uittrekken.  
 Huid met water afspoelen/afdouchen.  
 P305+P351+P338 BIJ CONTACT MET DE OGEN: voorzichtig afspoelen met water gedurende een aantal minuten; contactlenzen verwijderen, indien mogelijk; blijven spoelen.  
 P310 Onmiddellijk een ANTIGIFCENTRUM/arts raadplegen.  
 P321 Specifieke behandeling vereist (zie op dit etiket).  
 P330 De mond spoelen.  
 P361+P364 Verontreinigde kleding onmiddellijk uittrekken en wassen alvorens deze opnieuw te gebruiken.  
 P405 Achter slot bewaren.  
 P501 De inhoud en de verpakking verwerken volgens de plaatselijke/regionale/nationale/internationale voorschriften.

#### · 2.3 Andere gevaren

#### · Resultaten van PBT- en zPzB-beoordeling

- **PBT:** Niet bruikbaar.
- **zPzB:** Niet bruikbaar.

NL

(Vervolg op blz. 3)



# Veiligheidsinformatieblad

## volgens 1907/2006/EG, Artikel 31

datum van de druk: 19.03.2019

Herziening van: 19.03.2019

Handelsnaam: trichloormethaan

(Vervolg van blz. 2)

### RUBRIEK 3: Samenstelling en informatie over de bestanddelen

- **3.1 Chemische karakterisering: Stoffen**
- **CAS-Nr. omschrijving**  
67-66-3 trichloormethaan
- **Identificatienummer(s)**
- **EC-nummer:** 200-663-8
- **Catalogusnummer:** 602-006-00-4

### RUBRIEK 4: Eerstehulpmaatregelen

- **4.1 Beschrijving van de eerstehulpmaatregelen**
- **Algemene informatie:**  
Het is mogelijk dat vergiftigingssymptomen pas na vele uren optreden. Om deze reden is medische controle gedurende minstens 48 uur na een ongeval noodzakelijk.
- **Na het inademen:**  
Frisse lucht toedienen, eventueel beademing, warmte. Wanneer de klachten niet ophouden, een arts raadplegen. Bij bewusteloosheid ligging en vervoer in stabiele zijligging.
- **Na huidcontact:** Onmiddellijk met water en zeep afwassen en goed naspoelen.
- **Na oogcontact:**  
De ogen gedurende verscheidene minuten onder stromend water afspoelen terwijl de oogspleet geopend blijft. Bij aanhoudende klachten een dokter raadplegen.
- **Na inslikken:** Onmiddellijk arts raadplegen.
- **4.2 Belangrijkste acute en uitgestelde symptomen en effecten** Geen verdere relevante informatie verkrijgbaar.
- **4.3 Vermelding van de vereiste onmiddellijke medische verzorging en speciale behandeling**  
Geen verdere relevante informatie verkrijgbaar.

### RUBRIEK 5: Brandbestrijdingsmaatregelen

- **5.1 Blusmiddelen**
- **Geschikte blusmiddelen:**  
CO<sub>2</sub>, bluspoeder of waterstraal. Grotere brand met waterstraal bestrijden of met schuim, dat tegen alcohol bestand is.
- **5.2 Speciale gevaren die door de stof of het mengsel worden veroorzaakt**  
Geen verdere relevante informatie verkrijgbaar.
- **5.3 Advies voor brandweerlieden**
- **Speciale beschermende kleding:** Ademhalingsstoestel aantrekken.

### RUBRIEK 6: Maatregelen bij het accidenteel vrijkomen van de stof of het mengsel

- **6.1 Persoonlijke voorzorgsmaatregelen, beschermde uitrusting en noodprocedures** Niet nodig.
- **6.2 Milieuvorzorgsmaatregelen:** Niet in de riolering/het oppervlaktewater/het grondwater laten terechtkomen.
- **6.3 Insluitings- en reinigingsmethoden en -materiaal:**  
Met vloeistofbindend materiaal (zand, bergmeel, zuurbinder, universele binder, zaagmeel) opnemen. Besmet materiaal zoals afval volgens punt 13 verwijderden. Voor voldoende ventilatie zorgen.
- **6.4 Verwijzing naar andere rubrieken**  
Informatie inzake veilig gebruik - zie hoofdstuk 7.  
Informatie inzake persoonlijke beschermingsuitrusting - zie hoofdstuk 8.

(Vervolg op blz. 4)



# Veiligheidsinformatieblad

## volgens 1907/2006/EG, Artikel 31

datum van de druk: 19.03.2019

Herziening van: 19.03.2019

**Handelsnaam: trichloormethaan**

(Vervolg van blz. 3)

Informatie inzake berging - zie hoofdstuk 13.

### RUBRIEK 7: Hantering en opslag

- **7.1 Voorzorgsmaatregelen voor het veilig hanteren van de stof of het mengsel**  
Voor goede ventilatie/afzuiging op de werkplaatsen zorgen.
- **Informatie m.b.t. brand- en ontploffingsgevaar:** Geen bijzondere maatregelen noodzakelijk.
- **7.2 Voorwaarden voor een veilige opslag, met inbegrip van incompatibele producten**
- **Opslag:**
- **Eisen ten opzichte van opslagruimte en tanks:** Geen bijzondere eisen.
- **Informatie m.b.t. gezamenlijke opslag:** Niet noodzakelijk.
- **Verdere inlichtingen over eisen m.b.t. de opslag:** Tanks ondoordringbaar gesloten houden.
- **7.3 Specifiek eindgebruik** Geen verdere relevante informatie verkrijgbaar.

### RUBRIEK 8: Maatregelen ter beheersing van blootstelling/persoonlijke bescherming

- **Aanvullende gegevens m.b.t. de inrichting van technische installaties:** Geen aanvullende gegevens. Zie 7.
- **8.1 Controleparameters**

- **Bestanddelen met grenswaarden die m.b.t. de werkruimte in acht genomen moeten worden:**

**67-66-3 trichloormethaan**

WG	Korte termijn waarde: 25 mg/m <sup>3</sup> , 5 ppm
	Lange termijn waarde: 5 mg/m <sup>3</sup> , 1 ppm

- **Aanvullende gegevens:** Als basis dienden lijsten die bij opstelling geldig waren.
- **8.2 Maatregelen ter beheersing van blootstelling**
- **Persoonlijke beschermingsvoorzieningen:**
- **Algemene beschermings- en gezondheidsmaatregelen:**  
Verwijderd houden van eet- en drinkwaren.  
Verontreinigde kleding onmiddellijk uittrekken.  
Vóór de pauze en aan het einde van werktijd handen wassen.  
Aanraking met de ogen en de huid vermijden.
- **Ademhalingsbescherming:**  
Bij korte of geringe belasting ademfiltertoestel; bij intensieve resp. langdurige expositie een van de omringende lucht onafhankelijk ademhalingsstoestel gebruiken.
- **Handbescherming:**



Veiligheidshandschoenen

- Het handschoenmateriaal moet ondoorlatend en bestand zijn tegen het product / de stof / de bereiding.  
Op grond van falende testen kan geen aanbeveling voor handschoenmateriaal voor het product / de bereiding / het chemicaliënmengsel afgegeven worden.  
Kies handschoenmateriaal rekening houdend met de penetratietijden, de permeatiegraden en de degradatie.
- **Handschoenmateriaal**  
De keuze van een geschikte handschoen is niet alleen afhankelijk van het materiaal, maar ook van andere kwaliteitskenmerken en verschilt van fabrikant tot fabrikant.
  - **Doordringingstijd van het handschoenmateriaal**  
De precieze penetratietijd kunt u te weten komen bij de handschoenfabrikant; houd er rekening mee.

(Vervolg op blz. 5)

# Veiligheidsinformatieblad

volgens 1907/2006/EG, Artikel 31

datum van de druk: 19.03.2019

Herziening van: 19.03.2019

**Handelsnaam:** trichloormethaan

(Vervolg van blz. 4)

- **Oogbescherming:**  
Veiligheidsbril



Nauw aansluitende veiligheidsbril

## RUBRIEK 9: Fysische en chemische eigenschappen

### · 9.1 Informatie over fysische en chemische basiseigenschappen

#### · Algemene gegevens

#### · Voorkomen:

· <b>Vorm:</b>	Vloeibaar
· <b>Kleur:</b>	Kleurloos
· <b>Geur:</b>	Aangenaam
· <b>Geurdrempelwaarde:</b>	Niet bepaald.

· **pH-waarde:** Niet bepaald.

#### · Toestandsverandering

· <b>Smelt-/vriespunt:</b>	-63 °C
· <b>Beginkookpunt en kooktraject:</b>	62 °C

· **Vlampunt:** 0 °C

· **Ontvlambaarheid (vast, gas):** Niet bruikbaar.

· **Ontstekingstemperatuur:** 982 °C

· **Ontledingstemperatuur:** Niet bepaald.

· **Zelfontbrandingstemperatuur:** Niet bepaald.

· **Ontploffingseigenschappen:** Het produkt is niet ontploffingsgevaarlijk, maar de vorming van ontploffingsgevaarlijke damp-/luchtmengsels is mogelijk.

#### · Ontploffingsgrenzen:

· <b>Onderste:</b>	Niet bepaald.
· <b>Bovenste:</b>	Niet bepaald.

· **Dampspanning bij 20 °C:** 210 hPa

· **Dichtheid bij 20 °C:** 1,47988 g/cm<sup>3</sup>

· **Relatieve dichtheid** Niet bepaald.

· **Dampdichtheid** Niet bepaald.

· **Verdampingssnelheid** Niet bepaald.

#### · Oplosbaarheid in/mengbaarheid met

· **Water bij 20 °C:** 8 g/l

· **Verdelingscoëfficiënt: n-octanol/water:** Niet bepaald.

#### · Viscositeit

· <b>Dynamisch bij 20 °C:</b>	0,56 mPas
· <b>Kinematisch:</b>	Niet bepaald.

· **9.2 Overige informatie** Geen verdere relevante informatie verkrijgbaar.

(Vervolg op blz. 6)

# Veiligheidsinformatieblad

## volgens 1907/2006/EG, Artikel 31

datum van de druk: 19.03.2019

Herziening van: 19.03.2019

Handelsnaam: trichloormethaan

(Vervolg van blz. 5)

### RUBRIEK 10: Stabiliteit en reactiviteit

- **10.1 Reactiviteit** Geen verdere relevante informatie verkrijgbaar.
- **10.2 Chemische stabiliteit**
- **Thermische afbraak / te vermijden omstandigheden:** Geen afbraak bij gebruik volgens voorschrift.
- **10.3 Mogelijke gevaarlijke reacties** Geen gevaarlijke reacties bekend.
- **10.4 Te vermijden omstandigheden** Geen verdere relevante informatie verkrijgbaar.
- **10.5 Chemisch op elkaar inwerkende materialen:** Geen verdere relevante informatie verkrijgbaar.
- **10.6 Gevaarlijke ontledingsproducten:** Geen gevaarlijke ontbindingsproducten bekend.

### RUBRIEK 11: Toxicologische informatie

- **11.1 Informatie over toxicologische effecten**

- **Acute toxiciteit**

Schadelijk bij inslikken.

Dodelijk bij contact met de huid.

Giftig bij inademing.

- **Indelingsrelevantie LD/LC50-waarden:**

Oraal	LD50	908 mg/kg (rat)
Dermaal	LD50	75 mg/kg (rat)

Dermaal	LD50	75 mg/kg (rat)
---------	------	----------------

- **Primaire aandoening:**

- **Huidcorrosie/-irritatie**

Veroorzaakt huidirritatie.

- **Ernstig oogletsel/oogirritatie**

Veroorzaakt ernstige oogirritatie.

- **Sensibilisatie van de luchtwegen/de huid**

Gebaseerd op beschikbare gegevens; aan de indelingscriteria is niet voldaan.

- **CMR-effecten (kankerverwekkendheid, mutageniteit en giftigheid voor de voortplanting)**

- **Mutageniteit in geslachtscellen** Gebaseerd op beschikbare gegevens; aan de indelingscriteria is niet voldaan.

- **Kankerverwekkendheid**

Verdacht van het veroorzaken van kanker.

- **Giftigheid voor de voortplanting**

Wordt ervan verdacht het ongeboren kind te schaden.

- **STOT bij eenmalige blootstelling** Gebaseerd op beschikbare gegevens; aan de indelingscriteria is niet voldaan.

- **STOT bij herhaalde blootstelling**

Veroorzaakt schade aan organen bij langdurige of herhaalde blootstelling.

- **Gevaar bij inademing** Gebaseerd op beschikbare gegevens; aan de indelingscriteria is niet voldaan.

### RUBRIEK 12: Ecologische informatie

- **12.1 Toxiciteit**

- **Aquatische toxiciteit:** Geen verdere relevante informatie verkrijgbaar.

- **12.2 Persistentie en afbreekbaarheid** Geen verdere relevante informatie verkrijgbaar.

- **12.3 Bioaccumulatie** Geen verdere relevante informatie verkrijgbaar.

- **12.4 Mobiliteit in de bodem** Geen verdere relevante informatie verkrijgbaar.

- **Verdere ecologische informatie:**

- **Algemene informatie:**

Waterbezwaarlijkheid (NL): B(4) Weinig schadelijk voor in water levende organismen

Gevaar voor water klasse 3 (D) (Lijstclassificatie): gevaar voor water groot

Niet lozen in grondwater, oppervlaktewater of riolering, ook niet in kleine hoeveelheden.

Gevaar voor drinkwater zelfs bij het uitlopen van zeer geringe hoeveelheden in de ondergrond.

(Vervolg op blz. 7)

# Veiligheidsinformatieblad

volgens 1907/2006/EG, Artikel 31

datum van de druk: 19.03.2019

Herziening van: 19.03.2019

**Handelsnaam:** trichloormethaan


(Vervolg van blz. 6)

- **12.5 Resultaten van PBT- en zPzB-beoordeling**
- **PBT:** Niet bruikbaar.
- **zPzB:** Niet bruikbaar.
- **12.6 Andere schadelijke effecten** Geen verdere relevante informatie verkrijgbaar.

## RUBRIEK 13: Instructies voor verwijdering

- **13.1 Afvalverwerkingsmethoden**
- **Aanbeveling:** Mag niet tesamen met huisvuil gestort worden of in de riolering terechtkomen.
- **Niet gereinigde verpakkingen:**
- **Aanbeveling:** Afvalverwijdering volgens overheidsbepalingen.

## RUBRIEK 14: Informatie met betrekking tot het vervoer

- |   |  |
|---|--|
| · <b>14.1 VN-nummer</b>   |  |
| · <b>ADR, IMDG, IATA</b>  | UN1888   |
| · <b>14.2 Juiste ladingnaam overeenkomstig de modelreglementen van de VN</b>        |  |
| · <b>ADR</b>  | 1888 CHLOROFORM  |
| · <b>IMDG, IATA</b>   | CHLOROFORM   |
| · <b>14.3 Transportgevarenklasse(n)</b>   |  |
| · <b>ADR, IMDG, IATA</b>  |  |
|  |  |
| · <b>klasse</b>   | 6.1 Giftige stoffen  |
| · <b>Etiket</b>   | 6.1  |
| · <b>14.4 Verpakkingsgroep:</b>   |  |
| · <b>ADR, IMDG, IATA</b>  | III  |
| · <b>14.5 Milieugevaren:</b>  | Niet bruikbaar.  |
| · <b>14.6 Bijzondere voorzorgen voor de gebruiker</b>                               | Waarschuwing: Giftige stoffen  |
| · <b>Kemler-getal:</b>  | 60   |
| · <b>EMS-nummer:</b>  | 6.1-02   |
| · <b>Segregation groups</b>   | Liquid halogenated hydrocarbons  |
| · <b>Stowage Category</b>   | A  |
| · <b>Stowage Code</b>   | SW2 Clear of living quarters.  |
| · <b>14.7 Vervoer in bulk overeenkomstig bijlage II bij Marpol en de IBC-code</b>   | Niet bruikbaar.  |
| · <b>Transport/verdere gegevens:</b>  |  |
| · <b>ADR</b>  |  |
| · <b>Beperkte hoeveelheden (LQ)</b>   | 5L   |
| · <b>Uitgezonderde hoeveelheden (EQ)</b>  | Code: E1<br>Grootste netto hoeveelheid per binnenverpakking: 30 ml<br>Grootste netto hoeveelheid per buitenverpakking: 1000 ml |
| · <b>Vervoerscategorie</b>  | 2  |

(Vervolg op blz. 8)

# Veiligheidsinformatieblad

## volgens 1907/2006/EG, Artikel 31

datum van de druk: 19.03.2019

Herziening van: 19.03.2019

**Handelsnaam:** trichloormethaan

(Vervolg van blz. 7)

· <b>Tunnelbeperkingscode</b>	E
· <b>IMDG</b>	
· <b>Limited quantities (LQ)</b>	5L
· <b>Excepted quantities (EQ)</b>	Code: E1 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 1000 ml
· <b>VN "Model Regulation":</b>	UN 1888 CHLOROFORM, 6.1, III

### RUBRIEK 15: Regelgeving

- **15.1 Specifieke veiligheids-, gezondheids- en milieureglementen en -wetgeving voor de stof of het mengsel**
- **SZW-lijst van kankerverwekkende stoffen** De stof is niet aanwezig.
- **SZW-lijst van mutagene stoffen** De stof is niet aanwezig.
- **NIET-limitatieve lijst van voor de voortplanting giftige stoffen - Vruchtbaarheid** De stof is niet aanwezig.
- **NIET-limitatieve lijst van voor de voortplanting giftige stoffen - Ontwikkeling 2**
- **NIET-limitatieve lijst van voor de voortplanting giftige stoffen - Borstvoeding** De stof is niet aanwezig.
- **Richtlijn 2012/18/EU**
- **Gevaarlijke stoffen die met naam genoemd worden - BIJLAGE I** De stof is niet aanwezig.
- **Seveso-categorie**  
H2 ACUUT TOXISCH  
P5c ONTVLAMBARE VLOEISTOFFEN
- **Drempelwaarde (ton) voor toepassing van voorschriften voor lagedrempelinrichtingen** 50 t
- **Drempelwaarde (ton) voor toepassing van voorschriften voor hogedrempelinrichtingen** 200 t
- **Verordening (EG) nr. 1907/2006 BIJLAGE XVII** Beperkingsvoorwaarden: 3, 32, 40
- **Verordening (EU) Nr. 649/2012 Annex I Part 1**
- **Nationale voorschriften:**
- **Gevaarklasse v. water:** Waterbezwaarlijkheid (NL): B(4) Weinig schadelijk voor in water levende organismen
- **15.2 Chemischeveiligheidsbeoordeling:** Een chemische veiligheidsbeoordeling is niet uitgevoerd.

### RUBRIEK 16: Overige informatie

Deze gegevens zijn gebaseerd op de huidige stand van onze kennis. Zij beschrijven echter geen garantie van producteigenschappen en vestigen geen contractuele rechtsbetrekking.

- **Afkortingen en acroniemen:**  
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  
IATA: International Air Transport Association  
GHS: Globally Harmonised System of Classification and Labelling of Chemicals  
EINECS: European Inventory of Existing Commercial Chemical Substances  
CAS: Chemical Abstracts Service (division of the American Chemical Society)  
LC50: Lethal concentration, 50 percent  
LD50: Lethal dose, 50 percent  
PBT: Persistent, Bioaccumulative and Toxic  
vPvB: very Persistent and very Bioaccumulative  
Flam. Liq. 2: Ontvlambare vloeistoffen – Categorie 2  
Acute Tox. 4: Acute toxiciteit – Categorie 4  
Acute Tox. 2: Acute toxiciteit – Categorie 2  
Acute Tox. 3: Acute toxiciteit – Categorie 3  
Skin Irrit. 2: Huidcorrosie/irritatie – Categorie 2  
Eye Irrit. 2: Ernstig oogletsel/oogirritatie – Categorie 2  
Carc. 2: Kankerverwekkendheid – Categorie 2  
Repr. 2: Voortplantingstoxiciteit – Categorie 2  
STOT RE 1: Specifieke doelorgaan toxiciteit bij herhaalde blootstelling – Categorie 1

# Fiche de données de sécurité

## selon 1907/2006/CE, Article 31

Date d'impression : 19.03.2019

Révision: 19.03.2019

### RUBRIQUE 1: Identification de la substance/du mélange et de la société/l'entreprise

· **1.1 Identificateur de produit**

· **Nom du produit:** *trichlorométhane*

· **Code du produit:** 12540, 12541, 12550, 12551

· **No CAS:**

67-66-3

· **Numéro CE:**

200-663-8

· **Numéro index:**

602-006-00-4

· **1.2 Utilisations identifiées pertinentes de la substance ou du mélange et utilisations déconseillées**

*Pas d'autres informations importantes disponibles.*

· **Emploi de la substance / de la préparation** *Produits chimiques pour laboratoires*

· **1.3 Renseignements concernant le fournisseur de la fiche de données de sécurité**

· **Producteur/fournisseur:**

*Electron Microscopy Sciences*

*1560 Industry Road*

*USA-Hatfield, PA 19440*

*Tel: 215-412-8400 Fax: 215-412-8450*

*email: sgkcck@aol.com*

*www.emsdiasum.com*

· **Service chargé des renseignements:** *Product safety department*

· **1.4 Numéro d'appel d'urgence:**

*ChemTrec 1-800-424-9300 Contract CCN7661*

*1-703-527-3887*

### RUBRIQUE 2: Identification des dangers

· **2.1 Classification de la substance ou du mélange**

· **Classification selon le règlement (CE) n° 1272/2008**



GHS02 flamme

*Flam. Liq. 2 H225 Liquide et vapeurs très inflammables.*



GHS06 tête de mort sur deux tibias

*Acute Tox. 2 H310 Mortel par contact cutané.*

*Acute Tox. 3 H331 Toxique par inhalation.*



GHS08 danger pour la santé

*Carc. 2 H351 Susceptible de provoquer le cancer.*

*Repr. 2 H361d Susceptible de nuire au fœtus.*

*STOT RE 1 H372 Risque avéré d'effets graves pour les organes à la suite d'expositions répétées ou d'une exposition prolongée.*

(suite page 2)

# Fiche de données de sécurité

## selon 1907/2006/CE, Article 31

Date d'impression : 19.03.2019

Révision: 19.03.2019

**Nom du produit:** trichlorométhane

(suite de la page 1)



GHS07

Acute Tox. 4 H302 Nocif en cas d'ingestion.  
 Skin Irrit. 2 H315 Provoque une irritation cutanée.  
 Eye Irrit. 2 H319 Provoque une sévère irritation des yeux.

- **2.2 Éléments d'étiquetage**
- **Étiquetage selon le règlement (CE) n° 1272/2008** La substance est classifiée et étiquetée selon le règlement CLP.
- **Pictogrammes de danger**



GHS02 GHS06 GHS08

- **Mention d'avertissement** Danger
- **Mentions de danger**
  - H225 Liquide et vapeurs très inflammables.
  - H302 Nocif en cas d'ingestion.
  - H310 Mortel par contact cutané.
  - H331 Toxique par inhalation.
  - H315 Provoque une irritation cutanée.
  - H319 Provoque une sévère irritation des yeux.
  - H351 Susceptible de provoquer le cancer.
  - H361d Susceptible de nuire au fœtus.
  - H372 Risque avéré d'effets graves pour les organes à la suite d'expositions répétées ou d'une exposition prolongée.
- **Conseils de prudence**
  - P303+P361+P353 EN CAS DE CONTACT AVEC LA PEAU (ou les cheveux): Enlever immédiatement tous les vêtements contaminés. Rincer la peau à l'eau/Se doucher.
  - P305+P351+P338 EN CAS DE CONTACT AVEC LES YEUX: rincer avec précaution à l'eau pendant plusieurs minutes. Enlever les lentilles de contact si la victime en porte et si elles peuvent être facilement enlevées. Continuer à rincer.
  - P310 Appeler immédiatement un CENTRE ANTIPOISON/un médecin.
  - P321 Traitement spécifique (voir sur cette étiquette).
  - P330 Rincer la bouche.
  - P361+P364 Enlever immédiatement tous les vêtements contaminés et les laver avant réutilisation.
  - P405 Garder sous clef.
  - P501 Éliminer le contenu/réceptacle conformément à la réglementation locale/régionale/nationale/internationale.
- **2.3 Autres dangers**
- **Résultats des évaluations PBT et vPvB**
- **PBT:** Non applicable.
- **vPvB:** Non applicable.

### RUBRIQUE 3: Composition/informations sur les composants

- **3.1 Caractérisation chimique: Substances**
- **No CAS Désignation**  
67-66-3 trichlorométhane

(suite page 3)



# Fiche de données de sécurité

## selon 1907/2006/CE, Article 31

Date d'impression : 19.03.2019

Révision: 19.03.2019

**Nom du produit:** trichlorométhane

(suite de la page 2)

- **Code(s) d'identification**
- **Numéro CE:** 200-663-8
- **Numéro index:** 602-006-00-4

### RUBRIQUE 4: Premiers secours

- **4.1 Description des premiers secours**
- **Remarques générales:**  
Les symptômes d'intoxication peuvent apparaître après de nombreuses heures seulement; une surveillance médicale est donc nécessaire au moins 48 heures après un accident.
- **Après inhalation:**  
Donner de l'air frais. Assistance respiratoire si nécessaire. Tenir le malade au chaud. Si les troubles persistent, consulter un médecin.  
En cas d'inconscience, coucher et transporter la personne en position latérale stable.
- **Après contact avec la peau:** Laver immédiatement à l'eau et au savon et bien rincer.
- **Après contact avec les yeux:**  
Rincer les yeux, pendant plusieurs minutes, sous l'eau courante en écartant bien les paupières. Si les troubles persistent, consulter un médecin.
- **Après ingestion:** Consulter immédiatement un médecin.
- **4.2 Principaux symptômes et effets, aigus et différés** Pas d'autres informations importantes disponibles.
- **4.3 Indication des éventuels soins médicaux immédiats et traitements particuliers nécessaires**  
Pas d'autres informations importantes disponibles.

### RUBRIQUE 5: Mesures de lutte contre l'incendie

- **5.1 Moyens d'extinction**
- **Moyens d'extinction:**  
CO<sub>2</sub>, poudre d'extinction ou eau pulvérisée. Combattre les foyers importants avec de l'eau pulvérisée ou de la mousse résistant à l'alcool.
- **5.2 Dangers particuliers résultant de la substance ou du mélange**  
Pas d'autres informations importantes disponibles.
- **5.3 Conseils aux pompiers**
- **Équipement spécial de sécurité:** Porter un appareil de protection respiratoire.

### RUBRIQUE 6: Mesures à prendre en cas de dispersion accidentelle

- **6.1 Précautions individuelles, équipement de protection et procédures d'urgence** Pas nécessaire.
- **6.2 Précautions pour la protection de l'environnement:**  
Ne pas rejeter dans les canalisations, dans les eaux de surface et dans les nappes d'eau souterraines.
- **6.3 Méthodes et matériel de confinement et de nettoyage:**  
Recueillir les liquides à l'aide d'un produit absorbant (sable, kieselguhr, neutralisant d'acide, liant universel, sciure).  
Évacuer les matériaux contaminés en tant que déchets conformément au point 13.  
Assurer une aération suffisante.
- **6.4 Référence à d'autres rubriques**  
Afin d'obtenir des informations pour une manipulation sûre, consulter le chapitre 7.  
Afin d'obtenir des informations sur les équipements de protection personnels, consulter le chapitre 8.  
Afin d'obtenir des informations sur l'élimination, consulter le chapitre 13.

FR

(suite page 4)



# Fiche de données de sécurité

## selon 1907/2006/CE, Article 31

Date d'impression : 19.03.2019

Révision: 19.03.2019

Nom du produit: trichlorométhane

(suite de la page 3)

### RUBRIQUE 7: Manipulation et stockage

- **7.1 Précautions à prendre pour une manipulation sans danger**  
Veiller à une bonne ventilation/aspiration du poste de travail.
- **Préventions des incendies et des explosions:** Aucune mesure particulière n'est requise.
- **7.2 Conditions d'un stockage sûr, y compris d'éventuelles incompatibilités**
- **Stockage:**
- **Exigences concernant les lieux et conteneurs de stockage:** Aucune exigence particulière.
- **Indications concernant le stockage commun:** Pas nécessaire.
- **Autres indications sur les conditions de stockage:** Tenir les emballages hermétiquement fermés.
- **7.3 Utilisation(s) finale(s) particulière(s)** Pas d'autres informations importantes disponibles.

### RUBRIQUE 8: Contrôles de l'exposition/protection individuelle

- **Indications complémentaires pour l'agencement des installations techniques:**  
Sans autre indication, voir point 7.

- **8.1 Paramètres de contrôle**

- **Composants présentant des valeurs-seuil à surveiller par poste de travail:**

#### 67-66-3 trichlorométhane

VME	Valeur momentanée: 250 mg/m <sup>3</sup> , 50 ppm
	Valeur à long terme: 10 mg/m <sup>3</sup> , 2 ppm
	C2, (11), risque de pénétration percutanée

- **Remarques supplémentaires:**  
Le présent document s'appuie sur les listes en vigueur au moment de son élaboration.
- **8.2 Contrôles de l'exposition**
- **Equipement de protection individuel:**
- **Mesures générales de protection et d'hygiène:**  
Tenir à l'écart des produits alimentaires, des boissons et de la nourriture pour animaux.  
Retirer immédiatement les vêtements souillés ou humectés.  
Se laver les mains avant les pauses et en fin de travail.  
Eviter tout contact avec les yeux et avec la peau.
- **Protection respiratoire:**  
En cas d'exposition faible ou de courte durée, utiliser un filtre respiratoire; en cas d'exposition intense ou durable, utiliser un appareil de respiration indépendant de l'air ambiant.
- **Protection des mains:**



Gants de protection

- Le matériau des gants doit être imperméable et résistant au produit / à la substance / à la préparation.  
À cause du manque de tests, aucune recommandation pour un matériau de gants pour le produit / la préparation / le mélange de produits chimiques ne peut être donnée.  
Choix du matériau des gants en fonction des temps de pénétration, du taux de perméabilité et de la dégradation.
- **Matériau des gants**  
Le choix de gants appropriés ne dépend pas seulement du matériau, mais également d'autres critères de qualité qui peuvent varier d'un fabricant à l'autre.
- **Temps de pénétration du matériau des gants**  
Le temps de pénétration exact est à déterminer par le fabricant des gants de protection et à respecter.

(suite page 5)

# Fiche de données de sécurité

## selon 1907/2006/CE, Article 31

Date d'impression : 19.03.2019

Révision: 19.03.2019

Nom du produit: trichlorométhane

(suite de la page 4)

- **Protection des yeux:**  
Lunettes de protection



Lunettes de protection hermétiques

### RUBRIQUE 9: Propriétés physiques et chimiques

#### · 9.1 Informations sur les propriétés physiques et chimiques essentielles

##### · Indications générales

##### · Aspect:

Forme:	Liquide
Couleur:	Incolore
Odeur:	Agréable
Seuil olfactif:	Non déterminé.

· valeur du pH: Non déterminé.

##### · Changement d'état

Point de fusion/point de congélation:	-63 °C
Point initial d'ébullition et intervalle d'ébullition:	62 °C

· Point d'éclair 0 °C

· Inflammabilité (solide, gaz): Non applicable.

· Température d'inflammation: 982 °C

· Température de décomposition: Non déterminé.

· Température d'auto-inflammabilité: Non déterminé.

· Propriétés explosives: Le produit n'est pas explosif; toutefois, des mélanges explosifs vapeur-air peuvent se former.

##### · Limites d'explosion:

Inférieure:	Non déterminé.
Supérieure:	Non déterminé.

· Pression de vapeur à 20 °C: 210 hPa

· Densité à 20 °C: 1,47988 g/cm<sup>3</sup>

· Densité relative Non déterminé.

· Densité de vapeur: Non déterminé.

· Taux d'évaporation: Non déterminé.

· Solubilité dans/miscibilité avec l'eau à 20 °C:

8 g/l

· Coefficient de partage: n-octanol/eau: Non déterminé.

##### · Viscosité:

Dynamique à 20 °C:	0,56 mPas
Cinématique:	Non déterminé.

· 9.2 Autres informations Pas d'autres informations importantes disponibles.

FR

(suite page 6)

# Fiche de données de sécurité

## selon 1907/2006/CE, Article 31

Date d'impression : 19.03.2019

Révision: 19.03.2019

Nom du produit: trichlorométhane

(suite de la page 5)

### RUBRIQUE 10: Stabilité et réactivité

- **10.1 Réactivité** Pas d'autres informations importantes disponibles.
- **10.2 Stabilité chimique**
- **Décomposition thermique/conditions à éviter:** Pas de décomposition en cas d'usage conforme.
- **10.3 Possibilité de réactions dangereuses** Aucune réaction dangereuse connue.
- **10.4 Conditions à éviter** Pas d'autres informations importantes disponibles.
- **10.5 Matières incompatibles:** Pas d'autres informations importantes disponibles.
- **10.6 Produits de décomposition dangereux:** Pas de produits de décomposition dangereux connus

### RUBRIQUE 11: Informations toxicologiques

- **11.1 Informations sur les effets toxicologiques**

- **Toxicité aiguë**  
Nocif en cas d'ingestion.  
Mortel par contact cutané.  
Toxique par inhalation.

- **Valeurs LD/LC50 déterminantes pour la classification:**

Oral	LD50	908 mg/kg (rat)
Dermique	LD50	75 mg/kg (rat)

- **Effet primaire d'irritation:**
- **Corrosion cutanée/irritation cutanée**  
Provoque une irritation cutanée.
- **Lésions oculaires graves/irritation oculaire**  
Provoque une sévère irritation des yeux.
- **Sensibilisation respiratoire ou cutanée**  
Compte tenu des données disponibles, les critères de classification ne sont pas remplis.
- **Effets CMR (cancérogène, mutagène et toxique pour la reproduction)**
- **Mutagenicité sur les cellules germinales**  
Compte tenu des données disponibles, les critères de classification ne sont pas remplis.
- **Cancérogénicité**  
Susceptible de provoquer le cancer.
- **Toxicité pour la reproduction**  
Susceptible de nuire au fœtus.
- **Toxicité spécifique pour certains organes cibles - exposition unique**  
Compte tenu des données disponibles, les critères de classification ne sont pas remplis.
- **Toxicité spécifique pour certains organes cibles - exposition répétée**  
Risque avéré d'effets graves pour les organes à la suite d'expositions répétées ou d'une exposition prolongée.
- **Danger par aspiration** Compte tenu des données disponibles, les critères de classification ne sont pas remplis.

### RUBRIQUE 12: Informations écologiques

- **12.1 Toxicité**
- **Toxicité aquatique:** Pas d'autres informations importantes disponibles.
- **12.2 Persistance et dégradabilité** Pas d'autres informations importantes disponibles.
- **12.3 Potentiel de bioaccumulation** Pas d'autres informations importantes disponibles.
- **12.4 Mobilité dans le sol** Pas d'autres informations importantes disponibles.
- **Autres indications écologiques:**
- **Indications générales:**  
Catégorie de pollution des eaux 3 (D) (classification selon liste): très polluant  
Ne pas laisser pénétrer dans la nappe phréatique, les eaux ou les canalisations, même pas en petite quantité.

(suite page 7)

# Fiche de données de sécurité

## selon 1907/2006/CE, Article 31

Date d'impression : 19.03.2019

Révision: 19.03.2019

Nom du produit: trichlorométhane


(suite de la page 6)

- Danger pour l'eau potable dès fuite d'une quantité minime dans le sous-sol.
- **12.5 Résultats des évaluations PBT et VPVB**
- **PBT:** Non applicable.
- **vPvB:** Non applicable.
- **12.6 Autres effets néfastes** Pas d'autres informations importantes disponibles.

### RUBRIQUE 13: Considérations relatives à l'élimination

- **13.1 Méthodes de traitement des déchets**
- **Recommandation:** Ne doit pas être évacué avec les ordures ménagères. Ne pas laisser pénétrer dans les égouts.
- **Emballages non nettoyés:**
- **Recommandation:** Evacuation conformément aux prescriptions légales.

### RUBRIQUE 14: Informations relatives au transport

- |  |   |
|--|---|
| <ul style="list-style-type: none"> <li>· <b>14.1 Numéro ONU</b></li> <li>· <b>ADR, IMDG, IATA</b></li> </ul>   | <p style="text-align: right;">UN1888</p>  |
| <ul style="list-style-type: none"> <li>· <b>14.2 Désignation officielle de transport de l'ONU</b></li> <li>· <b>ADR</b></li> <li>· <b>IMDG, IATA</b></li> </ul>  | <p style="text-align: right;">1888 CHLOROFORME<br/>CHLOROFORM</p>   |
| <ul style="list-style-type: none"> <li>· <b>14.3 Classe(s) de danger pour le transport</b></li> <li>· <b>ADR, IMDG, IATA</b></li> </ul> <div style="text-align: center; margin: 10px 0;">  </div> <ul style="list-style-type: none"> <li>· <b>Classe</b></li> <li>· <b>Étiquette</b></li> </ul> | <p style="text-align: right;">6.1 Matières toxiques.<br/>6.1</p>  |
| <ul style="list-style-type: none"> <li>· <b>14.4 Groupe d'emballage</b></li> <li>· <b>ADR, IMDG, IATA</b></li> </ul>   | <p style="text-align: right;">III</p>   |
| <ul style="list-style-type: none"> <li>· <b>14.5 Dangers pour l'environnement:</b></li> </ul>  | <p style="text-align: right;">Non applicable.</p>   |
| <ul style="list-style-type: none"> <li>· <b>14.6 Précautions particulières à prendre par l'utilisateur</b></li> <li>· <b>Indice Kemler:</b></li> <li>· <b>No EMS:</b></li> <li>· <b>Segregation groups</b></li> <li>· <b>Stowage Category</b></li> <li>· <b>Stowage Code</b></li> </ul>  | <p style="text-align: right;">Attention: Matières toxiques.<br/>60<br/>6.1-02<br/>Liquid halogenated hydrocarbons<br/>A<br/>SW2 Clear of living quarters.</p> |
| <ul style="list-style-type: none"> <li>· <b>14.7 Transport en vrac conformément à l'annexe II de la convention Marpol et au recueil IBC</b></li> </ul>   | <p style="text-align: right;">Non applicable.</p>   |
| <ul style="list-style-type: none"> <li>· <b>Indications complémentaires de transport:</b></li> </ul>   |   |
| <ul style="list-style-type: none"> <li>· <b>ADR</b></li> <li>· <b>Quantités limitées (LQ)</b></li> </ul>   | <p style="text-align: right;">5L</p>  |

(suite page 8)

FR

# Fiche de données de sécurité

## selon 1907/2006/CE, Article 31

Date d'impression : 19.03.2019

Révision: 19.03.2019

Nom du produit: trichlorométhane

(suite de la page 7)

· <b>Quantités exceptées (EQ)</b>	Code: E1 Quantité maximale nette par emballage intérieur: 30 ml Quantité maximale nette par emballage extérieur: 1000 ml
· <b>Catégorie de transport</b>	2
· <b>Code de restriction en tunnels</b>	E
<hr style="border-top: 1px dashed #000;"/>	
· <b>IMDG</b>	
· <b>Limited quantities (LQ)</b>	5L
· <b>Excepted quantities (EQ)</b>	Code: E1 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 1000 ml
· <b>"Règlement type" de l'ONU:</b>	UN 1888 CHLOROFORME, 6.1, III

### RUBRIQUE 15: Informations relatives à la réglementation

- **15.1 Réglementations/législation particulières à la substance ou au mélange en matière de sécurité, de santé et d'environnement**
- Directive 2012/18/UE
- **Substances dangereuses désignées - ANNEXE I** la substance n'est pas comprise
- **Catégorie SEVESO**  
H2 TOXICITÉ AIGUË  
P5c LIQUIDES INFLAMMABLES
- **Quantité seuil (tonnes) pour l'application des exigences relatives au seuil bas** 50 t
- **Quantité seuil (tonnes) pour l'application des exigences relatives au seuil haut** 200 t
- **RÈGLEMENT (CE) N° 1907/2006 ANNEXE XVII** Conditions de limitation: 3, 32, 40
- **Règlement (CE) N° 649/2012 Annex I Part 1**
- **15.2 Évaluation de la sécurité chimique:** Une évaluation de la sécurité chimique n'a pas été réalisée.

### RUBRIQUE 16: Autres informations

Ces indications sont fondées sur l'état actuel de nos connaissances, mais ne constituent pas une garantie quant aux propriétés du produit et ne donnent pas lieu à un rapport juridique contractuel.

- **Acronymes et abréviations:**  
ADR: Accord européen sur le transport des marchandises dangereuses par Route  
IMDG: International Maritime Code for Dangerous Goods  
IATA: International Air Transport Association  
GHS: Globally Harmonised System of Classification and Labelling of Chemicals  
EINECS: European Inventory of Existing Commercial Chemical Substances  
CAS: Chemical Abstracts Service (division of the American Chemical Society)  
LC50: Lethal concentration, 50 percent  
LD50: Lethal dose, 50 percent  
PBT: Persistent, Bioaccumulative and Toxic  
vPvB: very Persistent and very Bioaccumulative  
Flam. Liq. 2: Liquides inflammables – Catégorie 2  
Acute Tox. 4: Toxicité aiguë – Catégorie 4  
Acute Tox. 2: Toxicité aiguë – Catégorie 2  
Acute Tox. 3: Toxicité aiguë – Catégorie 3  
Skin Irrit. 2: Corrosion cutanée/irritation cutanée – Catégorie 2  
Eye Irrit. 2: Lésions oculaires graves/irritation oculaire – Catégorie 2  
Carc. 2: Cancérogénicité – Catégorie 2  
Repr. 2: Toxicité pour la reproduction – Catégorie 2  
STOT RE 1: Toxicité spécifique pour certains organes cibles (exposition répétée) – Catégorie 1

# Sicherheitsdatenblatt

## gemäß 1907/2006/EG, Artikel 31

Druckdatum: 19.03.2019

überarbeitet am: 19.03.2019

### ABSCHNITT 1: Bezeichnung des Stoffs beziehungsweise des Gemischs und des Unternehmens

· **1.1 Produktidentifikator**

· **Handelsname:** Trichlormethan

· **Artikelnummer:** 12540, 12541, 12550, 12551

· **CAS-Nummer:**

67-66-3

· **EG-Nummer:**

200-663-8

· **Indexnummer:**

602-006-00-4

· **1.2 Relevante identifizierte Verwendungen des Stoffs oder Gemischs und Verwendungen, von denen abgeraten wird**

Keine weiteren relevanten Informationen verfügbar.

· **Verwendung des Stoffes / des Gemischs** Laborchemikalien

· **1.3 Einzelheiten zum Lieferanten, der das Sicherheitsdatenblatt bereitstellt**

· **Hersteller/Lieferant:**

Electron Microscopy Sciences

1560 Industry Road

USA-Hatfield, PA 19440

Tel: 215-412-8400 Fax: 215-412-8450

email: sgkcck@aol.com

www.emsdiasum.com

Science Services GmbH

Unterhachinger Str. 75

81737 München Germany

Tel: +49(0)89 18 93 668-0

safety@scienceservices.de

Deutschland: +49 (0)89 19240, 24h Giftnotruf Munchen, www.toxinfo.org

Osterreich: +43 1406 43 43, Gesundheit Osterreich GmbH, 24 h

· **Auskunftgebender Bereich:** Product safety department

· **1.4 Notrufnummer:**

ChemTrec 1-800-424-9300 Contract CCN7661

1-703-527-3887

### ABSCHNITT 2: Mögliche Gefahren

· **2.1 Einstufung des Stoffs oder Gemischs**

· **Einstufung gemäß Verordnung (EG) Nr. 1272/2008**



GHS02 Flamme

Flam. Liq. 2 H225 Flüssigkeit und Dampf leicht entzündbar.



GHS06 Totenkopf mit gekreuzten Knochen

Acute Tox. 2 H310 Lebensgefahr bei Hautkontakt.

Acute Tox. 3 H331 Giftig bei Einatmen.

(Fortsetzung auf Seite 2)

# Sicherheitsdatenblatt

## gemäß 1907/2006/EG, Artikel 31

Druckdatum: 19.03.2019

überarbeitet am: 19.03.2019

**Handelsname: Trichlormethan**

(Fortsetzung von Seite 1)



GHS08 Gesundheitsgefahr

Carc. 2 H351 Kann vermutlich Krebs erzeugen.  
 Repr. 2 H361d Kann vermutlich das Kind im Mutterleib schädigen.  
 STOT RE 1 H372 Schädigt die Organe bei längerer oder wiederholter Exposition.



GHS07

Acute Tox. 4 H302 Gesundheitsschädlich bei Verschlucken.  
 Skin Irrit. 2 H315 Verursacht Hautreizungen.  
 Eye Irrit. 2 H319 Verursacht schwere Augenreizung.

### · 2.2 Kennzeichnungselemente

- **Kennzeichnung gemäß Verordnung (EG) Nr. 1272/2008**  
Der Stoff ist gemäß CLP-Verordnung eingestuft und gekennzeichnet.
- **Gefahrenpiktogramme**



GHS02



GHS06



GHS08

### · **Signalwort Gefahr**

### · **Gefahrenhinweise**

H225 Flüssigkeit und Dampf leicht entzündbar.  
 H302 Gesundheitsschädlich bei Verschlucken.  
 H310 Lebensgefahr bei Hautkontakt.  
 H331 Giftig bei Einatmen.  
 H315 Verursacht Hautreizungen.  
 H319 Verursacht schwere Augenreizung.  
 H351 Kann vermutlich Krebs erzeugen.  
 H361d Kann vermutlich das Kind im Mutterleib schädigen.  
 H372 Schädigt die Organe bei längerer oder wiederholter Exposition.

### · **Sicherheitshinweise**

P303+P361+P353 BEI BERÜHRUNG MIT DER HAUT (oder dem Haar): Alle kontaminierten Kleidungsstücke sofort ausziehen. Haut mit Wasser abwaschen/duschen.  
 P305+P351+P338 BEI KONTAKT MIT DEN AUGEN: Einige Minuten lang behutsam mit Wasser spülen. Eventuell vorhandene Kontaktlinsen nach Möglichkeit entfernen. Weiter spülen.  
 P310 Sofort GIFTINFORMATIONSZENTRUM/Arzt anrufen.  
 P321 Besondere Behandlung (siehe auf diesem Kennzeichnungsetikett).  
 P330 Mund ausspülen.  
 P361+P364 Alle kontaminierten Kleidungsstücke sofort ausziehen und vor erneutem Tragen waschen.  
 P405 Unter Verschluss aufbewahren.  
 P501 Entsorgung des Inhalts / des Behälters gemäß den örtlichen / regionalen / nationalen / internationalen Vorschriften.

### · 2.3 Sonstige Gefahren

### · **Ergebnisse der PBT- und vPvB-Beurteilung**

- **PBT:** Nicht anwendbar.

(Fortsetzung auf Seite 3)



# Sicherheitsdatenblatt

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**Handelsname: Trichlormethan**

· **vPvB:** Nicht anwendbar.

(Fortsetzung von Seite 2)

### ABSCHNITT 3: Zusammensetzung/Angaben zu Bestandteilen

- **3.1 Chemische Charakterisierung: Stoffe**
- **CAS-Nr. Bezeichnung**  
67-66-3 Trichlormethan
- **Identifikationsnummer(n)**
- **EG-Nummer:** 200-663-8
- **Indexnummer:** 602-006-00-4

### ABSCHNITT 4: Erste-Hilfe-Maßnahmen

- **4.1 Beschreibung der Erste-Hilfe-Maßnahmen**
- **Allgemeine Hinweise:**  
Vergiftungssymptome können erst nach vielen Stunden auftreten, deshalb ärztliche Überwachung mindestens 48 Stunden nach einem Unfall.
- **Nach Einatmen:**  
Frischlufzufuhr, gegebenenfalls Atemspende, Wärme. Bei anhaltenden Beschwerden Arzt konsultieren.  
Bei Bewusstlosigkeit Lagerung und Transport in stabiler Seitenlage.
- **Nach Hautkontakt:** Sofort mit Wasser und Seife abwaschen und gut nachspülen.
- **Nach Augenkontakt:**  
Augen mehrere Minuten bei geöffnetem Lidspalt unter fließendem Wasser spülen. Bei anhaltenden Beschwerden Arzt konsultieren.
- **Nach Verschlucken:** Sofort Arzt aufsuchen.
- **4.2 Wichtigste akute und verzögert auftretende Symptome und Wirkungen**  
Keine weiteren relevanten Informationen verfügbar.
- **4.3 Hinweise auf ärztliche Soforthilfe oder Spezialbehandlung**  
Keine weiteren relevanten Informationen verfügbar.

### ABSCHNITT 5: Maßnahmen zur Brandbekämpfung

- **5.1 Löschmittel**
- **Geeignete Löschmittel:**  
CO<sub>2</sub>, Löschpulver oder Wassersprühstrahl. Größeren Brand mit Wassersprühstrahl oder alkoholbeständigem Schaum bekämpfen.
- **5.2 Besondere vom Stoff oder Gemisch ausgehende Gefahren**  
Keine weiteren relevanten Informationen verfügbar.
- **5.3 Hinweise für die Brandbekämpfung**
- **Besondere Schutzausrüstung:** Atemschutzgerät anlegen.

### ABSCHNITT 6: Maßnahmen bei unbeabsichtigter Freisetzung

- **6.1 Personenbezogene Vorsichtsmaßnahmen, Schutzausrüstungen und in Notfällen anzuwendende Verfahren**  
Nicht erforderlich.
- **6.2 Umweltschutzmaßnahmen:** Nicht in die Kanalisation/Oberflächenwasser/Grundwasser gelangen lassen.
- **6.3 Methoden und Material für Rückhaltung und Reinigung:**  
Mit flüssigkeitsbindendem Material (Sand, Kieselgur, Säurebinder, Universalbinder, Sägemehl) aufnehmen.  
Kontaminiertes Material als Abfall nach Abschnitt 13 entsorgen.  
Für ausreichende Lüftung sorgen.

(Fortsetzung auf Seite 4)



# Sicherheitsdatenblatt

## gemäß 1907/2006/EG, Artikel 31

Druckdatum: 19.03.2019

überarbeitet am: 19.03.2019

**Handelsname: Trichlormethan**

(Fortsetzung von Seite 3)

- **6.4 Verweis auf andere Abschnitte**  
Informationen zur sicheren Handhabung siehe Abschnitt 7.  
Informationen zur persönlichen Schutzausrüstung siehe Abschnitt 8.  
Informationen zur Entsorgung siehe Abschnitt 13.

### ABSCHNITT 7: Handhabung und Lagerung

- **7.1 Schutzmaßnahmen zur sicheren Handhabung** Für gute Belüftung/Absaugung am Arbeitsplatz sorgen.
- **Hinweise zum Brand- und Explosionsschutz:** Keine besonderen Maßnahmen erforderlich.
- **7.2 Bedingungen zur sicheren Lagerung unter Berücksichtigung von Unverträglichkeiten**
- **Lagerung:**
- **Anforderung an Lagerräume und Behälter:** Keine besonderen Anforderungen.
- **Zusammenlagerungshinweise:** Nicht erforderlich.
- **Weitere Angaben zu den Lagerbedingungen:** Behälter dicht geschlossen halten.
- **Lagerklasse:**
- **Klassifizierung nach Betriebssicherheitsverordnung (BetrSichV):** Entzündbare Flüssigkeiten
- **7.3 Spezifische Endanwendungen** Keine weiteren relevanten Informationen verfügbar.

### ABSCHNITT 8: Begrenzung und Überwachung der Exposition/Persönliche Schutzausrüstungen

- **Zusätzliche Hinweise zur Gestaltung technischer Anlagen:** Keine weiteren Angaben, siehe Abschnitt 7.
- **8.1 Zu überwachende Parameter**

- **Bestandteile mit arbeitsplatzbezogenen, zu überwachenden Grenzwerten:**

67-66-3 Trichlormethan

AGW	Langzeitwert: 2,5 mg/m <sup>3</sup> , 0,5 ml/m <sup>3</sup> 2(II);DFG, EU, Y, H, X
-----	---

- **Zusätzliche Hinweise:** Als Grundlage dienen die bei der Erstellung gültigen Listen.
- **8.2 Begrenzung und Überwachung der Exposition**
- **Persönliche Schutzausrüstung:**
- **Allgemeine Schutz- und Hygienemaßnahmen:**  
Von Nahrungsmitteln, Getränken und Futtermitteln fernhalten.  
Beschmutzte, getränkte Kleidung sofort ausziehen.  
Vor den Pausen und bei Arbeitsende Hände waschen.  
Berührung mit den Augen und der Haut vermeiden.
- **Atemschutz:**  
Bei kurzzeitiger oder geringer Belastung Atemfiltergerät; bei intensiver bzw. längerer Exposition unluftunabhängiges Atemschutzgerät verwenden.
- **Handschutz:**



Schutzhandschuhe

Das Handschuhmaterial muss undurchlässig und beständig gegen das Produkt / den Stoff / die Zubereitung sein. Aufgrund fehlender Tests kann keine Empfehlung zum Handschuhmaterial für das Produkt / die Zubereitung / das Chemikaliengemisch abgegeben werden.  
Auswahl des Handschuhmaterials unter Beachtung der Durchbruchzeiten, Permeationsraten und der Degradation.

(Fortsetzung auf Seite 5)

# Sicherheitsdatenblatt

## gemäß 1907/2006/EG, Artikel 31

Druckdatum: 19.03.2019

überarbeitet am: 19.03.2019

**Handelsname: Trichlormethan**

(Fortsetzung von Seite 4)

**· Handschuhmaterial**

Die Auswahl eines geeigneten Handschuhs ist nicht nur vom Material, sondern auch von weiteren Qualitätsmerkmalen abhängig und von Hersteller zu Hersteller unterschiedlich.

**· Durchdringungszeit des Handschuhmaterials**

Die genaue Durchbruchzeit ist beim Schutzhandschuhhersteller zu erfahren und einzuhalten.

**· Augenschutz:**

Schutzbrille



Dichtschließende Schutzbrille

### ABSCHNITT 9: Physikalische und chemische Eigenschaften

**· 9.1 Angaben zu den grundlegenden physikalischen und chemischen Eigenschaften****· Allgemeine Angaben****· Aussehen:**

<b>Form:</b>	Flüssig
<b>Farbe:</b>	Farblos
<b>Geruch:</b>	Angenehm
<b>Geruchsschwelle:</b>	Nicht bestimmt.

**· pH-Wert:** Nicht bestimmt.

**· Zustandsänderung**

<b>Schmelzpunkt/Gefrierpunkt:</b>	-63 °C
<b>Siedebeginn und Siedebereich:</b>	62 °C

**· Flammpunkt:** 0 °C

**· Entzündbarkeit (fest, gasförmig):** Nicht anwendbar.

**· Zündtemperatur:** 982 °C

**· Zersetzungstemperatur:** Nicht bestimmt.

**· Selbstentzündungstemperatur:** Nicht bestimmt.

**· Explosive Eigenschaften:** Das Produkt ist nicht explosionsgefährlich, jedoch ist die Bildung explosionsgefährlicher Dampf-/Luftgemische möglich.

**· Explosionsgrenzen:**

<b>Untere:</b>	Nicht bestimmt.
<b>Obere:</b>	Nicht bestimmt.

**· Dampfdruck bei 20 °C:** 210 hPa

**· Dichte bei 20 °C:** 1,47988 g/cm<sup>3</sup>

**· Relative Dichte** Nicht bestimmt.

**· Damfdichte** Nicht bestimmt.

**· Verdampfungsgeschwindigkeit** Nicht bestimmt.

**· Löslichkeit in / Mischbarkeit mit**

**Wasser bei 20 °C:** 8 g/l

**· Verteilungskoeffizient: n-Octanol/Wasser:** Nicht bestimmt.

**· Viskosität:**

**Dynamisch bei 20 °C:** 0,56 mPas

(Fortsetzung auf Seite 6)

# Sicherheitsdatenblatt

## gemäß 1907/2006/EG, Artikel 31

Druckdatum: 19.03.2019

überarbeitet am: 19.03.2019

**Handelsname: Trichlormethan**

(Fortsetzung von Seite 5)

- |  |   |
|--|---|
| <b>Kinematisch:</b><br><b>· 9.2 Sonstige Angaben</b> | Nicht bestimmt.<br>Keine weiteren relevanten Informationen verfügbar. |
|--|---|

### ABSCHNITT 10: Stabilität und Reaktivität

- **10.1 Reaktivität** Keine weiteren relevanten Informationen verfügbar.
- **10.2 Chemische Stabilität**
- **Thermische Zersetzung / zu vermeidende Bedingungen:**  
Keine Zersetzung bei bestimmungsgemäßer Verwendung.
- **10.3 Möglichkeit gefährlicher Reaktionen** Keine gefährlichen Reaktionen bekannt.
- **10.4 Zu vermeidende Bedingungen** Keine weiteren relevanten Informationen verfügbar.
- **10.5 Unverträgliche Materialien:** Keine weiteren relevanten Informationen verfügbar.
- **10.6 Gefährliche Zersetzungsprodukte:** Keine gefährlichen Zersetzungsprodukte bekannt.

### ABSCHNITT 11: Toxikologische Angaben

- **11.1 Angaben zu toxikologischen Wirkungen**
- **Akute Toxizität**  
Gesundheitsschädlich bei Verschlucken.  
Lebensgefahr bei Hautkontakt.  
Giftig bei Einatmen.

#### · Einstufungsrelevante LD/LC50-Werte:

Oral	LD50	908 mg/kg (rat)
Dermal	LD50	75 mg/kg (rat)

- **Primäre Reizwirkung:**
- **Ätz-/Reizwirkung auf die Haut**  
Verursacht Hautreizungen.
- **Schwere Augenschädigung/-reizung**  
Verursacht schwere Augenreizung.
- **Sensibilisierung der Atemwege/Haut** Aufgrund der verfügbaren Daten sind die Einstufungskriterien nicht erfüllt.
- **CMR-Wirkungen (krebserzeugende, erbgutverändernde und fortpflanzungsgefährdende Wirkung)**
- **Keimzell-Mutagenität** Aufgrund der verfügbaren Daten sind die Einstufungskriterien nicht erfüllt.
- **Karzinogenität**  
Kann vermutlich Krebs erzeugen.
- **Reproduktionstoxizität**  
Kann vermutlich das Kind im Mutterleib schädigen.
- **Spezifische Zielorgan-Toxizität bei einmaliger Exposition**  
Aufgrund der verfügbaren Daten sind die Einstufungskriterien nicht erfüllt.
- **Spezifische Zielorgan-Toxizität bei wiederholter Exposition**  
Schädigt die Organe bei längerer oder wiederholter Exposition.
- **Aspirationsgefahr** Aufgrund der verfügbaren Daten sind die Einstufungskriterien nicht erfüllt.

### ABSCHNITT 12: Umweltbezogene Angaben

- **12.1 Toxizität**
- **Aquatische Toxizität:** Keine weiteren relevanten Informationen verfügbar.
- **12.2 Persistenz und Abbaubarkeit** Keine weiteren relevanten Informationen verfügbar.
- **12.3 Bioakkumulationspotenzial** Keine weiteren relevanten Informationen verfügbar.
- **12.4 Mobilität im Boden** Keine weiteren relevanten Informationen verfügbar.

(Fortsetzung auf Seite 7)

# Sicherheitsdatenblatt

## gemäß 1907/2006/EG, Artikel 31

Druckdatum: 19.03.2019

überarbeitet am: 19.03.2019

**Handelsname: Trichlormethan**


(Fortsetzung von Seite 6)

- **Weitere ökologische Hinweise:**
- **Allgemeine Hinweise:**  
Wassergefährdungsklasse 3 (Listeneinstufung): stark wassergefährdend  
Nicht in das Grundwasser, in Gewässer oder in die Kanalisation gelangen lassen, auch nicht in kleinen Mengen.  
Trinkwassergefährdung bereits beim Auslaufen geringster Mengen in den Untergrund.
- **12.5 Ergebnisse der PBT- und vPvB-Beurteilung**
- **PBT:** Nicht anwendbar.
- **vPvB:** Nicht anwendbar.
- **12.6 Andere schädliche Wirkungen** Keine weiteren relevanten Informationen verfügbar.

### ABSCHNITT 13: Hinweise zur Entsorgung

- **13.1 Verfahren der Abfallbehandlung**
- **Empfehlung:** Darf nicht zusammen mit Hausmüll entsorgt werden. Nicht in die Kanalisation gelangen lassen.
- **Ungereinigte Verpackungen:**
- **Empfehlung:** Entsorgung gemäß den behördlichen Vorschriften.

### ABSCHNITT 14: Angaben zum Transport

- |  |   |
|--|---|
| <ul style="list-style-type: none"> <li>· <b>14.1 UN-Nummer</b></li> <li>· <b>ADR, IMDG, IATA</b></li> </ul>  | <p style="text-align: right;">UN1888</p>  |
| <ul style="list-style-type: none"> <li>· <b>14.2 Ordnungsgemäße UN-Versandbezeichnung</b></li> <li>· <b>ADR</b></li> <li>· <b>IMDG, IATA</b></li> </ul>  | <p style="text-align: right;">1888 CHLOROFORM<br/>CHLOROFORM</p>  |
| <ul style="list-style-type: none"> <li>· <b>14.3 Transportgefahrenklassen</b></li> <li>· <b>ADR, IMDG, IATA</b></li> </ul> <div style="text-align: center; margin: 10px 0;">  </div> <ul style="list-style-type: none"> <li>· <b>Klasse</b></li> <li>· <b>Gefahrzettel</b></li> </ul> | <p style="text-align: right;">6.1 Giftige Stoffe<br/>6.1</p>  |
| <ul style="list-style-type: none"> <li>· <b>14.4 Verpackungsgruppe</b></li> <li>· <b>ADR, IMDG, IATA</b></li> </ul>  | <p style="text-align: right;">III</p>   |
| <ul style="list-style-type: none"> <li>· <b>14.5 Umweltgefahren:</b></li> </ul>  | <p style="text-align: right;">Nicht anwendbar.</p>  |
| <ul style="list-style-type: none"> <li>· <b>14.6 Besondere Vorsichtsmaßnahmen für den Verwender</b></li> <li>· <b>Kemler-Zahl:</b></li> <li>· <b>EMS-Nummer:</b></li> <li>· <b>Segregation groups</b></li> <li>· <b>Stowage Category</b></li> <li>· <b>Stowage Code</b></li> </ul>   | <p style="text-align: right;">Achtung: Giftige Stoffe<br/>60<br/>6.1-02<br/>Liquid halogenated hydrocarbons<br/>A<br/>SW2 Clear of living quarters.</p> |
| <ul style="list-style-type: none"> <li>· <b>14.7 Massengutbeförderung gemäß Anhang II des MARPOL-Übereinkommens und gemäß IBC-Code</b></li> </ul>  | <p style="text-align: right;">Nicht anwendbar.</p>  |

(Fortsetzung auf Seite 8)

# Sicherheitsdatenblatt

## gemäß 1907/2006/EG, Artikel 31

Druckdatum: 19.03.2019

überarbeitet am: 19.03.2019

**Handelsname: Trichlormethan**

(Fortsetzung von Seite 7)

**· Transport/weitere Angaben:****· ADR****· Begrenzte Menge (LQ)**

5L

**· Freigestellte Mengen (EQ)**

Code: E1

Höchste Nettomenge je Innenverpackung: 30 ml

Höchste Nettomenge je Außenverpackung: 1000 ml

**· Beförderungskategorie**

2

**· Tunnelbeschränkungscode**

E

**· IMDG****· Limited quantities (LQ)**

5L

**· Excepted quantities (EQ)**

Code: E1

Maximum net quantity per inner packaging: 30 ml

Maximum net quantity per outer packaging: 1000 ml

**· UN "Model Regulation":**

UN 1888 CHLOROFORM, 6.1, III

### ABSCHNITT 15: Rechtsvorschriften

· **15.1 Vorschriften zu Sicherheit, Gesundheits- und Umweltschutz/spezifische Rechtsvorschriften für den Stoff oder das Gemisch**

· **Richtlinie 2012/18/EU**

· **Namentlich aufgeführte gefährliche Stoffe - ANHANG I** Der Stoff ist nicht enthalten.

· **Seveso-Kategorie**

H2 AKUT TOXISCH

P5c ENTZÜNDBARE FLÜSSIGKEITEN

· **Mengenschwelle (in Tonnen) für die Anwendung in Betrieben der unteren Klasse 50 t**

· **Mengenschwelle (in Tonnen) für die Anwendung in Betrieben der oberen Klasse 200 t**

· **VERORDNUNG (EG) Nr. 1907/2006 ANHANG XVII** Beschränkungsbedingungen: 3, 32, 40

· **Verordnung (EU) Nr. 649/2012 Annex I Part 1**

· **Nationale Vorschriften:**

· **Technische Anleitung Luft:**

Klasse	Anteil in %
I	100,0

· **Wassergefährdungsklasse: WGK 3 (Listeneinstufung):** stark wassergefährdend.

· **Sonstige Vorschriften, Beschränkungen und Verbotsverordnungen**

Das Produkt unterliegt der Anlage 2 der Chemikalienverbotsverordnung (ChemVerbotsV) - Anforderungen in Bezug auf die Abgabe

· **15.2 Stoffsicherheitsbeurteilung:** Eine Stoffsicherheitsbeurteilung wurde nicht durchgeführt.

### ABSCHNITT 16: Sonstige Angaben

Die Angaben stützen sich auf den heutigen Stand unserer Kenntnisse, sie stellen jedoch keine Zusicherung von Produkteigenschaften dar und begründen kein vertragliches Rechtsverhältnis.

· **Abkürzungen und Akronyme:**

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

IATA: International Air Transport Association

(Fortsetzung auf Seite 9)

**Sicherheitsdatenblatt**  
gemäß 1907/2006/EG, Artikel 31

Druckdatum: 19.03.2019

überarbeitet am: 19.03.2019

**Handelsname: Trichlormethan**

(Fortsetzung von Seite 8)

GHS: Globally Harmonised System of Classification and Labelling of Chemicals  
EINECS: European Inventory of Existing Commercial Chemical Substances  
CAS: Chemical Abstracts Service (division of the American Chemical Society)  
LC50: Lethal concentration, 50 percent  
LD50: Lethal dose, 50 percent  
PBT: Persistent, Bioaccumulative and Toxic  
vPvB: very Persistent and very Bioaccumulative  
Flam. Liq. 2: Entzündbare Flüssigkeiten – Kategorie 2  
Acute Tox. 4: Akute Toxizität – Kategorie 4  
Acute Tox. 2: Akute Toxizität – Kategorie 2  
Acute Tox. 3: Akute Toxizität – Kategorie 3  
Skin Irrit. 2: Hautreizende/-ätzende Wirkung – Kategorie 2  
Eye Irrit. 2: Schwere Augenschädigung/Augenreizung – Kategorie 2  
Carc. 2: Karzinogenität – Kategorie 2  
Repr. 2: Reproduktionstoxizität – Kategorie 2  
STOT RE 1: Spezifische Zielorgan-Toxizität (wiederholte Exposition) – Kategorie 1

DE

**Scheda di dati di sicurezza**  
ai sensi del regolamento 1907/2006/CE, Articolo 31

Stampato il: 19.03.2019

Revisione: 19.03.2019

### SEZIONE 1: Identificazione della sostanza o della miscela e della società/impresa

· **1.1 Identificatore del prodotto**

· **Denominazione commerciale:** triclorometano

· **Articolo numero:** 12540, 12541, 12550, 12551

· **Numero CAS:**

67-66-3

· **Numeri CE:**

200-663-8

· **Numero indice:**

602-006-00-4

· **1.2 Usi identificati pertinenti della sostanza o della miscela e usi sconsigliati**

Non sono disponibili altre informazioni.

· **Utilizzazione della Sostanza / del Preparato** Prodotti chimici per laboratorio

· **1.3 Informazioni sul fornitore della scheda di dati di sicurezza**

· **Produttore/fornitore:**

Electron Microscopy Sciences

1560 Industry Road

USA-Hatfield, PA 19440

Tel: 215-412-8400 Fax: 215-412-8450

email: sgkcck@aol.com

www.emsdiasum.com

Societa Italiana Chimici

Via Rio Nell Ellba 140

00138 Rome, Italy

Tel: 39 06 8800211

Fax: 39 30 06 8815313

Web: www.sichim.com

· **Informazioni fornite da:** Product safety department

· **1.4 Numero telefonico di emergenza:**

ChemTrec 1-800-424-9300 Contract CCN7661

1-703-527-3887

### SEZIONE 2: Identificazione dei pericoli

· **2.1 Classificazione della sostanza o della miscela**

· **Classificazione secondo il regolamento (CE) n. 1272/2008**



GHS02 fiamma

Flam. Liq. 2 H225 Liquido e vapori facilmente infiammabili.



GHS06 teschio e tibie incrociate

Acute Tox. 2 H310 Letale per contatto con la pelle.

Acute Tox. 3 H331 Tossico se inalato.



GHS08 pericolo per la salute

Carc. 2 H351 Sospettato di provocare il cancro.

(continua a pagina 2)

**Scheda di dati di sicurezza**  
ai sensi del regolamento 1907/2006/CE, Articolo 31

Stampato il: 19.03.2019

Revisione: 19.03.2019

**Denominazione commerciale:** triclorometano

(Segue da pagina 1)

Repr. 2 H361d Sospettato di nuocere al feto.

STOT RE 1 H372 Provoca danni agli organi in caso di esposizione prolungata o ripetuta.



GHS07

Acute Tox. 4 H302 Nocivo se ingerito.

Skin Irrit. 2 H315 Provoca irritazione cutanea.

Eye Irrit. 2 H319 Provoca grave irritazione oculare.

· **2.2 Elementi dell'etichetta**· **Etichettatura secondo il regolamento (CE) n. 1272/2008**

La sostanza è classificata ed etichettata conformemente al regolamento CLP.

· **Pittogrammi di pericolo**

GHS02

GHS06

GHS08

· **Avvertenza Pericolo**· **Indicazioni di pericolo**

H225 Liquido e vapori facilmente infiammabili.

H302 Nocivo se ingerito.

H310 Letale per contatto con la pelle.

H331 Tossico se inalato.

H315 Provoca irritazione cutanea.

H319 Provoca grave irritazione oculare.

H351 Sospettato di provocare il cancro.

H361d Sospettato di nuocere al feto.

H372 Provoca danni agli organi in caso di esposizione prolungata o ripetuta.

· **Consigli di prudenza**P303+P361+P353 **IN CASO DI CONTATTO CON LA PELLE (o con i capelli):** togliere immediatamente tutti gli indumenti contaminati. Sciacquare la pelle/fare una doccia.P305+P351+P338 **IN CASO DI CONTATTO CON GLI OCCHI:** sciacquare accuratamente per parecchi minuti. Togliere le eventuali lenti a contatto se è agevole farlo. Continuare a sciacquare.

P310 Contattare immediatamente un CENTRO ANTIVELENI/un medico.

P321 Trattamento specifico (vedere su questa etichetta).

P330 Sciacquare la bocca.

P361+P364 Togliere immediatamente tutti gli indumenti contaminati e lavarli prima di indossarli nuovamente.

P405 Conservare sotto chiave.

P501 Smaltire il prodotto/recipiente in conformità con le disposizioni locali / regionali / nazionali / internazionali.

· **2.3 Altri pericoli**· **Risultati della valutazione PBT e vPvB**· **PBT:** Non applicabile.· **vPvB:** Non applicabile.

IT

(continua a pagina 3)



**Scheda di dati di sicurezza**  
ai sensi del regolamento 1907/2006/CE, Articolo 31

Stampato il: 19.03.2019

Revisione: 19.03.2019

Denominazione commerciale: triclorometano

(Segue da pagina 2)

### SEZIONE 3: Composizione/informazioni sugli ingredienti

- **3.1 Caratteristiche chimiche: Sostanze**
- **Numero CAS**  
67-66-3 triclorometano
- **Numero di identificazione**
- **Numeri CE:** 200-663-8
- **Numero indice:** 602-006-00-4

### SEZIONE 4: Misure di primo soccorso

- **4.1 Descrizione delle misure di primo soccorso**
- **Indicazioni generali:**  
*I sintomi di avvelenamento possono comparire dopo molte ore, per tale motivo è necessaria la sorveglianza di un medico nelle 48 ore successive all'incidente.*
- **Inalazione:**  
*Portare in zona ben areata, praticare eventualmente la respirazione artificiale, tenere al caldo. Se i disturbi persistono consultare il medico.  
Se il soggetto è svenuto provvedere a tenerlo durante il trasporto in posizione stabile su un fianco.*
- **Contatto con la pelle:** *Lavare immediatamente con acqua e sapone sciacquando accuratamente.*
- **Contatto con gli occhi:**  
*Lavare con acqua corrente per diversi minuti tenendo le palpebre ben aperte. Se persiste il dolore consultare il medico.*
- **Ingestione:** *Chiamare subito il medico.*
- **4.2 Principali sintomi ed effetti, sia acuti che ritardati** *Non sono disponibili altre informazioni.*
- **4.3 Indicazione dell'eventuale necessità di consultare immediatamente un medico e di trattamenti speciali**  
*Non sono disponibili altre informazioni.*

### SEZIONE 5: Misure antincendio

- **5.1 Mezzi di estinzione**
- **Mezzi di estinzione idonei:**  
*CO<sub>2</sub>, polvere o acqua nebulizzata. Estinguere gli incendi di grosse dimensioni con acqua nebulizzata o con schiuma resistente all'alcool.*
- **5.2 Pericoli speciali derivanti dalla sostanza o dalla miscela** *Non sono disponibili altre informazioni.*
- **5.3 Raccomandazioni per gli addetti all'estinzione degli incendi**
- **Mezzi protettivi specifici:** *Indossare il respiratore.*

### SEZIONE 6: Misure in caso di rilascio accidentale

- **6.1 Precauzioni personali, dispositivi di protezione e procedure in caso di emergenza** *Non necessario.*
- **6.2 Precauzioni ambientali:** *Impedire infiltrazioni nella fognatura/nelle acque superficiali/nelle acque freatiche.*
- **6.3 Metodi e materiali per il contenimento e per la bonifica:**  
*Raccogliere il liquido con materiale assorbente (sabbia, tripoli, legante di acidi, legante universale, segatura).  
Smaltimento del materiale contaminato conformemente al punto 13.  
Provvedere ad una sufficiente areazione.*
- **6.4 Riferimento ad altre sezioni**  
*Per informazioni relative ad un manipolazione sicura, vedere capitolo 7.  
Per informazioni relative all'equipaggiamento protettivo ad uso personale vedere Capitolo 8.*

(continua a pagina 4)

**Scheda di dati di sicurezza**  
ai sensi del regolamento 1907/2006/CE, Articolo 31

Stampato il: 19.03.2019

Revisione: 19.03.2019

Denominazione commerciale: triclorometano

(Segue da pagina 3)

Per informazioni relative allo smaltimento vedere Capitolo 13.

**SEZIONE 7: Manipolazione e immagazzinamento**

- **7.1 Precauzioni per la manipolazione sicura** Accurata ventilazione/aspirazione nei luoghi di lavoro.
- **Indicazioni in caso di incendio ed esplosione:** Non sono richiesti provvedimenti particolari.
- **7.2 Condizioni per lo stoccaggio sicuro, comprese eventuali incompatibilità**
- **Stoccaggio:**
- **Requisiti dei magazzini e dei recipienti:** Non sono richiesti requisiti particolari.
- **Indicazioni sullo stoccaggio misto:** Non necessario.
- **Ulteriori indicazioni relative alle condizioni di immagazzinamento:** Mantenere i recipienti ermeticamente chiusi.
- **7.3 Usi finali particolari** Non sono disponibili altre informazioni.

**SEZIONE 8: Controllo dell'esposizione/protezione individuale**

- **Ulteriori indicazioni sulla struttura di impianti tecnici:** Nessun dato ulteriore, vedere punto 7.
- **8.1 Parametri di controllo**

· **Componenti i cui valori limite devono essere tenuti sotto controllo negli ambienti di lavoro:**

**67-66-3 triclorometano**

TWA	Valore a lungo termine: 49 mg/m <sup>3</sup> , 10 ppm
A3	
VL	Valore a lungo termine: 10 mg/m <sup>3</sup> , 2 ppm
Pelle	

- **Ulteriori indicazioni:** Le liste valide alla data di compilazione sono state usate come base.
- **8.2 Controlli dell'esposizione**
- **Mezzi protettivi individuali:**
- **Norme generali protettive e di igiene del lavoro:**  
Tenere lontano da cibo, bevande e foraggi.  
Togliere immediatamente gli abiti contaminati.  
Lavarsi le mani prima dell'intervallo o a lavoro terminato.  
Evitare il contatto con gli occhi e la pelle.
- **Maschera protettiva:**  
Nelle esposizioni brevi e minime utilizzare la maschera; nelle esposizioni più intense e durature indossare l'autorespiratore.
- **Guanti protettivi:**



Guanti protettivi

Il materiale dei guanti deve essere impermeabile e stabile contro il prodotto/ la sostanza/ la formulazione. A causa della mancanza di tests non può essere consigliato alcun tipo di materiale per i guanti con cui manipolare il prodotto / la formulazione / la miscela di sostanze chimiche. Scelta del materiale dei guanti in considerazione dei tempi di passaggio, dei tassi di permeazione e della degradazione.

- **Materiale dei guanti**  
La scelta dei guanti adatti non dipende soltanto dal materiale bensì anche da altre caratteristiche di qualità variabili da un produttore a un altro.
- **Tempo di permeazione del materiale dei guanti**  
Richiedere dal fornitore dei guanti il tempo di passaggio preciso il quale deve essere rispettato.

(continua a pagina 5)

**Scheda di dati di sicurezza**  
ai sensi del regolamento 1907/2006/CE, Articolo 31

Stampato il: 19.03.2019

Revisione: 19.03.2019

**Denominazione commerciale:** triclorometano

(Segue da pagina 4)

- **Occhiali protettivi:**  
Occhiali protettivi



Occhiali protettivi a tenuta

### SEZIONE 9: Proprietà fisiche e chimiche

#### · 9.1 Informazioni sulle proprietà fisiche e chimiche fondamentali

##### · Indicazioni generali

##### · Aspetto:

**Forma:** Liquido

**Colore:** Incolore

· **Odore:** Gradevole

· **Soglia olfattiva:** Non definito.

· **valori di pH:** Non definito.

##### · Cambiamento di stato

**Punto di fusione/punto di congelamento:** -63 °C

**Punto di ebollizione iniziale e intervallo di ebollizione:** 62 °C

· **Punto di infiammabilità:** 0 °C

· **Infiammabilità (solidi, gas):** Non applicabile.

· **Temperatura di accensione:** 982 °C

· **Temperatura di decomposizione:** Non definito.

· **Temperatura di autoaccensione:** Non definito.

· **Proprietà esplosive:** Prodotto non è esplosivo, è tuttavia possibile la formazione di miscele di vapori/aria esplosive.

##### · Limiti di infiammabilità:

**Inferiore:** Non definito.

**Superiore:** Non definito.

· **Tensione di vapore a 20 °C:** 210 hPa

· **Densità a 20 °C:** 1,47988 g/cm<sup>3</sup>

· **Densità relativa** Non definito.

· **Densità di vapore:** Non definito.

· **Velocità di evaporazione** Non definito.

· **Solubilità in/Miscibilità con acqua a 20 °C:**

8 g/l

· **Coefficiente di ripartizione: n-ottanolo/acqua:** Non definito.

##### · Viscosità:

**Dinamica a 20 °C:** 0,56 mPas

**Cinematica:** Non definito.

(continua a pagina 6)

**Scheda di dati di sicurezza**  
ai sensi del regolamento 1907/2006/CE, Articolo 31

Stampato il: 19.03.2019

Revisione: 19.03.2019

Denominazione commerciale: triclorometano

(Segue da pagina 5)

· 9.2 Altre informazioni

Non sono disponibili altre informazioni.

**SEZIONE 10: Stabilità e reattività**

- 10.1 Reattività Non sono disponibili altre informazioni.
- 10.2 Stabilità chimica
- **Decomposizione termica/ condizioni da evitare:** Il prodotto non si decompone se utilizzato secondo le norme.
- 10.3 Possibilità di reazioni pericolose Non sono note reazioni pericolose.
- 10.4 Condizioni da evitare Non sono disponibili altre informazioni.
- 10.5 Materiali incompatibili: Non sono disponibili altre informazioni.
- 10.6 Prodotti di decomposizione pericolosi: Non sono noti prodotti di decomposizione pericolosi.

**SEZIONE 11: Informazioni tossicologiche**

## · 11.1 Informazioni sugli effetti tossicologici

## · Tossicità acuta

Nocivo se ingerito.

Letale per contatto con la pelle.

Tossico se inalato.

## · Valori LD/LC50 rilevanti per la classificazione:

Orale LD50 908 mg/kg (rat)

Cutaneo LD50 75 mg/kg (rat)

## · Irritabilità primaria:

## · Corrosione/irritazione cutanea

Provoca irritazione cutanea.

## · Lesioni oculari gravi/irritazioni oculari gravi

Provoca grave irritazione oculare.

## · Sensibilizzazione respiratoria o cutanea

Basandosi sui dati disponibili i criteri di classificazione non sono soddisfatti.

## · Effetti CMR (cancerogenicità, mutagenicità e tossicità per la riproduzione)

## · Mutagenicità delle cellule germinali

Basandosi sui dati disponibili i criteri di classificazione non sono soddisfatti.

## · Cancerogenicità

Sospettato di provocare il cancro.

## · Tossicità per la riproduzione

Sospettato di nuocere al feto.

## · Tossicità specifica per organi bersaglio (STOT) - esposizione singola

Basandosi sui dati disponibili i criteri di classificazione non sono soddisfatti.

## · Tossicità specifica per organi bersaglio (STOT) - esposizione ripetuta

Provoca danni agli organi in caso di esposizione prolungata o ripetuta.

## · Pericolo in caso di aspirazione Basandosi sui dati disponibili i criteri di classificazione non sono soddisfatti.

**SEZIONE 12: Informazioni ecologiche**

## · 12.1 Tossicità

· Tossicità acquatica: Non sono disponibili altre informazioni.

· 12.2 Persistenza e degradabilità Non sono disponibili altre informazioni.

· 12.3 Potenziale di bioaccumulo Non sono disponibili altre informazioni.

· 12.4 Mobilità nel suolo Non sono disponibili altre informazioni.

(continua a pagina 7)

**Scheda di dati di sicurezza**  
ai sensi del regolamento 1907/2006/CE, Articolo 31

Stampato il: 19.03.2019

Revisione: 19.03.2019

**Denominazione commerciale:** triclorometano


(Segue da pagina 6)

- **Ulteriori indicazioni in materia ambientale:**
- **Ulteriori indicazioni:**  
Pericolosità per le acque classe 3 (D) (Classif. secondo le liste): molto pericoloso  
Non immettere nelle acque freatiche, nei corsi d'acqua o nelle fognature, anche in piccole dosi.  
Pericolo per le acque potabili anche in caso di perdite nel sottosuolo di quantità minime di prodotto.
- **12.5 Risultati della valutazione PBT e vPvB**
- **PBT:** Non applicabile.
- **vPvB:** Non applicabile.
- **12.6 Altri effetti avversi** Non sono disponibili altre informazioni.

### SEZIONE 13: Considerazioni sullo smaltimento

- **13.1 Metodi di trattamento dei rifiuti**
- **Consigli:** Non smaltire il prodotto insieme ai rifiuti domestici Non immettere nelle fognature.
- **Imballaggi non puliti:**
- **Consigli:** Smaltimento in conformità con le disposizioni amministrative.

### SEZIONE 14: Informazioni sul trasporto

- |   |   |
|---|---|
| · <b>14.1 Numero ONU</b><br>· <b>ADR, IMDG, IATA</b>  | UN1888  |
| · <b>14.2 Nome di spedizione dell'ONU</b><br>· <b>ADR</b><br>· <b>IMDG, IATA</b>  | 1888 CLOROFORMIO<br>CHLOROFORM  |
| · <b>14.3 Classi di pericolo connesso al trasporto</b><br>· <b>ADR, IMDG, IATA</b>  |   |
|    |   |
| · <b>Classe</b><br>· <b>Etichetta</b>   | 6.1 Materie tossiche<br>6.1   |
| · <b>14.4 Gruppo di imballaggio</b><br>· <b>ADR, IMDG, IATA</b>   | III   |
| · <b>14.5 Pericoli per l'ambiente:</b>  | Non applicabile.  |
| · <b>14.6 Precauzioni speciali per gli utilizzatori</b><br>· <b>Numero Kemler:</b><br>· <b>Numero EMS:</b><br>· <b>Segregation groups</b><br>· <b>Stowage Category</b><br>· <b>Stowage Code</b> | Attenzione: Materie tossiche<br>60<br>6.1-02<br>Liquid halogenated hydrocarbons<br>A<br>SW2 Clear of living quarters. |
| · <b>14.7 Trasporto di rinfuse secondo l'allegato II di MARPOL ed il codice IBC</b>   | Non applicabile.  |

(continua a pagina 8)

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Stampato il: 19.03.2019

Revisione: 19.03.2019

**Denominazione commerciale:** triclorometano

(Segue da pagina 7)

**· Trasporto/ulteriori indicazioni:****· ADR****· Quantità limitate (LQ)**

5L

**· Quantità esenti (EQ)**

Codice: E1

Quantità massima netta per imballaggio interno: 30 ml

Quantità massima netta per imballaggio esterno: 1000 ml

**· Categoria di trasporto**

2

**· Codice di restrizione in galleria**

E

**· IMDG****· Limited quantities (LQ)**

5L

**· Excepted quantities (EQ)**

Code: E1

Maximum net quantity per inner packaging: 30 ml

Maximum net quantity per outer packaging: 1000 ml

**· UN "Model Regulation":**

UN 1888 CLOROFORMIO, 6.1, III

**SEZIONE 15: Informazioni sulla regolamentazione**

**· 15.1 Disposizioni legislative e regolamentari su salute, sicurezza e ambiente specifiche per la sostanza o la miscela**

**· Direttiva 2012/18/UE****· Sostanze pericolose specificate - ALLEGATO I** La sostanza non è contenuta**· Categoria Seveso**

H2 TOSSICITÀ ACUTA

P5c LIQUIDI INFIAMMABILI

**· Quantità limite (tonnellate) ai fini dell'applicazione dei requisiti di soglia inferiore** 50 t**· Quantità limite (tonnellate) ai fini dell'applicazione dei requisiti di soglia superiore** 200 t**· REGOLAMENTO (CE) n. 1907/2006 ALLEGATO XVII** Restrizioni: 3, 32, 40**· Regolamento (UE) N. 649/2012 Annex I Part 1****· 15.2 Valutazione della sicurezza chimica:** Una valutazione della sicurezza chimica non è stata effettuata.**SEZIONE 16: Altre informazioni**

I dati sono riportati sulla base delle nostre conoscenze attuali, non rappresentano tuttavia alcuna garanzia delle caratteristiche del prodotto e non motivano alcun rapporto giuridico contrattuale.

**· Abbreviazioni e acronimi:**

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

IATA: International Air Transport Association

GHS: Globally Harmonised System of Classification and Labelling of Chemicals

EINECS: European Inventory of Existing Commercial Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

Flam. Liq. 2: Liquidi infiammabili – Categoria 2

Acute Tox. 4: Tossicità acuta – Categoria 4

Acute Tox. 2: Tossicità acuta – Categoria 2

Acute Tox. 3: Tossicità acuta – Categoria 3

Skin Irrit. 2: Corrosione/irritazione della pelle – Categoria 2

Eye Irrit. 2: Gravi lesioni oculari/irritazione oculare – Categoria 2

(continua a pagina 9)

**Scheda di dati di sicurezza**  
**ai sensi del regolamento 1907/2006/CE, Articolo 31**

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Revisione: 19.03.2019

**Denominazione commerciale: triclorometano**

(Segue da pagina 8)

*Carc. 2: Cancerogenicità – Categoria 2**Repr. 2: Tossicità per la riproduzione – Categoria 2**STOT RE 1: Tossicità specifica per organi bersaglio (esposizione ripetuta) – Categoria 1*

-IT-



# 물질안전보건자료 GHS에 따라

기압점: 2019.03.19

개정: 2019.03.19

## 1 화학제품과 회사에 관한 정보

- **제품 식별자**
- **제품명: 클로로포름**
- **상품번호:** 12540, 12541, 12550, 12551
- **CAS-번호**  
67-66-3
- **EC 의번호:**  
200-663-8
- **색인 번호:**  
602-006-00-4
- **해당 순물질이나 혼합물의 관련 하위용도 및 사용금지용도** 추가적인 정보가 존재하지 않습니다.
- **제품의 권고 용도와 사용상의 제한:** 실험실화 학품
- **안전데이터표(Safety Data Sheet)내 공급업체 관련 상세 정보**
- **제조자/수입자/유통업자 정보:**  
Electron Microscopy Sciences  
1560 Industry Road  
USA-Hatfield, PA 19440  
Tel: 215-412-8400 Fax: 215-412-8450  
email: sgkcck@aol.com  
www.emsdiasum.com
- **Samchang Commercial Co., Ltd.**  
Yeo Eui Do  
PO Box 1110  
Seoul, Korea  
Tel: 82 2 703 3040  
Fax: 82 2 717 3298

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- **Daedok Science, Co. Ltd.**  
34141 E10 Korea Advanced Institute of Science  
Guseong-Dong, Yuseong-gu, Daejeon,  
Korea  
Phone: 82 42 710 2091  
Fax: 82 42 367 0005  
Website: www.labsmro.com
- **추가적인 정보 획득 가능:** Product safety department
- **비상연락 전화번호:**  
ChemTrec 1-800-424-9300 Contract CCN7661  
1-703-527-3887

## 2 유해성·위험성

- **순물질 또는 혼합물의 분류**



화염

인화성 액체 - 구분 2

H225 고인화성 액체 및 증기



두개골과 대퇴골

급성 독성 - 경피 - 구분 2

H310 피부와 접촉하면 치명적임

급성 독성 - 흡입 - 구분 3

H331 흡입하면 유독함

(2 쪽에 계속)

제품명: 클로로포름

(1 쪽부터계속)



건강에 위험

발암성 - 구분 2	H351 암을 일으킬 것으로 의심됨
생식독성 - 구분 2	H361 태아 또는 생식능력에 손상을 일으킬 것으로 의심됨
특정표적장기 독성 - 반복 노출 - 구분 1	H372 장기간 또는 반복노출 되면 신체 중에 손상을 일으킴



급성 독성 - 경구 - 구분 4	H302 삼키면 유해함
피부 부식성/피부 자극성 - 구분 2	H315 피부에 자극을 일으킴
심한 눈 손상성/눈 자극성 - 구분 2	H319 눈에 심한 자극을 일으킴

· 라벨표기 요소

· GHS 라벨 요소

본 화학물질은 화학물질의 분류 및 표기에 관한 국제조화시스템(GHS)에 따라 분류 및 표기되었습니다.

· 그림문자



GHS02    GHS06    GHS08

· 신호어 위험

· 유해.위험 문구

고인화성 액체 및 증기  
삼키면 유해함  
피부와 접촉하면 치명적임  
흡입하면 유독함  
피부에 자극을 일으킴  
눈에 심한 자극을 일으킴  
암을 일으킬 것으로 의심됨  
태아 또는 생식능력에 손상을 일으킬 것으로 의심됨  
장기간 또는 반복노출 되면 신체 중에 손상을 일으킴

· 예방조치 문구

피부(또는 머리카락)에 묻으면 오염된 모든 의복은 벗으시오. 피부를 물로 씻으시오/샤워하시오.  
눈에 묻으면 몇 분간 물로 조심해서 씻으시오. 가능하면콘택트렌즈를 제거하시오. 계속 씻으시오.  
즉시 독성물질센터/병원 연락 필요.  
(라벨 참조) 처치를 하시오.  
입을 씻어내시오.  
오염된 모든 의복은 즉시 벗고 다시 사용 전 세척하시오.  
잠금장치가 있는 저장장소에 저장하시오.  
현지/지역/국가/국제 규정에 따라서 내용물/용기 노출

· 기타 유해성

- PBT(잔류성, 생물농축성, 독성 물질) 및 vPvB(고 잔류성, 고 생물농축성 물질) 평가 결과
- PBT(잔류성, 생물농축성, 독성 물질): 해당사항 없음.
- vPvB(고 잔류성, 고 생물농축성 물질): 해당사항 없음.

# 물질안전보건자료

## GHS에 따라

기압점: 2019.03.19

개정: 2019.03.19

**제품명: 클로로포름**

(2 쪽부터계속)

### 3 구성성분의 명칭 및 함유량

- **화 학 적 특 성:** 화학물질
- **CAS-번호표시**  
67-66-3 클로로포름
- **식별 번호**
- **EC 의번호:** 200-663-8
- **색인 번호:** 602-006-00-4

### 4 응급조치 요령

- **응급조치요령 내용**
- **일 반 적 정 보:**  
중 독 증 상 은 몇 시 간 이 지 난 뒤 에 발 생 할 수 있 다. 따 라 서 사 고 가 발 생 한 후 에 적 어 도 48 시 간 동 안 은 의 료 진 의 관 찰 을 받 아 야 한 다.
- **흡입했을 때:**  
신 선 한 공 기 를 쐬 고, 필 요 할 경 우 에 는 산 소 호 흡 기 의 도 움 을 받 는 다. 환 자 를 따 뜻 하 게 하 고, 증 상 이 지 속 될 경 우 에 는 의 료 진 의 도 움 을 구 한 다.  
환 자 가 의 식 을 잃 었 을 경 우 에 는 안 전 한 자 세 에 서 환 자 를 운 반 한 다.
- **피부 에 접 촉 했 을 때:** 즉 시 물 과 비 누 로 씻 고 잘 헹 구 나.
- **눈 에 들 어 갔 을 때:** 흐 르 는 물 에 눈 을 몇 분 동 안 씻 어 내 고 나 서, 증 상 이 지 속 될 경 우 에 는 의 사 와 상 담 한 다
- **먹 었 을 때:** 즉 시 의 사 의 도 움 을 구 한 다.
- **기 타 의 사 의 주 의 사 항:**
- **가 장 중 요 한 급·만 성 증 상 및 영 향** 추 가 적 인 정 보 가 존 재 하 지 않 습 니 다.
- **즉 각 적 인 의 료 처 치 및 특 별 처 리 가 필 요 함 을 시 사 하 는 징 후** 추 가 적 인 정 보 가 존 재 하 지 않 습 니 다.

### 5 폭발·화재시 대처방법

- **소 화 제**
- **적 절 한 소 화 제:**  
이 산 화 탄 소, 진 화 용 석 회 가 루 또 는 물 방 사 를 사 용 하 고, 더 큰 화 재 는 물 을 분 사 하 거 나 알 코 올 이 함 유 된 거 품 으 로 끈 다.
- **본 화 학 물 질 이 나 혼 합 물 에 서 발 생 하 는 특 별 유 해 성** 추 가 적 인 정 보 가 존 재 하 지 않 습 니 다.
- **소 방 관 에 대 한 권 고 사 항**
- **화 재 진 압 시 착 용 할 보 호 구 및 예 방 조 치:** 호 흡 보 호 장 비 설 치.

### 6 누출 사고 시 대처방법

- **개 인 적 예 방 조 치, 보 호 장 비 및 응 급 처 치 절 차** 필 요 없 음.
- **환 경 관 련 예 방 조 치:** 하 수 도 망 / 해 수 면 위 의 물 / 지 하 수 로 도 달 하 지 않 게 한 다.
- **밀 폐 및 정 화 방 법 과 소 재:**  
액 체 가 혼 합 된 물 질 (모 래, 규 조 토, 산 성 결 합 물, 일 반 결 합 물, 톱 밥) 에 흡 입 되 도 록 한 다.  
항 목 13 에 따 라 오 염 된 물 질 을 쓰 레 기 로 처 분 한 다.  
충 분 한 환 기 가 되 도 록 한 다.
- **타 섹 션 참 조**  
안 전 관 리 에 대 한 정 보 는 제 7 장 을 참 고 하 시 오.  
개 인 보 호 장 비 에 대 한 정 보 는 제 8 장 을 참 고 하 시 오.  
쓰 레 기 처 리 에 대 한 정 보 는 제 13 장 을 참 고 하 시 오.

KR

(4 쪽에계속)

# 물질안전보건자료

## GHS에 따라

기압점: 2019.03.19

개정: 2019.03.19

제품명: 클로로포름

(3 쪽부터계속)

### 7 취급 및 저장방법

- 취급:
  - 안전 취급을 위한 예방조치 작업장에서는통풍이잘 되고/습기제거가잘 되게주의한다.
  - 화재 및 폭발 사고 예방대책에 관한 정보: 특별한 조치가 필요없음.
- 혼합위험성 등 안전 저장 조건
- 보관:
  - 안전한 저장 방법: 특별한 요구사항이 없음.
  - 하나의 공동 보관 시설에 대한 보관 관련 정보: 필요없음
  - 보관 조건에 관한 추가적인 정보: 용기를새지않게밀폐한채보관한다.
  - 구체적인 최종 사용자 추가적인 정보가 존재하지 않습니다.

### 8 노출방지 및 개인보호구

- 첨단시설 디자인에 대한 추가정보: 더 이상 의 자료는 없음. 항 목 7 을 참고하시 오.
- 통제 변수

· 화학물질의 노출기준, 생물학적 노출기준 등:

**67-66-3 클로로포름**

TLV (KR)	장기간의값: 10 ppm 발암성2,생식독성2
IOELV (EU)	장기간의값: 10 mg/m <sup>3</sup> , 2 ppm Skin
PEL (US)	최고노출기준: 240 mg/m <sup>3</sup> , 50 ppm
REL (US)	단기간의값: 9.78* mg/m <sup>3</sup> , 2* ppm *60-min; See Pocket Guide App. A
TLV (US)	장기간의값: 49 mg/m <sup>3</sup> , 10 ppm

· 추가 정보: 제 조 할 당시에 유 효 한 목 록을 기초로 사용했다.

- 노출 통제
- 개인 보호구

· 일반적보호조치및위생조치:

- 식료품, 음료수와 사료로부터 멀리떨어뜨려 놓는다.
- 더러워지거나음료수가물 은 옷 은 즉시 탈의한다.
- 휴식전 이나 작업이 끝날때마다 손을 씻는다.
- 눈과 피부와의 접촉은 피한다.

· 호흡기 보호:

단 시간 또는 경미한 오염의 경우에는 호흡여과기를 사용한다. 심각한 또는 장기간 노출시에는 호흡보호장비를 사용한다.

· 손 보호:



보호용 장갑

장갑재질은제품 / 원료 / 조제를투과시키지않아야하고, 내구성이있어야한다.

테스트를 하지 않았기 때문에 제품 / 조제 / 화학 혼합 물에 적합한 장갑재질에 대한 추천이 없다.

투과 시간, 침투율과 저하를 고려해서 장갑 재료를 선택한다.

· 장갑의재료

적합한장갑의선택은재질차이뿐아니라품질기준의차이도고려하여이루어져야하고제조업자에따라서도다르게선정되어야한다.

· 장갑 재료의 투과시간 정확한관통시간은보호장갑제조자에의하여인지되고, 준수되어야한다.

(5 쪽에계속)

# 물질안전보건자료

## GHS에 따라

기압점: 2019.03.19

개정: 2019.03.19

**제품명: 클로로포름**

· **눈 보호:**  
보호안경

(4 쪽부터계속)



· 팍조이는보안경

### 9 물리화학적 특성

· **기본 물리 및 화학적 특성에 대한 정보**

· **일반정보**

· **외형**

· 물리적 상태:	액체의
· 색:	색소가없는
· 냄새:	유쾌한
· 후각역치	알맞지않다.

· pH: 알맞지않다.

· **상태변화**

· 녹는점/어는점:	-63 °C
· 초기 끓는점과 끓는점 범위:	62 °C

· 인화점: 0 °C

· 인화성(고체, 기체): 해당사항 없음.

· 점화온도: 982 °C

· 분해 온도: 알맞지않다.

· 자기점화: 알맞지않다.

· **폭발위험:** 이제품은폭발위험성이없지만, 폭발가능성이있는증기화합물/공기화합물의형성가능성이있다.

· **인화 또는 폭발 범위의 상한/하한**

· 아래로:	알맞지않다.
· 위로:	알맞지않다.

· 증기압 의경우 20 °C: 210 hPa

· 밀도 의경우 20 °C: 1.47988 g/cm<sup>3</sup>

· 비중: 알맞지않다.

· 증기밀도: 알맞지않다.

· 증발 속도: 알맞지않다.

· **용해도:**

· 물 의경우 20 °C: 8 g/l

· n 옥탄올/물 분배계수: 알맞지않다.

· **점도:**

· 역학성 의경우 20 °C: 0.56 mPas

· 동점성: 알맞지않다.

· 기타 정보 추가적인 정보가 존재하지 않습니다.

KR

(6 쪽에계속)

# 물질안전보건자료

## GHS에 따라

기압점: 2019.03.19

개정: 2019.03.19

**제품명: 클로로포름**

(5 쪽부터계속)

### 10 안정성 및 반응성

- 반응성 추가적인 정보가 존재하지 않습니다.
- 화학적 안정성
- 화학적 안정성 및 유해 반응의 가능성 / 피해야 할 조건: 규정에따라사용할경우해체는없다
- 유해반응 가능성 위험한반응으로는알려지지않았다.
- 피해야 할 조건 추가적인 정보가 존재하지 않습니다.
- 혼합 금지 물질: 추가적인 정보가 존재하지 않습니다.
- 유해분해물질: 위험성있는분해물들은알려지지않았다.

### 11 독성에 관한 정보

- 독성학적 영향에 대한 정보
- 급성 독성:

· LD/LC50-수치에 따른 분류:

구강의	LD50	908 mg/kg (rat)
피부의	LD50	75 mg/kg (rat)

- 일차적 자극 효과:
- 피부 부식성 또는 자극성: 피부와점막을자극한다.
- 심한 눈 손상 또는 자극성: 자극
- 감각화: 민감한영향이없는것으로알려져있다.
- 다음 종류의 잠재적인 효과에 대한 정보
- CMR-효과 (암 유발, 돌연변이성 그리고 생식 독성)  
발암성 - 구분 2, 생식독성 - 구분 2

### 12 환경에 미치는 영향

- 독성
- 수생독성: 추가적인 정보가 존재하지 않습니다.
- 지속성 및 분해성 추가적인 정보가 존재하지 않습니다.
- 환경 시스템에서의 행동:
- 생물농축 잠재성 추가적인 정보가 존재하지 않습니다.
- 토양내 이동성 추가적인 정보가 존재하지 않습니다.
- 추가적인 생태학 정보:
- 일반 특징:  
수질오염등급 3 (목록분류): 심하게수질오염이된  
지하수나, 하천으로또는하수도망에도달하지않게한다. 역시극소수의양이라도안된다.  
지하수로아주미세한양이유입되었을경우엔이미식수오염상태이다
- PBT(잔류성, 생물농축성, 독성 물질) 및 vPvB(고 잔류성, 고 생물농축성 물질) 평가 결과
- PBT(잔류성, 생물농축성, 독성 물질): 해당사항 없음.
- vPvB(고 잔류성, 고 생물농축성 물질): 해당사항 없음.
- 기타 부작용 추가적인 정보가 존재하지 않습니다.

### 13 폐기시 주의사항

- 폐기물 처리 방법
- 권고: 생활쓰레기와함께처리되어서는안된다. 하수도망으로유입되어서는안된다.

(7 쪽에계속)

# 물질안전보건자료

## GHS에 따라

기압점: 2019.03.19


개정: 2019.03.19

**제품명: 클로로포름**

(6 쪽부터계속)

- 비위생적 포장:
- 권고: 당국의지침에입각한쓰레기처리.

### 14 운송에 필요한 정보

<ul style="list-style-type: none"> <li>· 유엔 번호</li> <li>· ADR, IMDG, IATA</li> </ul>	<p style="text-align: right;">UN1888</p>
<ul style="list-style-type: none"> <li>· UN 적정 선적명</li> <li>· ADR</li> <li>· IMDG, IATA</li> </ul>	<p style="text-align: right;">1888 CHLOROFORM CHLOROFORM</p>
<ul style="list-style-type: none"> <li>· 교통 위험 클래스</li> <li>· ADR, IMDG, IATA</li> </ul>	<div style="text-align: center;">  </div>
<ul style="list-style-type: none"> <li>· 등급</li> <li>· 위험물 라벨</li> </ul>	<p style="text-align: right;">6.1 독성물질 6.1</p>
<ul style="list-style-type: none"> <li>· 용기등급</li> <li>· ADR, IMDG, IATA</li> </ul>	<p style="text-align: right;">III</p>
<ul style="list-style-type: none"> <li>· 환경적 유해물질:</li> </ul>	<p style="text-align: right;">해당사항 없음.</p>
<ul style="list-style-type: none"> <li>· 이용자 특별 예방조치</li> <li>· 위험 코드:</li> <li>· EMS-번호:</li> <li>· Segregation groups</li> <li>· Stowage Category</li> <li>· Stowage Code</li> </ul>	<p style="text-align: right;">경고: 독성물질 60 6.1-02 Liquid halogenated hydrocarbons A SW2 Clear of living quarters.</p>
<ul style="list-style-type: none"> <li>· MARPOL73/78(선박으로부터의 해양오염방지협약) 부속서2 및 IBC Code(국제선적화물코드)에 따른 벌크(bulk) 운송</li> </ul>	<p style="text-align: right;">해당사항 없음.</p>
<ul style="list-style-type: none"> <li>· 운 송/추가 정보:</li> </ul>	<hr style="border-top: 1px dashed #000;"/>
<ul style="list-style-type: none"> <li>· ADR</li> <li>· 한정 수량 (LQ)</li> <li>· Excepted quantities (EQ)</li> </ul>	<p style="text-align: right;">5L Code: E1 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 1000 ml</p>
<ul style="list-style-type: none"> <li>· 운송 구분</li> <li>· 터널 제한 코드</li> </ul>	<p style="text-align: right;">2 E</p> <hr style="border-top: 1px dashed #000;"/>
<ul style="list-style-type: none"> <li>· IMDG</li> <li>· Limited quantities (LQ)</li> <li>· Excepted quantities (EQ)</li> </ul>	<p style="text-align: right;">5L Code: E1 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 1000 ml</p>

(8 쪽에계속)



# 물질안전보건자료

## GHS에 따라

기압점: 2019.03.19

개정: 2019.03.19

**제품명: 클로로포름**

(7 쪽부터계속)

· UN "모범 규제":

UN 1888 CHLOROFORM, 6.1, III

### 15 법적 규제현황

- **산업안전보건법에 의한 규제:**
  - **제조 등 금지물질:** 성분이포함 되어있지않다
  - **허가대상물질:** 성분이포함 되어있지않다
  - **관리대상유해물질:** 성분이포함 되어있다
  - **해당 순물질 또는 혼합물에 대한 안전, 보건 및 환경 규제/법률**
  - **Korean Existing Chemical Inventory KE-34076**
  - **화학물질관리법**
  - **사고대비물질** 성분이포함 되어있지않다
  - **금지물질** 성분이포함 되어있지않다
  - **제한물질** 성분이포함 되어있지않다
  - **유독물질** 성분이포함 되어있다
  - **허가물질** 성분이포함 되어있다
  - **GHS 라벨 요소**
- 본 화학물질은 화학물질의 분류 및 표기에 관한 국제조화시스템(GHS)에 따라 분류 및 표기되었습니다.
- **그림문자**



GHS02    GHS06    GHS08

- **신호어 위험**
- **유해.위험 문구**
- 고인화성 액체 및 증기
- 삼키면 유해함
- 피부와 접촉하면 치명적임
- 흡입하면 유독함
- 피부에 자극을 일으킴
- 눈에 심한 자극을 일으킴
- 암을 일으킬 것으로 의심됨
- 태아 또는 생식능력에 손상을 일으킬 것으로 의심됨
- 장기간 또는 반복노출 되면 신체 중에 손상을 일으킴
- **예방조치 문구**
- 피부(또는 머리카락)에 묻으면 오염된 모든 의복은 벗으시오. 피부를 물로 씻으시오/샤워하시오.
- 눈에 묻으면 몇 분간 물로 조심해서 씻으시오. 가능하면콘택트렌즈를 제거하시오. 계속 씻으시오.
- 즉시 독성물질센터/병원 연락 필요.
- (라벨 참조) 처치를 하시오.
- 입을 씻어내시오.
- 오염된 모든 의복은 즉시 벗고 다시 사용 전 세척하시오.
- 잠금장치가 있는 저장장소에 저장하시오.
- 현지/지역/국가/국제 규정에 따라서 내용물/용기 노출
- **화학물질 안전성 평가:** 화학물질 안전성 평가가 수행되지 않음

### 16 그 밖의 참고사항

이보고는 우리지식에대한오늘날의상태에대하여평가하고있다, 하지만이보고서는생산특성에관한보증은 기술하지않았으며계약적인법률관계에기반을두고있지도않다

(9 쪽에계속)

# 물질안전보건자료

## GHS에 따라

기압점: 2019.03.19

개정: 2019.03.19

**제품명: 클로로포름**

(8 쪽부터계속)

- **최초 작성일자:** 2019.03.19
- **개정 횟수 및 최종 개정일자:** 1 / 2019.03.19
- **약어와 두문자어:**
  - 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
  - IATA: International Air Transport Association
  - EINECS: European Inventory of Existing Commercial Chemical Substances
  - CAS: Chemical Abstracts Service (division of the American Chemical Society)
  - LC50: Lethal concentration, 50 percent
  - LD50: Lethal dose, 50 percent
  - PBT: Persistent, Bioaccumulative and Toxic
  - vPvB: very Persistent and very Bioaccumulative

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**Ficha de dados de segurança**  
em conformidade com 1907/2006/CE, Artigo 31°

data da impressão 19.03.2019

Revisão: 19.03.2019

### SECÇÃO 1: Identificação da substância/mistura e da sociedade/empresa

- **1.1 Identificador do produto**
- **Nome comercial:** triclorometano
- **Código do produto:** 12540, 12541, 12550, 12551
- **Nº CAS:**  
67-66-3
- **Número CE:**  
200-663-8
- **Número de índice:**  
602-006-00-4
- **1.2 Utilizações identificadas relevantes da substância ou mistura e utilizações desaconselhadas**  
Não existe mais nenhuma informação relevante disponível.
- **Utilização da substância / da preparação** Químicos de laboratório
- **1.3 Identificação do fornecedor da ficha de dados de segurança**
- **Fabricante/fornecedor:**  
Electron Microscopy Sciences  
1560 Industry Road  
USA-Hatfield, PA 19440  
Tel: 215-412-8400 Fax: 215-412-8450  
email: sgkcck@aol.com  
www.emsdiasum.com
- **Entidade para obtenção de informações adicionais:** Product safety department
- **1.4 Número de telefone de emergência:**  
ChemTrec 1-800-424-9300 Contract CCN7661  
1-703-527-3887

### SECÇÃO 2: Identificação dos perigos

- **2.1 Classificação da substância ou mistura**
- **Classificação em conformidade com o Regulamento (CE) n.º 1272/2008**



GHS02 chama

Flam. Liq. 2 H225 Líquido e vapor facilmente inflamáveis.



GHS06 caveira sobre tibias cruzadas

Acute Tox. 2 H310 Mortal em contacto com a pele.

Acute Tox. 3 H331 Tóxico por inalação.



GHS08 perigo para a saúde

Carc. 2 H351 Suspeito de provocar cancro.

Repr. 2 H361d Suspeito de afectar o nascituro.

STOT RE 1 H372 Afecta os órgãos após exposição prolongada ou repetida.



GHS07

( continuação na página 2 )

# Ficha de dados de segurança

## em conformidade com 1907/2006/CE, Artigo 31º

data da impressão 19.03.2019

Revisão: 19.03.2019

**Nome comercial:** triclorometano

(continuação da página 1)

Acute Tox. 4 H302 Nocivo por ingestão.  
 Skin Irrit. 2 H315 Provoca irritação cutânea.  
 Eye Irrit. 2 H319 Provoca irritação ocular grave.

### · 2.2 Elementos do rótulo

#### · Rotulagem em conformidade com o Regulamento (CE) n.º 1272/2008

A substância classificou-se e está etiquetado em conformidade com o regulamento CLP.

#### · Pictogramas de perigo



#### · Palavra-sinal Perigo

#### · Advertências de perigo

H225 Líquido e vapor facilmente inflamáveis.  
 H302 Nocivo por ingestão.  
 H310 Mortal em contacto com a pele.  
 H331 Tóxico por inalação.  
 H315 Provoca irritação cutânea.  
 H319 Provoca irritação ocular grave.  
 H351 Suspeito de provocar cancro.  
 H361d Suspeito de afectar o nascituro.  
 H372 Afecta os órgãos após exposição prolongada ou repetida.

#### · Recomendações de prudência

P303+P361+P353 SE ENTRAR EM CONTACTO COM A PELE (ou o cabelo): retirar imediatamente toda a roupa contaminada. Enxaguar a pele com água/tomar um duche.  
 P305+P351+P338 SE ENTRAR EM CONTACTO COM OS OLHOS: enxaguar cuidadosamente com água durante vários minutos. Se usar lentes de contacto, retire-as, se tal lhe for possível. Continuar a enxaguar.  
 P310 Contacte imediatamente um CENTRO DE INFORMAÇÃO ANTIVENENOS/médico.  
 P321 Tratamento específico (ver no presente rótulo).  
 P330 Enxaguar a boca.  
 P361+P364 Retirar imediatamente a roupa contaminada e lavá-la antes de a voltar a usar.  
 P405 Armazenar em local fechado à chave.  
 P501 Eliminar o conteúdo/recipiente de acordo com a legislação local/regional/nacional/internacional.

### · 2.3 Outros perigos

#### · Resultados da avaliação PBT e mPmB

· **PBT:** Não aplicável.  
 · **mPmB:** Não aplicável.

## SECÇÃO 3: Composição/informação sobre os componentes

### · 3.1 Caracterização química: Substâncias

#### · Designação CAS n.º

67-66-3 triclorometano

#### · Número(s) de identificação

· Número CE: 200-663-8

· Número de índice: 602-006-00-4

PT

(continuação na página 3)

# Ficha de dados de segurança

## em conformidade com 1907/2006/CE, Artigo 31º

data da impressão 19.03.2019

Revisão: 19.03.2019

Nome comercial: **triclorometano**

(continuação da página 2)

### SECÇÃO 4: Medidas de primeiros socorros

#### · 4.1 Descrição das medidas de primeiros socorros

##### · Indicações gerais:

*Os sintomas de envenenamento podem surgir apenas após várias horas, por isso é necessária vigilância médica pelo menos 48 horas após o acidente.*

##### · Em caso de inalação:

*Remover a vítima para um local arejado. Se necessário administrar respiração artificial. Manter a vítima aquecida. Se os sintomas persistirem, consultar o médico.*

*Se a vítima estiver inconsciente, posicioná-la e transportá-la com estabilidade, deitada lateralmente.*

##### · Em caso de contacto com a pele: Lavar imediatamente com água e sabão e enxaguar abundantemente.

##### · Em caso de contacto com os olhos:

*Enxaguar os olhos durante alguns minutos sob água corrente, mantendo as pálpebras abertas. Em caso de persistência dos sintomas, consultar o médico.*

##### · Em caso de ingestão: Consultar imediatamente o médico

#### · 4.2 Sintomas e efeitos mais importantes, tanto agudos como retardados

*Não existe mais nenhuma informação relevante disponível.*

#### · 4.3 Indicações sobre cuidados médicos urgentes e tratamentos especiais necessários

*Não existe mais nenhuma informação relevante disponível.*

### SECÇÃO 5: Medidas de combate a incêndios

#### · 5.1 Meios de extinção

##### · Meios adequados de extinção:

*CO2, pó extintor ou jacto de água. Um incêndio de grandes dimensões deve ser combatido com jacto de água ou espuma resistente ao álcool.*

#### · 5.2 Perigos especiais decorrentes da substância ou mistura

*Não existe mais nenhuma informação relevante disponível.*

#### · 5.3 Recomendações para o pessoal de combate a incêndios

##### · Equipamento especial de protecção: Colocar máscara de respiração.

### SECÇÃO 6: Medidas a tomar em caso de fugas acidentais

#### · 6.1 Precauções individuais, equipamento de protecção e procedimentos de emergência Não necessário.

#### · 6.2 Precauções a nível ambiental: Evitar que penetre na canalização / águas superficiais / águas subterrâneas.

#### · 6.3 Métodos e materiais de confinamento e limpeza:

*Recolher com produtos que absorvam líquidos (areia, seixos, absorventes universais, serradura).*

*Eliminar residualmente as substâncias contaminadas como um resíduo segundo o Ponto 13.*

*Assegurar uma ventilação adequada.*

#### · 6.4 Remissão para outras secções

*Para informações sobre uma manipulação segura, ver o capítulo 7.*

*Para informações referentes ao equipamento de protecção individual, ver o capítulo 8.*

*Para informações referentes à eliminação residual, ver o capítulo 13.*

### SECÇÃO 7: Manuseamento e armazenagem

#### · 7.1 Precauções para um manuseamento seguro Assegurar uma boa ventilação / exaustão no local de trabalho.

#### · Precauções para prevenir incêndios e explosões: Não são necessárias medidas especiais.

#### · 7.2 Condições de armazenagem segura, incluindo eventuais incompatibilidades

##### · Armazenagem:

##### · Requisitos para espaços ou contentores para armazenagem: Sem requisitos especiais.

(continuação na página 4)

**Ficha de dados de segurança**  
em conformidade com 1907/2006/CE, Artigo 31º

data da impressão 19.03.2019

Revisão: 19.03.2019

Nome comercial: tricolorometano

( continuação da página 3 )

- **Avisos para armazenagem conjunta:** Não necessário.
- **Outros avisos sobre as condições de armazenagem:** Manter o recipiente hermeticamente fechado.
- **7.3 Utilização(ões) final(is) específica(s)** Não existe mais nenhuma informação relevante disponível.

### SECÇÃO 8: Controlo da exposição/Protecção individual

- **Indicações adicionais para concepção de instalações técnicas:** Não existem outras informações, ver ponto 7.
- **8.1 Parâmetros de controlo**

· **Componentes cujo valor do limite de exposição no local de trabalho deve ser monitorizado:**

**67-66-3 tricolorometano**

VLE	Valor para exposição longa: 10 ppm A3; Lesão hepática, embrio/fetal; afeção do SNC
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- **Indicações adicionais:** Foram utilizadas como base as listas válidas à data da elaboração.
- **8.2 Controlo da exposição**
- **Equipamento de protecção individual:**
- **Medidas gerais de protecção e higiene:**  
Manter afastado de alimentos, bebidas e forragens.  
Despir imediatamente a roupa contaminada e embebida.  
Lavar as mãos antes das pausas e no fim do trabalho.  
Evitar o contacto com os olhos e com a pele.
- **Protecção respiratória:**  
Utilizar uma máscara respiratória se a exposição for reduzida ou durante um curto espaço de tempo; se esta for mais prolongada ou mais intensa, utilizar uma máscara respiratória independente do ar ambiente.
- **Protecção das mãos:**



Luvas de protecção

O material das luvas tem de ser impermeável e resistente ao produto / à substância / preparação.  
Uma vez que não foram realizados testes nesta área, não podemos recomendar um determinado tipo de material para as luvas que seja adequado para o produto / a preparação / a mistura de químicos.  
Escolher o material das luvas tendo em consideração a durabilidade, a permeabilidade e a degradação.

- **Material das luvas**  
A escolha das luvas mais adequadas não depende apenas do material, mas também de outras características qualitativas e varia de fabricante para fabricante.
- **Tempo de penetração no material das luvas**  
Deve informar-se sobre a validade exacta das suas luvas junto do fabricante e respeitá-la.
- **Protecção dos olhos:**  
Óculos de protecção



Óculos de protecção totalmente fechados

PT

( continuação na página 5 )

**Ficha de dados de segurança**  
em conformidade com 1907/2006/CE, Artigo 31°

data da impressão 19.03.2019

Revisão: 19.03.2019

Nome comercial: triclorometano

(continuação da página 4)

### SECÇÃO 9: Propriedades físico-químicas

· **9.1 Informações sobre propriedades físicas e químicas de base**

· **Informações gerais**

· **Aspeto:**

**Forma:** Líquido

**Cor:** Incolor

· **Odor:** Agradável

· **Limiar olfactivo:** Não classificado.

· **valor pH:** Não classificado.

· **Mudança do estado:**

**Ponto de fusão/ponto de congelação:** -63 °C

**Ponto de ebulição inicial e intervalo de ebulição:** 62 °C

· **Ponto de inflamação:** 0 °C

· **Inflamabilidade (sólido, gás):** Não aplicável.

· **Temperatura de ignição:** 982 °C

· **Temperatura de decomposição:** Não classificado.

· **Temperatura de autoignição:** Não classificado.

· **Propriedades explosivas:** O produto não é explosivo. Contudo, é possível a formação de misturas explosivas ar/vapor.

· **Limites de explosão:**

**Inferior:** Não classificado.

**Superior:** Não classificado.

· **Pressão de vapor em 20 °C:** 210 hPa

· **Densidade em 20 °C:** 1,47988 g/cm<sup>3</sup>

· **Densidade relativa** Não classificado.

· **Densidade de vapor** Não classificado.

· **Taxa de evaporação:** Não classificado.

· **Solubilidade em / miscibilidade com água em 20 °C:**

8 g/l

· **Coefficiente de partição: n-octanol/água** Não classificado.

· **Viscosidade:**

**Dinâmico em 20 °C:** 0,56 mPas

**Cinemático:** Não classificado.

· **9.2 Outras informações** Não existe mais nenhuma informação relevante disponível.

### SECÇÃO 10: Estabilidade e reactividade

· **10.1 Reactividade** Não existe mais nenhuma informação relevante disponível.

· **10.2 Estabilidade química**

· **Decomposição térmica / condições a evitar:** Não existe decomposição se usado de acordo com as especificações.

· **10.3 Possibilidade de reações perigosas** Não se conhecem reacções perigosas.

· **10.4 Condições a evitar** Não existe mais nenhuma informação relevante disponível.

· **10.5 Materiais incompatíveis:** Não existe mais nenhuma informação relevante disponível.

(continuação na página 6)



**Ficha de dados de segurança**  
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data da impressão 19.03.2019

Revisão: 19.03.2019

Nome comercial: triclorometano

(continuação da página 5)

· **10.6 Produtos de decomposição perigosos:** Não se conhecem produtos de decomposição perigosos.

### SECÇÃO 11: Informação toxicológica

#### · 11.1 Informações sobre os efeitos toxicológicos

##### · Toxicidade aguda

Nocivo por ingestão.

Mortal em contacto com a pele.

Tóxico por inalação.

#### · Valores LD/LC50 relevantes para a classificação:

por via oral	LD50	908 mg/kg (rat)
por via dérmica	LD50	75 mg/kg (rat)

##### · Efeito de irritabilidade primário:

##### · Corrosão/irritação cutânea

Provoca irritação cutânea.

##### · Lesões oculares graves/irritação ocular

Provoca irritação ocular grave.

##### · Sensibilização respiratória ou cutânea

Com base nos dados disponíveis, os critérios de classificação não são preenchidos.

##### · Efeitos CMR (carcinogenicidade, mutagenicidade e efeitos tóxicos na reprodução)

##### · Mutagenicidade em células germinativas

Com base nos dados disponíveis, os critérios de classificação não são preenchidos.

##### · Carcinogenicidade

Suspeito de provocar cancro.

##### · Toxicidade reprodutiva

Suspeito de afectar o nascituro.

##### · Toxicidade para órgãos-alvo específicos (STOT) - exposição única

Com base nos dados disponíveis, os critérios de classificação não são preenchidos.

##### · Toxicidade para órgãos-alvo específicos (STOT) - exposição repetida

Afecta os órgãos após exposição prolongada ou repetida.

##### · Perigo de aspiração Com base nos dados disponíveis, os critérios de classificação não são preenchidos.

### SECÇÃO 12: Informação ecológica

#### · 12.1 Toxicidade

· **Toxicidade aquática:** Não existe mais nenhuma informação relevante disponível.· **12.2 Persistência e degradabilidade** Não existe mais nenhuma informação relevante disponível.· **12.3 Potencial de bioacumulação** Não existe mais nenhuma informação relevante disponível.· **12.4 Mobilidade no solo** Não existe mais nenhuma informação relevante disponível.

#### · Outras indicações ecológicas:

##### · Indicações gerais:

Classe de perigo para a água 3 (D) (classificação pelas listas): muito perigoso para a água

Não deixar chegar às águas subterrâneas, aos cursos de água nem à canalização, nem em pequenas quantidades.

Perigo de poluição da água potável mesmo se forem derramadas quantidades muito pequenas no subsolo.

#### · 12.5 Resultados da avaliação PBT e mPmB

· **PBT:** Não aplicável.· **mPmB:** Não aplicável.· **12.6 Outros efeitos adversos** Não existe mais nenhuma informação relevante disponível.

PT

(continuação na página 7)

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em conformidade com 1907/2006/CE, Artigo 31º

data da impressão 19.03.2019

Revisão: 19.03.2019


Nome comercial: triclorometano

(continuação da página 6)

### SECÇÃO 13: Considerações relativas à eliminação

- 13.1 Métodos de tratamento de resíduos
- **Recomendação:** Não se pode eliminar juntamente com o lixo doméstico. Não permita que chegue à canalização.
- **Embalagens contaminadas:**
- **Recomendação:** Eliminação residual conforme o regulamento dos serviços públicos.

### SECÇÃO 14: Informações relativas ao transporte

· 14.1 Número ONU · ADR, IMDG, IATA	UN1888
· 14.2 Designação oficial de transporte da ONU · ADR · IMDG, IATA	1888 CLOROFÓRMIO CHLOROFORM
· 14.3 Classes de perigo para efeitos de transporte · ADR, IMDG, IATA	
	
· Classe · Rótulo	6.1 Matérias tóxicas 6.1
· 14.4 Grupo de embalagem · ADR, IMDG, IATA	III
· 14.5 Perigos para o ambiente:	Não aplicável.
· 14.6 Precauções especiais para o utilizador · N° Kemler: · N° EMS: · Segregation groups · Stowage Category · Stowage Code	Atenção: Matérias tóxicas 60 6.1-02 Liquid halogenated hydrocarbons A SW2 Clear of living quarters.
· 14.7 Transporte a granel em conformidade com o anexo II da Convenção MARPOL e o Código IBC	Não aplicável.
· Transporte/outras informações:	
· ADR · Quantidades Limitadas (LQ) · Quantidades exceptuadas (EQ)	5L Código: E1 Quantidade líquida máxima por embalagem interior: 30 ml Quantidade líquida máxima por embalagem exterior: 1000 ml
· Categoria de transporte · Código de restrição em túneis	2 E
· IMDG · Limited quantities (LQ)	5L

(continuação na página 8)

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em conformidade com 1907/2006/CE, Artigo 31°

data da impressão 19.03.2019

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**Nome comercial:** triclorometano

( continuação da página 7 )

· <b>Excepted quantities (EQ)</b>	Code: E1 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 1000 ml
· <b>UN "Model Regulation":</b>	UN 1888 CLOROFÓRMIO, 6.1, III

### SECÇÃO 15: Informação sobre regulamentação

- **15.1 Regulamentação/legislação específica para a substância ou mistura em matéria de saúde, segurança e ambiente**
- **Diretiva 2012/18/UE**
- **Substâncias perigosas designadas - ANEXO I** A substância não está listada.
- **Categoria "Seveso"**  
H2 TOXICIDADE AGUDA  
P5c LÍQUIDOS INFLAMÁVEIS
- **Quantidades-limiar (em toneladas), para a aplicação de requisitos de nível inferior 50 t**
- **Quantidades-limiar (em toneladas), para a aplicação de requisitos de nível superior 200 t**
- **Regulamento (CE) n.º 1907/2006 ANEXO XVII** Condições de limitação: 3, 32, 40
- **Regulamento (UE) N.º 649/2012 Annex I Part 1**
- **15.2 Avaliação da segurança química:** Não foi realizada nenhuma Avaliação de Segurança Química.

### SECÇÃO 16: Outras informações

As informações fornecidas baseiam-se no estado actual dos nossos conhecimentos, embora não representem uma garantia das propriedades do produto e não fundamentam uma relação contratual.

- **Abreviaturas e acrónimos:**  
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  
IATA: International Air Transport Association  
GHS: Globally Harmonised System of Classification and Labelling of Chemicals  
EINECS: European Inventory of Existing Commercial Chemical Substances  
CAS: Chemical Abstracts Service (division of the American Chemical Society)  
LC50: Lethal concentration, 50 percent  
LD50: Lethal dose, 50 percent  
PBT: Persistent, Bioaccumulative and Toxic  
vPvB: very Persistent and very Bioaccumulative  
Flam. Liq. 2: Líquidos inflamáveis – Categoria 2  
Acute Tox. 4: Toxicidade aguda – Categoria 4  
Acute Tox. 2: Toxicidade aguda – Categoria 2  
Acute Tox. 3: Toxicidade aguda – Categoria 3  
Skin Irrit. 2: Corrosão/irritação cutânea – Categoria 2  
Eye Irrit. 2: Lesões oculares graves/irritação ocular – Categoria 2  
Carc. 2: Carcinogenicidade – Categoria 2  
Repr. 2: Toxicidade reprodutiva – Categoria 2  
STOT RE 1: Toxicidade para órgãos-alvo específicos (exposição repetida) – Categoria 1

PT

# แผ่นข้อมูลความปลอดภัย

## ตาม 1907/2006/EC, มาตรา 31

วันที่พิมพ์ 2019.03.19

การปรับปรุงใหม่ : 2019.03.19

### 1 การระบุสาร/ การทำ/ และของบริษัท / บริษัทที่เข้าถือครอง

- 1.1 ลักษณะเฉพาะของผลิตภัณฑ์
- ชื่อทางการค้า คลอโรฟอร์ม
- เลขที่รายชื่อ 12540, 12541, 12550, 12551
- เลขที่ CAS: 67-66-3
- จำนวน EC: 200-663-8
- เลขที่ EU: 602-006-00-4
- 1.2 สารหรือสารผสมที่เกี่ยวข้องที่ระบุให้ใช้และไม่ควรถูกให้ใช้ ไม่มีข้อมูลที่เกี่ยวข้องนอกเหนือจากนี้
- การประยุกต์ใช้สาร/ การทำ เคมีภัณฑ์ห้องทดลอง
- 1.3 รายละเอียดของผู้จัดหาข้อมูลด้านความปลอดภัย
- ผู้ผลิต/ ผู้จัดหา  
Electron Microscopy Sciences  
1560 Industry Road  
USA-Hatfield, PA 19440  
Tel: 215-412-8400 Fax: 215-412-8450  
email: sgkcck@aol.com  
www.emsdiasum.com
- ข้อมูลรายละเอียดเพิ่มเติมหาได้จาก Product safety department
- 1.4 หมายเลขโทรศัพท์ฉุกเฉิน:  
ChemTrec 1-800-424-9300 Contract CCN7661  
1-703-527-3887

### 2 การระบุสิ่งที่เป็นอันตราย

- 2.1 การจำแนกประเภทของสารหรือสารผสม
- การแบ่งประเภทตามข้อบังคับ (จีซี) เลขที่ 1272/2008



เปลวไฟ

Flam. Liq. 2 H225 ของเหลวและไอที่ไวไฟสูง



หัวกระโหลกและกระดูกไขว้

Acute Tox. 2 H310 เป็นอันตรายถึงตายหากสัมผัสกับผิวหนัง

Acute Tox. 3 H331 มีพิษหากสูดหายใจเข้า



สิ่งอันตรายต่อสุขภาพ

Carc. 2 H351 สงสัยว่าจะเป็นสาเหตุการเกิดมะเร็ง

Repr. 2 H361d Suspected of damaging the unborn child.

STOT RE 1 H372 เป็นสาเหตุทำให้อวัยวะเสียหายจากการสัมผัสเป็นเวลานานหรือซ้ำๆ



Acute Tox. 4 H302 เป็นอันตรายหากกลืนเข้าไป

(ต่อที่หน้า 2)

-TH

# แผ่นข้อมูลความปลอดภัย

## ตาม 1907/2006/EC, มาตรา 31

วันที่พิมพ์ 2019.03.19

การปรับปรุงใหม่ : 2019.03.19

### ชื่อทางการค้า คลอโรฟอร์ม

(ต่อหน้า 1)

Skin Irrit. 2 H315 เป็นสาเหตุให้เกิดการระคายเคืองผิวหนัง  
 Eye Irrit. 2 H319 เป็นสาเหตุให้เกิดการระคายเคืองอย่างร้ายแรงที่ตา

#### 2.2 องค์ประกอบของฉลาก

- ฉลากตามระเบียบ (EC) เลขที่ 1272/2008 สารได้รับการจัดประเภทและติดฉลากตามข้อบังคับของ CLP
- ภาพสัญลักษณ์ที่เป็นอันตราย



GHS02 GHS06 GHS08

- สัญญาณคำ อันตราย
- ประกาศสิ่งที่เป็นอันตราย
  - H225 ของเหลวและไอที่ไวไฟสูง
  - H302 เป็นอันตรายหากกลืนเข้าไป
  - H310 เป็นอันตรายถึงตายหากสัมผัสกับผิวหนัง
  - H331 มีพิษหากสูดหายใจเข้า
  - H315 เป็นสาเหตุให้เกิดการระคายเคืองผิวหนัง
  - H319 เป็นสาเหตุให้เกิดการระคายเคืองอย่างร้ายแรงที่ตา
  - H351 สงสัยว่าจะเป็นสาเหตุการเกิดมะเร็ง
  - H361d Suspected of damaging the unborn child.
  - H372 เป็นสาเหตุทำให้อวัยวะเสียหายจากการสัมผัสเป็นเวลานานหรือซ้ำๆ
- ประกาศการป้องกันระมัดระวังภัย
  - P303+P361+P353 หากสัมผัสผู้ถูกผิวหนัง (หรือเส้นผม) ถอดเสื้อผ้าที่เปื้อนทั้งหมดทันที ล้างผิวหนังด้วยน้ำ/อาบน้ำ
  - P305+P351+P338 หากเข้าตา : ชะล้างตาอย่างระมัดระวังเป็นเวลาหลายๆนาทีถอดคอนแทกซ์เลนส์ถ้ายังอยู่ที่เดิมและสะดวกที่จะทำก็ให้ชะล้างต่อไป
  - P310 โทรศัพท์ถึงศูนย์พิษวิทยา/แพทย์ ทันที
  - P321 การบำบัดรักษาเฉพาะ (ดูฉลาก)
  - P330 บ้วนปาก
  - P361+P364 ถอดเสื้อผ้าที่เปื้อนทั้งหมดทันทีและซักก่อนที่จะนำกลับมาใช้ใหม่
  - P405 เก็บในที่ปลอดภัย
  - P501 ทิ้งสิ่งที่บรรจุ/ภาชนะที่บรรจุตามกฎหมายของท้องถิ่น/แคว้น/ในประเทศ/ระหว่างประเทศ
- 2.3 อันตรายอื่นๆ
- ผลของ PBT และการประเมิน vPvB
- PBT: ไม่สามารถใช้ได้
- vPvB: ไม่สามารถใช้ได้

### 3 ส่วนประกอบ/ ข้อมูลรายละเอียดของส่วนผสมต่างๆ

- 3.1 คุณลักษณะทางเคมี: สาร
- การระบุเลขที่ CAS  
67-66-3 คลอโรฟอร์ม
- เลขที่ที่ระบุ
- จำนวน EC: 200-663-8
- เลขที่ EU: 602-006-00-4

TH

(ต่อหน้า 3)

# แผนข้อมูลความปลอดภัย

## ตาม 1907/2006/EC, มาตรา 31

วันที่พิมพ์ 2019.03.19

การปรับปรุงใหม่ : 2019.03.19

### ชื่อทางการค้า คลอโรฟอร์ม

(ต่อที่หน้า 2)

#### 4 มาตรการการปฐมพยาบาลเบื้องต้น

- 4.1 คำอธิบายถึงมาตรการปฐมพยาบาล
- ข้อมูลรายละเอียดทั่วไป
  - อาการจากพิษอาจเกิดขึ้นหลังจากนั้นหลายชั่วโมงดังนั้นจะต้องเฝ้าติดตามอาการทางการแพทย์อย่างน้อย 48 ชั่วโมงหลังจากอุบัติเหตุ
  - หลังจากการสูดหายใจเข้าไป
    - หากริเวณที่มีอากาศบริสุทธิ์หากจำเป็นให้ใช้เครื่องช่วยหายใจให้คนไข้ก่อนปรึกษาแพทย์หากอาการยังไม่บรรเทาในกรณีที่คนไข้ไม่รู้สึกรู้ตัวให้ขนย้ายคนไข้อย่างมั่นคงในท่าตะแคงด้านข้าง
  - หลังจากการสัมผัสผิวหนัง ล้างด้วยน้ำและสบู่แล้วฟอกให้ทั่วทันที
  - หลังจากการสัมผัสสูดดมตา สะดาดที่เปิดอยู่ใต้น้ำที่ก่าล้างไหลเป็นเวลาหลายนาทีถ้าอาการไม่ดีขึ้นให้ปรึกษาแพทย์
  - หลังจากการกลืนเข้าไป: พบแพทย์โดยทันที
- 4.2 อาการสำคัญส่วนใหญ่และผลกระทบ ทั้งชนิดเฉียบพลันและค่อยๆ แสดงอาการ
  - ไม่มีข้อมูลที่เกี่ยวข้องนอกเหนือจากนี้
- 4.3 ข้อบ่งชี้ของอาการที่ต้องเข้ารับการรักษาจากแพทย์ทันทีและการบำบัดพิเศษที่จำเป็น
  - ไม่มีข้อมูลที่เกี่ยวข้องนอกเหนือจากนี้

#### 5 มาตรการการดับเพลิง

- 5.1 สารที่ใช้ดับเพลิง
- สารดับเพลิงที่เหมาะสม
  - คาร์บอนไดออกไซด์สเปรย์ผงหรือน้ำดับเพลิงขนาดใหญ่ด้วยการฉีดน้ำหรือโฟมแอลกอฮอล์ที่ทนทาน
- 5.2 อันตรายเฉพาะอย่างที่เกิดจากสารหรือส่วนผสม ไม่มีข้อมูลที่เกี่ยวข้องนอกเหนือจากนี้
- 5.3 คำแนะนำสำหรับพนักงานดับเพลิง
- อุปกรณ์ป้องกันภัย อุปกรณ์ป้องกันซึ่งเหมาะสำหรับการหายใจทางปาก

#### 6 มาตรการลดอุบัติเหตุ

- 6.1 การป้องกันส่วนบุคคล อุปกรณ์ป้องกัน และขั้นตอนดำเนินการเมื่อเกิดกรณีฉุกเฉิน ไม่ได้กำหนด
- 6.2 การให้ความคุ้มครองสิ่งแวดล้อม: อย่าปล่อยให้เข้าไปในท่อน้ำทิ้ง/ นานบนดินหรือใต้ดิน
- 6.3 วิธีดำเนินการและวัสดุสำหรับการบรรจุและการทำความสะอาด:
  - ดูดซับด้วยวัสดุที่สามารถยึดของเหลวไว้ (ทรายไดอะโตไมท์ตัวยึดเกาะกรดตัวยึดทั่วๆไปซีลีส)
  - ทิ้งวัสดุที่ปนเปื้อนเป็นของเสียตามรายการในบัญชี 13
  - ตรวจสอบให้แน่ใจว่ามีการระบายอากาศที่ดีพอ
- 6.4 การอ้างอิงถึงส่วนอื่น
  - ดูข้อมูลรายละเอียดเรื่องความปลอดภัยในการขนถ่ายจากส่วนที่ 7
  - ดูข้อมูลรายละเอียดเรื่องอุปกรณ์ป้องกันส่วนบุคคลจากส่วนที่ 8
  - ดูข้อมูลรายละเอียดเรื่องการกำจัดจากส่วนที่ 13

#### 7 การขนถ่ายและการจัดเก็บ

- 7.1 การป้องกันสวหน้าสำหรับการจัดการด้านความปลอดภัย
  - ทำให้แน่ใจว่าสถานที่ทำงานมีการระบายอากาศ/ ไอเสียที่ดี
- ข้อมูลรายละเอียดเกี่ยวกับการป้องกันอัคคีภัยและการระเบิด ไม่มีมาตรการพิเศษ
- 7.2 เงื่อนไขในการเก็บรักษาอย่างปลอดภัย, รวมถึงสิ่งที่เข้ากันไม่ได้ใดๆ
  - การจัดเก็บ
  - ข้อกำหนดที่ต้องปฏิบัติตามสำหรับห้องเก็บและภาชนะบรรจุ ไม่มีข้อกำหนดพิเศษ
  - ข้อมูลรายละเอียดด้านการจัดเก็บในสถานที่จัดเก็บรวม ไม่ได้กำหนด
  - ข้อมูลรายละเอียดเพิ่มเติมด้านสภาพการจัดเก็บ เก็บโดยปิดผนึกอย่างแน่นหนา

(ต่อที่หน้า 4)

TH

# แผนข้อมูลความปลอดภัย

## ตาม 1907/2006/EC, มาตรา 31

วันที่พิมพ์ 2019.03.19

การปรับปรุงใหม่ : 2019.03.19

### ชื่อทางการค้า คลอโรฟอร์ม

(ต่อที่หน้า 3)

- 7.3 การระบุถึงการสิ้นสุดการใช้ ไม่มีข้อมูลที่เกี่ยวข้องนอกเหนือจากนี้

## 8 การควบคุมการทิ้งในลักษณะเปิด / การป้องกันภัยส่วนบุคคล

- ข้อมูลรายละเอียดเสริมสำหรับการออกแบบสิ่งอำนวยความสะดวกทางเทคนิค ไม่มีข้อมูลนอกเหนือจากนี้ดูรายการ 7

### · 8.1 การควบคุมตัวแปร

- ส่วนผสมพร้อมค่าขอบเขตที่ต้องเฝ้าดูในสถานที่ปฏิบัติงาน

#### 67-66-3 คลอโรฟอร์ม

PEL (US)	Ceiling limit value: 240 mg/m <sup>3</sup> , 50 ppm
REL (US)	ค่าระยะสั้น: 9.78* mg/m <sup>3</sup> , 2* ppm *60-min; See Pocket Guide App. A
TLV (US)	ค่าระยะยาว: 49 mg/m <sup>3</sup> , 10 ppm

- ข้อมูลรายละเอียดเสริม รายการถูกต้องระหว่างที่จัดทำโดยอาศัยการใช้งานเป็นหลัก

### · 8.2 การควบคุมการสัมผัส

#### · อุปกรณ์ป้องกันภัยส่วนบุคคล

#### · มาตรการการป้องกันและสุขอนามัยทั่วไป

- เก็บให้ห่างจากสิ่งของที่เป็นอาหารเครื่องดื่มและอาหารสัตว์
- ให้ถอดเสื้อผ้าที่เปื้อนและเช็ดก่อนออกทันที
- ล้างมือก่อนที่จะหยุดพักและเมื่อสิ้นสุดเวลาทำงาน
- หลีกเลี่ยงการสัมผัสถูกตาและผิวหนัง

#### · การป้องกันการสูดหายใจเข้าไป

- ในกรณีที่อยู่เป็นเวลานานหรืออากาศเป็นพิษระดับต่ำใช้หน้ากากกรองเพื่อช่วยหายใจในกรณีที่มีความเข้มข้นสูงหรืออยู่เป็นเวลานานให้ใช้เครื่องป้องกันที่มีอุปกรณ์ช่วยหายใจในตัว

#### · การป้องกันมือ



ถุงมือป้องกัน

วัสดุของถุงมือจะต้องไม่ให้อากาศผ่านเข้าออกและทนทานต่อผลิตภัณฑ์/ สาร/ การผลิต เนื่องจากขาดการทดสอบจึงไม่มีคำแนะนำสำหรับวัสดุที่ใช้ทำถุงมือสำหรับผลิตภัณฑ์/ การผลิต/ ของผสมเคมี เลือกวัสดุสำหรับถุงมือโดยพิจารณาจากเวลาที่ใช้ในการซึมผ่านอัตราการแพร่และการเสื่อม

#### · วัสดุที่ใช้ทำถุงมือ

การเลือกใช้ถุงมือที่เหมาะสมไม่เพียงแต่ขึ้นอยู่กับวัสดุแต่ยังขึ้นกับมาตรฐานด้านคุณภาพและข้อแตกต่างระหว่างผู้ผลิตแต่ละแห่ง

#### · เวลาที่ใช้ในการทะลุผ่านวัสดุที่ใช้ทำถุงมือ

ผู้ผลิตถุงมือป้องกันจะต้องทดสอบหาเวลาแน่นอนที่ใช้ในการทะลุผ่านและจะต้องมีการตรวจสอบติดตาม

#### · การป้องกันตา

แว่นนิรภัย



แว่นตาที่ขอบปิดสนิท

TH

(ต่อที่หน้า 5)



# แผ่นข้อมูลความปลอดภัย

## ตาม 1907/2006/EC, มาตรา 31

วันที่พิมพ์ 2019.03.19

การปรับปรุงใหม่ : 2019.03.19

### ชื่อทางการค้า คลอโรฟอร์ม

(ต่อหน้า 4)

## 9 คุณสมบัติทางกายภาพและเคมี

<ul style="list-style-type: none"> <li>· 9.1 ข้อมูลคุณสมบัติพื้นฐานทางกายภาพและเคมี</li> <li>· ข้อมูลรายละเอียดทั่วไป</li> <li>· ลักษณะ : <ul style="list-style-type: none"> <li>· รูปสีฐาน : ของไหล</li> <li>· สี : ไม่มีสี</li> <li>· กลิ่น : น่าสบาย</li> <li>· เกณฑ์กลิ่น : ไม่ได้กำหนดไว้.</li> </ul> </li> </ul>	
· ค่า pH	ไม่ได้กำหนดไว้.
· การเปลี่ยนสถานะ	
จุดหลอมเหลว/ ขอบเขตการหลอมละลาย	-63 °C
จุดเดือด/ ขอบเขตการเดือด	62 °C
· จุดวาบไฟ	0 °C
· ความสามารถติดไฟ (ของแข็งแกส)	ไม่สามารถใช้ได้
· อุณหภูมิจุดระเบิด	982 °C
· อุณหภูมิสลายตัว	ไม่ได้กำหนดไว้.
· การเผาไหม้ด้วยตัวเอง	ไม่ได้กำหนดไว้.
· อันตรายจากการระเบิด	ผลิตภัณฑ์ไม่ได้เป็นสารระเบิดอย่างไรก็ตามอาจเป็นไปได้ที่การผสมของอากาศ/ ไอจะทำให้เกิดการ
· ขอบเขตการระเบิด	
ขั้นต่ำ	ไม่ได้กำหนดไว้.
ขั้นสูง	ไม่ได้กำหนดไว้.
· ความดันไอ ที่ 20 °C	210 hPa
· ความหนาแน่น ที่ 20 °C	1.47988 g/cm <sup>3</sup>
· ความหนาแน่นสัมพัทธ์	ไม่ได้กำหนดไว้.
· ความหนาแน่นของไอ	ไม่ได้กำหนดไว้.
· อัตราการระเหย	ไม่ได้กำหนดไว้.
· ความสามารถในการละลายใน / ความสามารถผสมเป็นสารละลายเนื้อเดียวทุกส่วนผสมกับน้ำ ที่ 20 °C	8 g/l
· สัมประสิทธิ์การแยกตัว (เฮน-ออกทานอล/น้ำ)	ไม่ได้กำหนดไว้.
· ความหนืด	
(ไดนามิก) พลศาสตร์ ที่ 20 °C	0.56 mPas
(คิเนเมติก) จลนศาสตร์	ไม่ได้กำหนดไว้.
· 9.2 ข้อมูลอื่นๆ	ไม่มีข้อมูลที่เกี่ยวข้องนอกเหนือจากนี้

## 10 ความเสถียรและความสามารถในการทำปฏิกิริยา

- 10.1 ปฏิกิริยาได้ตอบ ไม่มีข้อมูลที่เกี่ยวข้องนอกเหนือจากนี้
- 10.2 เสถียรภาพทางเคมี
- การสลายตัวด้วยความร้อน / เงื่อนไขที่ต้องหลีกเลี่ยง ไม่มีการสลายตัวถ้าใช้ตามรายละเอียดที่ระบุไว้
- 10.3 ความเป็นไปได้ของการเกิดปฏิกิริยาอันตราย ไม่มีปฏิกิริยาเป็นอันตรายที่รู้จัก
- 10.4 เงื่อนไขเพื่อการหลีกเลี่ยง ไม่มีข้อมูลที่เกี่ยวข้องนอกเหนือจากนี้
- 10.5 วัสดุที่เข้ากันไม่ได้: ไม่มีข้อมูลที่เกี่ยวข้องนอกเหนือจากนี้

(ต่อหน้า 6)

-TH

# แผนข้อมูลความปลอดภัย

## ตาม 1907/2006/EC, มาตรา 31

วันที่พิมพ์ 2019.03.19

การปรับปรุงใหม่ : 2019.03.19

### ชื่อทางการค้า คลอโรฟอร์ม

(ต่อที่หน้า 5)

- 10.6 อันตรายจากการสลายตัวของผลิตภัณฑ์: ไม่มีสารจากการสลายตัวที่เป็นอันตรายที่รู้จัก

### 11 ข้อมูลรายละเอียดเกี่ยวกับพิษวิทยา

- 11.1 ข้อมูลเกี่ยวกับผลกระทบทางพิษวิทยา
- ความเป็นพิษอย่างสาหัส:  
เป็นอันตรายหากกลืนเข้าไป  
เป็นอันตรายถึงตายหากสัมผัสกับผิวหนัง  
มีพิษหากสูดหายใจเข้า

#### การจัดแบ่งตามค่า LD/LC50

ทางปาก	LD50	908 mg/kg (rat)
ทางผิวหนัง	LD50	75 mg/kg (rat)

- อาการระคายเคืองเบื้องต้น
- บนผิวหนัง  
เป็นสาเหตุให้เกิดการระคายเคืองผิวหนัง
- ที่ดวงตา  
เป็นสาเหตุให้เกิดการระคายเคืองอย่างร้ายแรงที่ตา
- การทำให้แพ้

### 12 ข้อมูลรายละเอียดเกี่ยวกับนิเวศวิทยา

- 12.1 ความเป็นพิษ
- ความเป็นพิษที่เกี่ยวกับน้ำ ไม่มีข้อมูลที่เกี่ยวข้องนอกเหนือจากนี้
- 12.2 การคงอยู่และการย่อยสลาย ไม่มีข้อมูลที่เกี่ยวข้องนอกเหนือจากนี้
- 12.3 การสะสมทางชีวภาพที่อาจเกิดขึ้น ไม่มีข้อมูลที่เกี่ยวข้องนอกเหนือจากนี้
- 12.4 การเปลี่ยนแปลงในดิน ไม่มีข้อมูลที่เกี่ยวข้องนอกเหนือจากนี้
- ข้อมูลรายละเอียดเสริมเกี่ยวกับนิเวศวิทยา
- หมายเหตุทั่วไป  
เป็นอันตรายต่อน้ำชั้น 3 (กฎข้อบังคับของเยอรมัน)(การประเมินค่าตามรายการ):เป็นอันตรายสูงสุดกับน้ำ  
อย่าปล่อยให้ผลิตภัณฑ์ไปถึงน้ำผิวดินเส้นทางน้ำหรือระบบระบายน้ำเสียแม้ว่าจะเป็นปริมาณเล็กน้อยเท่านั้น  
เป็นอันตรายต่อน้ำดื่มแม้จะร่วงลงในพื้นดินเป็นปริมาณที่น้อยมากก็ตาม
- 12.5 ผลของ PBT และการประเมิน vPvB
- PBT: ไม่สามารถใช้ได้
- vPvB: ไม่สามารถใช้ได้
- 12.6 ผลข้างเคียงอื่นๆ ไม่มีข้อมูลที่เกี่ยวข้องนอกเหนือจากนี้

### 13 การพิจารณาการกำจัด

- 13.1 วิธีการกำจัดของเสีย
- คำแนะนำ ต้องไม่ทิ้งไปพร้อมกับขยะจากบ้านเรือนอย่าปล่อยให้ผลิตภัณฑ์เข้าถึงระบบระบายน้ำเสีย
- ภาชนะบรรจุที่ยังไม่ได้ล้างทำความสะอาด
- คำแนะนำ การกำจัดจะต้องทำตามกฎระเบียบที่เป็นทางการ

### 14 ข้อมูลรายละเอียดในการขนส่ง

- 14.1 เลขที่ UN
- ADR, IMDG, IATA UN1888

(ต่อที่หน้า 7)

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# แผนข้อมูลความปลอดภัย


## ตาม 1907/2006/EC, มาตรา 31

วันที่พิมพ์ 2019.03.19

การปรับปรุงใหม่ : 2019.03.19

### ชื่อทางการค้า คลอโรฟอร์ม

(ต่อหน้า 6)

<ul style="list-style-type: none"> <li>· 14.2 ชื่อการจัดส่งสินค้าที่เหมาะสมของ UN</li> <li>· ADR</li> <li>· IMDG, IATA</li> </ul>	1888 CHLOROFORM CHLOROFORM
<ul style="list-style-type: none"> <li>· 14.3 ชั้นเรียนอันตรายจากการขนส่ง</li> <li>· ADR, IMDG, IATA</li> </ul>	
	
<ul style="list-style-type: none"> <li>· ประเภท</li> <li>· ฉลากสิ่งที่เป็นอันตราย</li> </ul>	6.1 สารมีพิษ 6.1
<ul style="list-style-type: none"> <li>· 14.4 กลุ่มของภาชนะบรรจุ</li> <li>· ADR, IMDG, IATA</li> </ul>	III
<ul style="list-style-type: none"> <li>· 14.5 สิ่งที่เป็นอันตรายต่อสภาพแวดล้อม</li> </ul>	ไม่สามารถใช้ได้
<ul style="list-style-type: none"> <li>· 14.6 การป้องกันพิเศษล่วงหน้าสำหรับผู้ใช้</li> <li>· รหัสความอันตราย:</li> <li>· หมายเลข EMS</li> <li>· Segregation groups</li> <li>· Stowage Category</li> <li>· Stowage Code</li> </ul>	ค่าเตือน !: สารมีพิษ 60 6.1-02 Liquid halogenated hydrocarbons A SW2 Clear of living quarters.
<ul style="list-style-type: none"> <li>· 14.7 การขนส่งขนาดใหญ่ตามภาคผนวก 2 ของ MARPOL73/78 และรหัส IBC</li> </ul>	ไม่สามารถใช้ได้
<ul style="list-style-type: none"> <li>· การขนส่ง/ข้อมูลรายละเอียดเสริม</li> </ul>	
<ul style="list-style-type: none"> <li>· ADR</li> <li>· ปริมาณที่จำกัด (LQ)</li> <li>· Excepted quantities (EQ)</li> </ul>	5L Code: E1 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 1000 ml
<ul style="list-style-type: none"> <li>· หมวดหมู่การขนส่ง</li> <li>· รหัสควบคุมการผ่านอุโมงค์</li> </ul>	2 E
<ul style="list-style-type: none"> <li>· IMDG</li> <li>· Limited quantities (LQ)</li> <li>· Excepted quantities (EQ)</li> </ul>	5L Code: E1 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 1000 ml
<ul style="list-style-type: none"> <li>· “กฎระเบียบต้นแบบ” ของ UN</li> </ul>	UN 1888 CHLOROFORM, 6.1, III

### 15 ข้อมูลรายละเอียดของกฎระเบียบ

- 15.1 ความปลอดภัย สุขภาพและระเบียบ/กฎหมายสิ่งแวดล้อมโดยเฉพาะของสารหรือสารผสม
- บัญชีรายชื่อวัตถุอันตราย
- กรมวิชาการเกษตร สารที่ไม่ได้อยู่ในรายการ
- กรมประมง สารที่ไม่ได้อยู่ในรายการ
- กรมปศุสัตว์ สารที่ไม่ได้อยู่ในรายการ
- อาหารและยา ชนิดที่ 4
- กรมโรงงานอุตสาหกรรม ชนิดที่ 3

(ต่อหน้า 8)

-TH-

# แผนข้อมูลความปลอดภัย

## ตาม 1907/2006/EC, มาตรา 31

วันที่พิมพ์ 2019.03.19

การปรับปรุงใหม่ : 2019.03.19

### ชื่อทางการค้า คลอโรฟอร์ม

(ต่อหน้า 7)

- กรมธุรกิจพลังงาน สารที่ไม่ได้อยู่ในรายการ
- 15.2 การประเมินความปลอดภัยของสารเคมี: ไม่ได้ดำเนินการตามการประเมินความปลอดภัยของสารเคมี

### 16 ข้อมูลรายละเอียดอื่นๆ

ข้อมูลรายละเอียดนี้ใช้ความรู้ปัจจุบันของเราเป็นหลักอย่างไรก็ตามข้อมูลนี้ไม่ใช่การรับประกันจากสถาบันต่อคุณสมบัติเฉพาะของผลิตภัณฑ์และไม่สามารถยืนยันการบังคับใช้ตามกฎหมายที่เกี่ยวข้องกับสัญญา

#### · คำย่อและชื่อย่อที่ผสมขึ้น

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

IATA: International Air Transport Association

GHS: Globally Harmonised System of Classification and Labelling of Chemicals

EINECS: European Inventory of Existing Commercial Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

Flam. Liq. 2: Flammable liquids – Category 2

Acute Tox. 4: Acute toxicity – Category 4

Acute Tox. 2: Acute toxicity – Category 2

Acute Tox. 3: Acute toxicity – Category 3

Skin Irrit. 2: Skin corrosion/irritation – Category 2

Eye Irrit. 2: Serious eye damage/eye irritation – Category 2

Carc. 2: Carcinogenicity – Category 2

Repr. 2: Reproductive toxicity – Category 2

STOT RE 1: Specific target organ toxicity (repeated exposure) – Category 1

-TH-

# Ficha de datos de seguridad

## según 1907/2006/CE, Artículo 31

fecha de impresión 19.03.2019

Revisión: 19.03.2019

### SECCIÓN 1: Identificación de la sustancia o la mezcla y de la sociedad o la empresa

#### · 1.1 Identificador del producto

- **Nombre comercial:** triclorometano
- **Número del artículo:** 12540, 12541, 12550, 12551
- **Número CAS:**  
67-66-3
- **Número CE:**  
200-663-8
- **Número de clasificación:**  
602-006-00-4

#### · 1.2 Usos pertinentes identificados de la sustancia o de la mezcla y usos desaconsejados

No existen más datos relevantes disponibles.

- **Utilización del producto / de la elaboración** Sustancias químicas de laboratorio

#### · 1.3 Datos del proveedor de la ficha de datos de seguridad

##### · **Fabricante/distribuidor:**

Electron Microscopy Sciences  
1560 Industry Road  
USA-Hatfield, PA 19440  
Tel: 215-412-8400 Fax: 215-412-8450  
email: sgkcck@aol.com  
www.emsdiasum.com

##### Aname

C/ Perez Galdos no. 2  
28693 Quijorna  
Madrid, Spain  
Tel: +34.91.816.89.50  
Fax: +34.91.816.85.94  
email: ventas@aname.es

- **Área de información:** Product safety department

#### · 1.4 Teléfono de emergencia:

ChemTrec 1-800-424-9300 Contract CCN7661  
1-703-527-3887

### SECCIÓN 2: Identificación de los peligros

#### · 2.1 Clasificación de la sustancia o de la mezcla

- **Clasificación con arreglo al Reglamento (CE) n° 1272/2008**



GHS02 llama

Flam. Liq. 2 H225 Líquido y vapores muy inflamables.



GHS06 calavera y tibias cruzadas

Acute Tox. 2 H310 Mortal en contacto con la piel.

Acute Tox. 3 H331 Tóxico en caso de inhalación.



GHS08 peligro para la salud

( se continua en página 2 )

# Ficha de datos de seguridad

## según 1907/2006/CE, Artículo 31

fecha de impresión 19.03.2019

Revisión: 19.03.2019

Nombre comercial: triclorometano

( se continua en página 1 )

Carc. 2 H351 Se sospecha que provoca cáncer.  
 Repr. 2 H361d Se sospecha que daña al feto.  
 STOT RE 1 H372 Provoca daños en los órganos tras exposiciones prolongadas o repetidas.



GHS07

Acute Tox. 4 H302 Nocivo en caso de ingestión.  
 Skin Irrit. 2 H315 Provoca irritación cutánea.  
 Eye Irrit. 2 H319 Provoca irritación ocular grave.

### · 2.2 Elementos de la etiqueta

#### · Etiquetado con arreglo al Reglamento (CE) n° 1272/2008

La sustancia se ha clasificado y etiquetado de conformidad con el reglamento CLP.

#### · Pictogramas de peligro



GHS02

GHS06

GHS08

#### · Palabra de advertencia Peligro

#### · Indicaciones de peligro

H225 Líquido y vapores muy inflamables.  
 H302 Nocivo en caso de ingestión.  
 H310 Mortal en contacto con la piel.  
 H331 Tóxico en caso de inhalación.  
 H315 Provoca irritación cutánea.  
 H319 Provoca irritación ocular grave.  
 H351 Se sospecha que provoca cáncer.  
 H361d Se sospecha que daña al feto.  
 H372 Provoca daños en los órganos tras exposiciones prolongadas o repetidas.

#### · Consejos de prudencia

P303+P361+P353 EN CASO DE CONTACTO CON LA PIEL (o el pelo): Quitar inmediatamente todas las prendas contaminadas. Aclararse la piel con agua/ ducharse.  
 P305+P351+P338 EN CASO DE CONTACTO CON LOS OJOS: Aclarar cuidadosamente con agua durante varios minutos. Quitar las lentes de contacto, si lleva y resulta fácil. Seguir aclarando.  
 P310 Llamar inmediatamente a un CENTRO DE TOXICOLOGÍA/médico.  
 P321 Se necesita un tratamiento específico (ver en esta etiqueta).  
 P330 Enjuagarse la boca.  
 P361+P364 Quitar inmediatamente todas las prendas contaminadas y lavarlas antes de volver a usarlas.  
 P405 Guardar bajo llave.  
 P501 Eliminar el contenido o el recipiente conforme a la reglamentación local/regional/nacional/internacional.

### · 2.3 Otros peligros

#### · Resultados de la valoración PBT y mPmB

· **PBT:** No aplicable.  
 · **mPmB:** No aplicable.

ES

( se continua en página 3 )

# Ficha de datos de seguridad

## según 1907/2006/CE, Artículo 31

fecha de impresión 19.03.2019

Revisión: 19.03.2019

Nombre comercial: triclorometano

( se continua en página 2 )

### SECCIÓN 3: Composición/información sobre los componentes

- **3.1 Caracterización química: Sustancias**
- **Denominación N° CAS**  
67-66-3 triclorometano
- **Número(s) de identificación**
- **Número CE:** 200-663-8
- **Número de clasificación:** 602-006-00-4

### SECCIÓN 4: Primeros auxilios

- **4.1 Descripción de los primeros auxilios**
- **Instrucciones generales:**  
*Los síntomas de intoxicación pueden presentarse después de muchas horas, por lo que se requiere una supervisión médica durante un mínimo de 48 horas después del accidente.*
- **En caso de inhalación del producto:**  
*Suministrar aire fresco; eventualmente hacer respiración artificial, calor. Si los trastornos persisten, consultar al médico.*  
*Las personas desmayadas deben tenderse y transportarse de lado con la suficiente estabilidad.*
- **En caso de contacto con la piel:** *Lavar inmediatamente con agua y jabón y enjuagar bien.*
- **En caso de con los ojos:**  
*Limpiar los ojos abiertos durante varios minutos con agua corriente. En caso de trastornos persistentes consultar un médico.*
- **En caso de ingestión:** *Consultar inmediatamente un médico.*
- **4.2 Principales síntomas y efectos, agudos y retardados** *No existen más datos relevantes disponibles.*
- **4.3 Indicación de toda atención médica y de los tratamientos especiales que deban dispensarse inmediatamente**  
*No existen más datos relevantes disponibles.*

### SECCIÓN 5: Medidas de lucha contra incendios

- **5.1 Medios de extinción**
- **Sustancias extintoras apropiadas:**  
*CO<sub>2</sub>, polvo extintor o chorro de agua rociada. Combatir incendios mayores con chorro de agua rociada o espuma resistente al alcohol.*
- **5.2 Peligros específicos derivados de la sustancia o la mezcla** *No existen más datos relevantes disponibles.*
- **5.3 Recomendaciones para el personal de lucha contra incendios**
- **Equipo especial de protección:** *Colocarse la protección respiratoria.*

### SECCIÓN 6: Medidas en caso de vertido accidental

- **6.1 Precauciones personales, equipo de protección y procedimientos de emergencia** *No es necesario.*
- **6.2 Precauciones relativas al medio ambiente:**  
*Evitar que penetre en la canalización /aguas de superficie /agua subterráneas.*
- **6.3 Métodos y material de contención y de limpieza:**  
*Quitar con material absorbente (arena, kieselgur, aglutinante de ácidos, aglutinante universal, aserrín). Desechar el material contaminado como vertido según ítem 13.*  
*Asegurar suficiente ventilación.*
- **6.4 Referencia a otras secciones**  
*Ver capítulo 7 para mayor información sobre una manipulación segura.*  
*Ver capítulo 8 para mayor información sobre el equipo personal de protección.*

( se continua en página 4 )

# Ficha de datos de seguridad

## según 1907/2006/CE, Artículo 31

fecha de impresión 19.03.2019

Revisión: 19.03.2019

Nombre comercial: triclorometano

( se continua en página 3 )

Para mayor información sobre cómo desechar el producto, ver capítulo 13.

### SECCIÓN 7: Manipulación y almacenamiento

- **7.1 Precauciones para una manipulación segura**  
Asegurar suficiente ventilación /aspiración en el puesto de trabajo.
- **Prevención de incendios y explosiones:** No se requieren medidas especiales.
- **7.2 Condiciones de almacenamiento seguro, incluidas posibles incompatibilidades**
- **Almacenamiento:**
- **Exigencias con respecto al almacén y los recipientes:** No se requieren medidas especiales.
- **Normas en caso de un almacenamiento conjunto:** No es necesario.
- **Indicaciones adicionales sobre las condiciones de almacenamiento:**  
Mantener el recipiente cerrado herméticamente.
- **7.3 Usos específicos finales** No existen más datos relevantes disponibles.

### SECCIÓN 8: Controles de exposición/protección individual

- **Instrucciones adicionales para el acondicionamiento de instalaciones técnicas:**  
Sin datos adicionales, ver punto 7.

#### · 8.1 Parámetros de control

- **Componentes con valores límite admisibles que deben controlarse en el puesto de trabajo:**

#### 67-66-3 triclorometano

LEP	Valor de larga duración: 10 mg/m <sup>3</sup> , 2 ppm r, via dérmica, VLI
-----	--

- **Indicaciones adicionales:** Como base se han utilizado las listas vigentes en el momento de la elaboración.

#### · 8.2 Controles de la exposición

##### · **Equipo de protección individual:**

##### · **Medidas generales de protección e higiene:**

Mantener alejado de alimentos, bebidas y alimentos para animales.

Quitarse de inmediato la ropa ensuciada o impregnada.

Lavarse las manos antes de las pausas y al final del trabajo.

Evitar el contacto con los ojos y la piel.

##### · **Protección respiratoria:**

Si la exposición va a ser breve o de poca intensidad, colocarse una máscara respiratoria. Para una exposición más intensa o de mayor duración, usar un aparato de respiración autónomo.

##### · **Protección de manos:**



Guantes de protección

El material del guante deberá ser impermeable y resistente al producto / sustancia / preparado.

Ante la ausencia de tests específicos, no se puede recomendar ningún material específico para guantes de protección contra el producto / preparado / mezcla de sustancias químicas.

Selección del material de los guantes en función de los tiempos de rotura, grado de permeabilidad y degradación.

##### · **Material de los guantes**

La elección del guante adecuado no depende únicamente del material, sino también de otras características de calidad, que pueden variar de un fabricante a otro.

( se continua en página 5 )



# Ficha de datos de seguridad

## según 1907/2006/CE, Artículo 31

fecha de impresión 19.03.2019

Revisión: 19.03.2019

Nombre comercial: triclorometano

( se continua en página 4 )

· **Tiempo de penetración del material de los guantes**

El tiempo de resistencia a la penetración exacto deberá ser pedido al fabricante de los guantes. Este tiempo debe ser respetado.

· **Protección de ojos:**

Gafas de protección



Gafas de protección herméticas

### SECCIÓN 9: Propiedades físicas y químicas

· **9.1 Información sobre propiedades físicas y químicas básicas**

· **Datos generales**

· **Aspecto:**

Forma: Líquido

Color: Incoloro

· **Olor:** Agradable

· **Umbral olfativo:** No determinado.

· **valor pH:** No determinado.

· **Cambio de estado**

Punto de fusión/punto de congelación: -63 °C

Punto inicial de ebullición e intervalo de ebullición: 62 °C

· **Punto de inflamación:** 0 °C

· **Inflamabilidad (sólido, gas):** No aplicable.

· **Temperatura de ignición:** 982 °C

· **Temperatura de descomposición:** No determinado.

· **Temperatura de auto-inflamación:** No determinado.

· **Propiedades explosivas:** El producto no es explosivo; sin embargo, pueden formarse mezclas explosivas de vapor / aire.

· **Límites de explosión:**

Inferior: No determinado.

Superior: No determinado.

· **Presión de vapor a 20 °C:** 210 hPa

· **Densidad a 20 °C:** 1,47988 g/cm<sup>3</sup>

· **Densidad relativa** No determinado.

· **Densidad de vapor** No determinado.

· **Tasa de evaporación:** No determinado.

· **Solubilidad en / miscibilidad con agua a 20 °C:** 8 g/l

· **Coefficiente de reparto: n-octanol/agua:** No determinado.

· **Viscosidad:**

Dinámica a 20 °C: 0,56 mPas

Cinemática: No determinado.

( se continua en página 6 )

# Ficha de datos de seguridad

## según 1907/2006/CE, Artículo 31

fecha de impresión 19.03.2019

Revisión: 19.03.2019

Nombre comercial: triclorometano

( se continua en página 5 )

· 9.2 Otros datos

No existen más datos relevantes disponibles.

### SECCIÓN 10: Estabilidad y reactividad

- **10.1 Reactividad** No existen más datos relevantes disponibles.
- **10.2 Estabilidad química**
- **Descomposición térmica / condiciones que deben evitarse:** No se descompone al emplearse adecuadamente.
- **10.3 Posibilidad de reacciones peligrosas** No se conocen reacciones peligrosas.
- **10.4 Condiciones que deben evitarse** No existen más datos relevantes disponibles.
- **10.5 Materiales incompatibles:** No existen más datos relevantes disponibles.
- **10.6 Productos de descomposición peligrosos:** No se conocen productos de descomposición peligrosos.

### SECCIÓN 11: Información toxicológica

- **11.1 Información sobre los efectos toxicológicos**

- **Toxicidad aguda**

Nocivo en caso de ingestión.

Mortal en contacto con la piel.

Tóxico en caso de inhalación.

- **Valores LD/LC50 (dosis letal /dosis letal = 50%) relevantes para la clasificación:**

Oral	LD50	908 mg/kg (rat)
Dermal	LD50	75 mg/kg (rat)

- **Efecto estimulante primario:**

- **Corrosión o irritación cutáneas**

Provoca irritación cutánea.

- **Lesiones o irritación ocular graves**

Provoca irritación ocular grave.

- **Sensibilización respiratoria o cutánea**

A la vista de los datos disponibles, no se cumplen los criterios de clasificación.

- **Efectos CMR (carcinogenicidad, mutagenicidad y toxicidad para la reproducción)**

- **Mutagenicidad en células germinales**

A la vista de los datos disponibles, no se cumplen los criterios de clasificación.

- **Carcinogenicidad**

Se sospecha que provoca cáncer.

- **Toxicidad para la reproducción**

Se sospecha que daña al feto.

- **Toxicidad específica en determinados órganos (STOT) – exposición única**

A la vista de los datos disponibles, no se cumplen los criterios de clasificación.

- **Toxicidad específica en determinados órganos (STOT) – exposición repetida**

Provoca daños en los órganos tras exposiciones prolongadas o repetidas.

- **Peligro de aspiración** A la vista de los datos disponibles, no se cumplen los criterios de clasificación.

### SECCIÓN 12: Información ecológica

- **12.1 Toxicidad**

- **Toxicidad acuática:** No existen más datos relevantes disponibles.

- **12.2 Persistencia y degradabilidad** No existen más datos relevantes disponibles.

- **12.3 Potencial de bioacumulación** No existen más datos relevantes disponibles.

- **12.4 Movilidad en el suelo** No existen más datos relevantes disponibles.

( se continua en página 7 )

# Ficha de datos de seguridad

## según 1907/2006/CE, Artículo 31

fecha de impresión 19.03.2019

Revisión: 19.03.2019

Nombre comercial: triclorometano


( se continua en página 6 )

- **Indicaciones medioambientales adicionales:**
- **Indicaciones generales:**  
 Nivel de riesgo para el agua 3 (clasificación de listas): muy peligroso para el agua  
 No dejar que se infiltre en aguas subterráneas, aguas superficiales o en alcantarillados, ni siquiera en pequeñas cantidades.  
 Una cantidad ínfima vertida en el subsuelo ya representa un peligro para el agua potable.
- **12.5 Resultados de la valoración PBT y mPmB**
- **PBT:** No aplicable.
- **mPmB:** No aplicable.
- **12.6 Otros efectos adversos** No existen más datos relevantes disponibles.

### SECCIÓN 13: Consideraciones relativas a la eliminación

- **13.1 Métodos para el tratamiento de residuos**
- **Recomendación:** No debe desecharse con la basura doméstica. No debe llegar al alcantarillado.
- **Embalajes sin limpiar:**
- **Recomendación:** Eliminar conforme a las disposiciones oficiales.

### SECCIÓN 14: Información relativa al transporte

- |   |                                 |
|---|---------------------------------|
| · <b>14.1 Número ONU</b>  | UN1888                          |
| · <b>ADR, IMDG, IATA</b>  |                                 |
| · <b>14.2 Designación oficial de transporte de las Naciones Unidas</b>                        |                                 |
| · <b>ADR</b>  | 1888 CLOROFORMO                 |
| · <b>IMDG, IATA</b>   | CHLOROFORM                      |
| · <b>14.3 Clase(s) de peligro para el transporte</b>  |                                 |
| · <b>ADR, IMDG, IATA</b>  |                                 |
|            |                                 |
| · <b>Clase</b>  | 6.1 Materias tóxicas            |
| · <b>Etiqueta</b>   | 6.1                             |
| · <b>14.4 Grupo de embalaje</b>   |                                 |
| · <b>ADR, IMDG, IATA</b>  | III                             |
| · <b>14.5 Peligros para el medio ambiente:</b>  | No aplicable.                   |
| · <b>14.6 Precauciones particulares para los usuarios</b>                                     | Atención: Materias tóxicas      |
| · <b>Número Kemler:</b>   | 60                              |
| · <b>Número EMS:</b>  | 6.1-02                          |
| · <b>Segregation groups</b>   | Liquid halogenated hydrocarbons |
| · <b>Stowage Category</b>   | A                               |
| · <b>Stowage Code</b>   | SW2 Clear of living quarters.   |
| · <b>14.7 Transporte a granel con arreglo al anexo II del Convenio MARPOL y el Código IBC</b> | No aplicable.                   |

( se continua en página 8 )

# Ficha de datos de seguridad

## según 1907/2006/CE, Artículo 31

fecha de impresión 19.03.2019

Revisión: 19.03.2019

**Nombre comercial:** triclorometano

( se continua en página 7 )

· **Transporte/datos adicionales:**

· **ADR**

- **Cantidades limitadas (LQ)** 5L
- **Cantidades exceptuadas (EQ)** Código: E1  
Cantidad neta máxima por envase interior: 30 ml  
Cantidad neta máxima por embalaje exterior: 1000 ml
- **Categoría de transporte** 2
- **Código de restricción del túnel** E

· **IMDG**

- **Limited quantities (LQ)** 5L
- **Excepted quantities (EQ)** Code: E1  
Maximum net quantity per inner packaging: 30 ml  
Maximum net quantity per outer packaging: 1000 ml

· **"Reglamentación Modelo" de la UNECE:** UN 1888 CLOROFORMO, 6.1, III

### SECCIÓN 15: Información reglamentaria

- **15.1 Reglamentación y legislación en materia de seguridad, salud y medio ambiente específicas para la sustancia o la mezcla**
- **Directiva 2012/18/UE**
- **Sustancias peligrosas nominadas - ANEXO I** No contiene la sustancia.
- **Categoría Seveso**  
H2 TOXICIDAD AGUDA  
P5c LÍQUIDOS INFLAMABLES
- **Cantidad umbral (toneladas) a efectos de aplicación de los requisitos de nivel inferior** 50 t
- **Cantidad umbral (toneladas) a efectos de aplicación de los requisitos de nivel superior** 200 t
- **REGLAMENTO (CE) n° 1907/2006 ANEXO XVII** Restricciones: 3, 32, 40
- **Reglamento (UE) No 649/2012 Annex I Part 1**
- **15.2 Evaluación de la seguridad química:** Una evaluación de la seguridad química no se ha llevado a cabo.

### SECCIÓN 16: Otra información

Los datos se fundan en el estado actual de nuestros conocimientos, pero no constituyen garantía alguna de cualidades del producto y no generan ninguna relación jurídica contractual.

· **Abreviaturas y acrónimos:**

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  
 IATA: International Air Transport Association  
 GHS: Globally Harmonised System of Classification and Labelling of Chemicals  
 EINECS: European Inventory of Existing Commercial Chemical Substances  
 CAS: Chemical Abstracts Service (division of the American Chemical Society)  
 LC50: Lethal concentration, 50 percent  
 LD50: Lethal dose, 50 percent  
 PBT: Persistent, Bioaccumulative and Toxic  
 vPvB: very Persistent and very Bioaccumulative  
 Flam. Liq. 2: Líquidos inflamables – Categoría 2  
 Acute Tox. 4: Toxicidad aguda – Categoría 4  
 Acute Tox. 2: Toxicidad aguda – Categoría 2  
 Acute Tox. 3: Toxicidad aguda – Categoría 3  
 Skin Irrit. 2: Corrosión o irritación cutáneas – Categoría 2  
 Eye Irrit. 2: Lesiones oculares graves o irritación ocular – Categoría 2

( se continua en página 9 )

**Ficha de datos de seguridad**  
según 1907/2006/CE, Artículo 31

fecha de impresión 19.03.2019

Revisión: 19.03.2019

**Nombre comercial: triclorometano**

*Carc. 2: Carcinogenicidad – Categoría 2*

*Repr. 2: Toxicidad para la reproducción – Categoría 2*

*STOT RE 1: Toxicidad específica en determinados órganos (exposiciones repetidas) – Categoría 1*

( se continua en página 8 )

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