

# Chloroform

## Safety Data Sheet

according to Regulation (EU) 2015/830

Date of issue: 03/04/2017

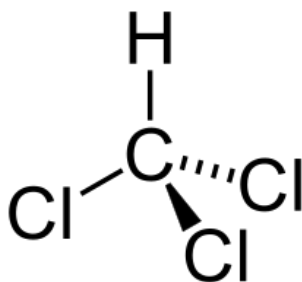
Doc No: SDS-910.033/0



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

#### 1.1. Product identifier

Product form : Substance  
Substance name : Chloroform  
EC Index-No. : 602-006-00-4  
EC-No. : 200-663-8  
CAS-No. : 67-66-3  
Type of product : Pure substance  
Formula : CHCl<sub>3</sub>  
Chemical structure :



Synonyms : 1,1,1-trichloromethane / Chloroform / formyl trichloride / freon 20 / methane trichloride / methane, trichloro- / methenyl chloride / methenyl trichloride / methyl trichloride / R 20 / R 20 refrigerant / TCM (=trichloromethane) / trichloroform / trichloromethane

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

##### 1.2.1. Relevant identified uses

Use of the substance/mixture : Bactericide  
Fumigant  
Insecticide  
Solvent  
Chemical substance for research  
Laboratory chemical

##### 1.2.2. Uses advised against

No additional information available

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

ISOLAB GmbH  
Bahnhofstrasse 10, D-97877  
Wertheim - Germany  
T +49 93 42 912 355 - F +49 93 42 912 357  
[prodsafe@isolab.de](mailto:prodsafe@isolab.de)

#### 1.4. Emergency telephone number

Country	Organisation/Company	Address	Emergency number	Comment
Germany	Giftnotruf der Charité CBF, Haus VIII (Wirtschaftsgebäude), UG	Hindenburgdamm 30 12203 Berlin	+49 30 19240	

### SECTION 2: Hazards identification

#### 2.1. Classification of the substance or mixture

##### Classification according to Regulation (EC) No. 1272/2008 [CLP]

Carc. 2 : H351  
Repr. 2 : H361d  
Acute Tox. 3 (Inhalation) : H331  
STOT RE 1 : H372  
Acute Tox. 4 (Oral) : H302  
Eye Irrit. 2 : H319  
Skin Irrit. 2 : H315

Full text of hazard classes and H-statements : see section 16

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### Adverse physicochemical, human health and environmental effects

No additional information available

### 2.2. Label elements

#### Labelling according to Regulation (EC) No. 1272/2008 [CLP]

Hazard pictograms (CLP) :



GHS06

GHS08

Signal word (CLP) :

Danger

Hazard statements (CLP) :

H351 - Suspected of causing cancer  
H361d - Suspected of damaging the unborn child  
H331 - Toxic if inhaled  
H372 - Causes damage to organs through prolonged or repeated exposure  
H302 - Harmful if swallowed  
H319 - Causes serious eye irritation  
H315 - Causes skin irritation

Precautionary statements (CLP) :

P302 + P352 - IF ON SKIN: Wash with plenty of soap and water.  
P304 + P340 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.  
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
P308 + P310 - IF exposed or concerned: immediately call a POISON CENTER or doctor/physician.

### 2.3. Other hazards

No additional information available

## SECTION 3: Composition/information on ingredients

### 3.1. Substances

Name	Product identifier	%
Chloroform	(CAS-No.) 67-66-3 (EC-No.) 200-663-8 (EC Index-No.) 602-006-00-4	100

Full text of H-statements: see section 16

### 3.2. Mixtures

Not applicable

## SECTION 4: First aid measures

### 4.1. Description of first aid measures

First-aid measures general :

Check the vital functions. Unconscious: maintain adequate airway and respiration. Respiratory arrest: artificial respiration or oxygen. Cardiac arrest: perform resuscitation. Victim conscious with laboured breathing: half-seated. Victim in shock: on his back with legs slightly raised. Vomiting: prevent asphyxia/aspiration pneumonia. Prevent cooling by covering the victim (no warming up). Keep watching the victim. Give psychological aid. Keep the victim calm, avoid physical strain. Depending on the victim's condition: doctor/hospital. Never give alcohol to drink.

First-aid measures after inhalation :

Remove the victim into fresh air. Immediately consult a doctor/medical service.

First-aid measures after skin contact :

Wash immediately with lots of water. Soap may be used. Do not apply (chemical) neutralizing agents. Take victim to a doctor if irritation persists.

First-aid measures after eye contact :

Rinse immediately with plenty of water. Do not apply neutralizing agents. Take victim to an ophthalmologist if irritation persists.

First-aid measures after ingestion :

Rinse mouth with water. Immediately after ingestion: give lots of water to drink. Do not give milk/oil to drink. Do not induce vomiting. Call Poison Information Centre ([www.big.be/antigif.htm](http://www.big.be/antigif.htm)). Consult a doctor/medical service if you feel unwell. Ingestion of large quantities: immediately to hospital. Take the container/vomit to the doctor/hospital.

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### 4.2. Most important symptoms and effects, both acute and delayed

Symptoms/effects after inhalation	: Feeling of weakness. Dry/sore throat. Central nervous system depression. Headache. Nausea. Vomiting. Dizziness. Narcosis. Mental confusion. Drunkenness. Coordination disorders. Disturbances of consciousness. Disturbances of heart rate. Enlargement/affection of the liver. Affection of the renal tissue.
Symptoms/effects after skin contact	: Red skin. Dry skin. Tingling/irritation of the skin. ON CONTINUOUS EXPOSURE/CONTACT: Blisters.
Symptoms/effects after eye contact	: Irritation of the eye tissue.
Symptoms/effects after ingestion	: Risk of aspiration pneumonia. Irritation of the gastric/intestinal mucosa. Symptoms similar to those listed under inhalation.
Chronic symptoms	: ON CONTINUOUS/REPEATED EXPOSURE/CONTACT: Behavioural disturbances. Impaired concentration. Delusions. Gastrointestinal complaints. Degeneration of heart tissue. Enlargement/affection of the liver. Yellow skin. Affection of the renal tissue.

### 4.3. Indication of any immediate medical attention and special treatment needed

No additional information available

## SECTION 5: Fire-fighting measures

### 5.1. Extinguishing media

Suitable extinguishing media	: Adapt extinguishing media to the environment.
Unsuitable extinguishing media	: No unsuitable extinguishing media known.

### 5.2. Special hazards arising from the substance or mixture

Fire hazard	: DIRECT FIRE HAZARD. Non-flammable. INDIRECT FIRE HAZARD. May build up electrostatic charges: risk of ignition. Reactions involving a fire hazard: see "Reactivity Hazard".
Explosion hazard	: INDIRECT EXPLOSION HAZARD. Reactions with explosion hazards: see "Reactivity Hazard".

### 5.3. Advice for firefighters

Firefighting instructions	: Cool tanks/drums with water spray/remove them into safety. Do not move the load if exposed to heat. Dilute toxic gases with water spray. Take account of toxic fire-fighting water. Use water moderately and if possible collect or contain it.
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## SECTION 6: Accidental release measures

### 6.1. Personal precautions, protective equipment and emergency procedures

#### 6.1.1. For non-emergency personnel

Protective equipment	: Gloves. Protective goggles. Head/neck protection. Protective clothing. Large spills/in enclosed spaces: gas-tight suit. Reactivity hazard: gas-tight suit. See "Material-Handling" to select protective clothing.
Emergency procedures	: Keep upwind. Mark the danger area. Consider evacuation. Seal off low-lying areas. Close doors and windows of adjacent premises. No naked flames. Keep containers closed. Protect substance against light. Wash contaminated clothes.

#### 6.1.2. For emergency responders

No additional information available

### 6.2. Environmental precautions

Prevent soil and water pollution. Prevent spreading in sewers.

### 6.3. Methods and material for containment and cleaning up

For containment	: Contain released substance, pump into suitable containers. Consult "Material-handling" to select material of containers. Plug the leak, cut off the supply. Dam up the liquid spill. Try to reduce evaporation. Provide equipment/receptacles with earthing. Dilute toxic gases/vapours with water spray. Take account of toxic/corrosive precipitation water.
Methods for cleaning up	: Take up liquid spill into inert absorbent material, e.g.: sand, earth, vermiculite. Scoop absorbed substance into closing containers. See "Material-handling" for suitable container materials. Carefully collect the spill/leftovers. Damaged/cooled tanks must be emptied. Clean contaminated surfaces with an excess of water. Take collected spill to manufacturer/competent authority. Wash clothing and equipment after handling.

### 6.4. Reference to other sections

No additional information available

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### SECTION 7: Handling and storage

#### 7.1. Precautions for safe handling

Precautions for safe handling : Comply with the legal requirements. Remove contaminated clothing immediately. Clean contaminated clothing. Thoroughly clean/dry the installation before use. Do not discharge the waste into the drain. Use earthed equipment. Keep away from naked flames/heat. Observe strict hygiene. Keep container tightly closed. Measure the concentration in the air regularly. Carry operations in the open/under local exhaust/ventilation or with respiratory protection.

#### 7.2. Conditions for safe storage, including any incompatibilities

Heat and ignition sources : KEEP SUBSTANCE AWAY FROM: heat sources.  
 Information on mixed storage : KEEP SUBSTANCE AWAY FROM: oxidizing agents. (strong) acids. (strong) bases.  
 Storage area : Store in a dark area. Ventilation at floor level. Fireproof storeroom. Provide for a tub to collect spills. Provide the tank with earthing. Unauthorized persons are not admitted. Store only in a limited quantity. Meet the legal requirements. Store at ambient temperature.  
 Special rules on packaging : SPECIAL REQUIREMENTS: hermetical. clean. opaque. correctly labelled. meet the legal requirements. Secure fragile packagings in solid containers.  
 Packaging materials : SUITABLE MATERIAL: metal. steel. stainless steel. iron. glass. tin. MATERIAL TO AVOID: aluminium. copper.

#### 7.3. Specific end use(s)

No additional information available

### SECTION 8: Exposure controls/personal protection

#### 8.1. Control parameters

Chloroform (67-66-3)		
EU	Local name	Chloroform
EU	IOELV TWA (mg/m <sup>3</sup> )	10 mg/m <sup>3</sup> (Chloroform; EU; Time-weighted average exposure limit 8 h; Indicative occupational exposure limit value)
EU	IOELV TWA (ppm)	2 ppm (Chloroform; EU; Time-weighted average exposure limit 8 h; Indicative occupational exposure limit value)
EU	Notes	Skin
Austria	Local name	Trichlormethan (R 20)
Austria	MAK (mg/m <sup>3</sup> )	10 mg/m <sup>3</sup>
Austria	MAK (ppm)	2 ppm
Austria	Remark (AT)	H
Belgium	Local name	Chloroforme # Chloroform
Belgium	Limit value (mg/m <sup>3</sup> )	10 mg/m <sup>3</sup> (Chloroforme; Belgium; Time-weighted average exposure limit 8 h)
Belgium	Limit value (ppm)	2 ppm (Chloroforme; Belgium; Time-weighted average exposure limit 8 h)
Belgium	Remark (BE)	D: La mention D signifie que la r�sorption de l'agent, via la peau, les muqueuses ou les yeux, constitue une partie importante de l'exposition totale. Cette r�sorption peut se faire tant par contact direct que par pr�sence de l'agent dans l'air. # De vermelding D betekent dat de opname van het agens via de huid, de slijmvliezen of de ogen een belangrijk deel van de totale blootstelling vormt. Deze opname kan het gevolg zijn van zowel direct contact als zijn aanwezigheid in de lucht.
Bulgaria	Local name	Хлороформ
Bulgaria	OEL TWA (mg/m <sup>3</sup> )	10 mg/m <sup>3</sup>
Bulgaria	OEL TWA (ppm)	2 ppm
Bulgaria	Notes	Кожа (възможна е значителна резорбция чрез кожата); • (Химични агенти, за които са определени гранични стойности във въздуха на работната среда за Европейската общност)
Croatia	Local name	Kloroform; (Triklorometan)
Croatia	GVI (granična vrijednost izloženosti) (mg/m <sup>3</sup> )	10 mg/m <sup>3</sup>
Croatia	GVI (granična vrijednost izloženosti) (ppm)	2 ppm

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Chloroform (67-66-3)		
Croatia	Naznake (HR)	K (Skin): (naznaka da tvar može štetno djelovati kroz kožu); EU* (naznaka da se radi o tvarima za koje su utvrđene indikativne granične vrijednosti izloženosti prema Direktivi 2000/39/ EC (prva lista)); Xn (Štetno); Karc. kat. 3 (tvari koje izazivaju zabrinutost zbog mogućeg karcinogenog djelovanja na ljude)
Czech Republic	Local name	Trichlormethan
Czech Republic	Expoziční limity (PEL) (mg/m <sup>3</sup> )	10 mg/m <sup>3</sup>
Czech Republic	Expoziční limity (PEL) (ppm)	2.1 ppm
Czech Republic	Expoziční limity (NPK-P) (mg/m <sup>3</sup> )	20 mg/m <sup>3</sup>
Czech Republic	Expoziční limity (NPK-P) (ppm)	4 ppm
Czech Republic	Remark (CZ)	P, D
Denmark	Local name	Chloroform (Trichlormethan)
Denmark	Grænseværdie (langvarig) (mg/m <sup>3</sup> )	10 mg/m <sup>3</sup>
Denmark	Grænseværdie (langvarig) (ppm)	2 ppm
Denmark	Anmærkninger (DK)	E (betyder, at stoffet har en EF-grænseværdi); H (betyder, at stoffet kan optages gennem huden); K (betyder, at stoffet anses for at kunne være kræftfremkaldende)
Finland	Local name	Kloroformi
Finland	HTP-arvo (8h) (mg/m <sup>3</sup> )	10 mg/m <sup>3</sup>
Finland	HTP-arvo (8h) (ppm)	2 ppm
Finland	HTP-arvo (15 min)	20 mg/m <sup>3</sup>
Finland	HTP-arvo (15 min) (ppm)	4 ppm
Finland	Huomautus (FI)	iho
France	Local name	Trichlorométhane (Chloroforme)
France	VME (mg/m <sup>3</sup> )	10 mg/m <sup>3</sup> (Trichlorométhane; France; Time-weighted average exposure limit 8 h; VRC: Valeur réglementaire contraignante)
France	VME (ppm)	2 ppm (Trichlorométhane; France; Time-weighted average exposure limit 8 h; VRC: Valeur réglementaire contraignante)
France	VLE (mg/m <sup>3</sup> )	250 mg/m <sup>3</sup> (Trichlorométhane; France; Short time value; VL: Valeur non réglementaire indicative)
France	VLE (ppm)	50 ppm (Trichlorométhane; France; Short time value; VL: Valeur non réglementaire indicative)
France	Note (FR)	VME réglementaire contraignante; VLE recommandée/admise; risque de pénétration percutanée; substance classée cancérigène de catégorie 2
Germany	Local name	Trichlormethan (Chloroform)
Germany	TRGS 900 Occupational exposure limit value (mg/m <sup>3</sup> )	2.5 mg/m <sup>3</sup>
Germany	TRGS 900 Occupational exposure limit value (ppm)	0.5 ppm
Germany	Remark (TRGS 900)	DFG,EU,Y,H,X
Gibraltar	Eight hours mg/m <sup>3</sup>	10 mg/m <sup>3</sup>
Gibraltar	Eight hours ppm	2 ppm
Gibraltar	Name of agent	Chloroform
Gibraltar	Notation	Skin
Greece	OEL TWA (mg/m <sup>3</sup> )	50 mg/m <sup>3</sup>
Greece	OEL TWA (ppm)	10 ppm
Hungary	Local name	KLOROFORM
Hungary	AK-érték	10 mg/m <sup>3</sup>
Hungary	CK-érték	10 mg/m <sup>3</sup>
Hungary	Megjegyzések (HU)	VI.
Ireland	Local name	Chloroform

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<b>Chloroform (67-66-3)</b>		
Ireland	OEL (8 hours ref) (mg/m <sup>3</sup> )	9.8 mg/m <sup>3</sup>
Ireland	OEL (8 hours ref) (ppm)	2 ppm
Ireland	Notes (IE)	Sk, IOELV
Italy	Local name	Cloroformio
Italy	OEL TWA (mg/m <sup>3</sup> )	10 mg/m <sup>3</sup>
Italy	OEL TWA (ppm)	2 ppm
Latvia	Local name	Hloroforms (trihlormetāns)
Latvia	OEL TWA (mg/m <sup>3</sup> )	10 mg/m <sup>3</sup>
Latvia	OEL TWA (ppm)	2 ppm
Luxembourg	Local name	Chloroforme
Luxembourg	OEL TWA (mg/m <sup>3</sup> )	10 mg/m <sup>3</sup>
Luxembourg	OEL TWA (ppm)	2 ppm
Malta	Local name	Chloroform
Malta	OEL TWA (mg/m <sup>3</sup> )	10 mg/m <sup>3</sup>
Malta	OEL TWA (ppm)	2 ppm
Netherlands	Local name	Chloroform
Netherlands	Grenswaarde TGG 8H (mg/m <sup>3</sup> )	5 mg/m <sup>3</sup> (Chloroform; Netherlands; Time-weighted average exposure limit 8 h; Public occupational exposure limit value)
Netherlands	Grenswaarde TGG 8H (ppm)	1 ppm (Chloroform; Netherlands; Time-weighted average exposure limit 8 h; Public occupational exposure limit value)
Netherlands	Grenswaarde TGG 15MIN (mg/m <sup>3</sup> )	25 mg/m <sup>3</sup> (Chloroform; Netherlands; Short time value; Public occupational exposure limit value)
Netherlands	Grenswaarde TGG 15MIN (ppm)	5 ppm (Chloroform; Netherlands; Short time value; Public occupational exposure limit value)
Poland	Local name	Chloroform
Poland	NDS (mg/m <sup>3</sup> )	8 mg/m <sup>3</sup>
Portugal	Local name	Clorofórmio (Triclorometano)
Portugal	OEL TWA (ppm)	10 ppm
Romania	Local name	Cloroform (triclormetan)
Romania	OEL TWA (mg/m <sup>3</sup> )	10 mg/m <sup>3</sup>
Romania	OEL TWA (ppm)	2 ppm
Slovakia	Local name	Chloroform (trichlórmétán)
Slovakia	NPHV (priemerná) (mg/m <sup>3</sup> )	10 mg/m <sup>3</sup>
Slovakia	NPHV (priemerná) (ppm)	2 ppm
Slovakia	Upozornenie (SK)	K - znamená, že faktor môže byť ľahko absorbovaný kožou
Slovenia	Local name	triklorometan (kloroform)
Slovenia	OEL TWA (mg/m <sup>3</sup> )	10 mg/m <sup>3</sup>
Slovenia	OEL TWA (ppm)	2 ppm
Spain	Local name	Triclorometano (Cloroformo)
Spain	VLA-ED (mg/m <sup>3</sup> )	10 mg/m <sup>3</sup>
Spain	VLA-ED (ppm)	2 ppm

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Spain	Notes	r (Esta sustancia tiene establecidas restricciones a la fabricación, la comercialización o el uso en los términos especificados en el "Reglamento (CE) nº 1907/2006 sobre Registro, Evaluación, Autorización y Restricción de sustancias y preparados químicos" (REACH) de 18 de diciembre de 2006 (DOUE L 369 de 30 de diciembre de 2006). Las restricciones de una sustancia pueden aplicarse a todos los usos o sólo a usos concretos. El anexo XVII del Reglamento REACH contiene la lista de todas las sustancias restringidas y especifica los usos que se han restringido), Vía dérmica (Indica que, en las exposiciones a esta sustancia, la aportación por la vía cutánea puede resultar significativa para el contenido corporal total si no se adoptan medidas para prevenir la absorción. En estas situaciones, es aconsejable la utilización del control biológico para poder cuantificar la cantidad global absorbida del contaminante. Para más información véase el Apartado 5 de este documento), VLI (Agente químico para el que la U.E. estableció en su día un valor límite indicativo. Todos estos agentes químicos figuran al menos en una de las directivas de valores límite indicativos publicadas hasta ahora (ver Anexo C. Bibliografía). Los estados miembros disponen de un tiempo fijado en dichas directivas para su transposición a los valores límites de cada país miembro. Una vez adoptados, estos valores tienen la misma validez que el resto de los valores adoptados por el país).
Sweden	Local name	Kloroform
Sweden	nivågränsvärde (NVG) (mg/m <sup>3</sup> )	10 mg/m <sup>3</sup>
Sweden	nivågränsvärde (NVG) (ppm)	2 ppm
Sweden	kortidsvärde (KTV) (mg/m <sup>3</sup> )	25 mg/m <sup>3</sup>
Sweden	kortidsvärde (KTV) (ppm)	5 ppm
Sweden	Anmärkning (SE)	C (Ämnet är cancerframkallande Risk för cancer finns även vid annan exponering än via inandning. För vissa cancerframkallande ämnen som inte har gränsvärden gäller förbud eller tillståndskrav enligt föreskrifterna om kemiska arbetsmiljörisker); H (Ämnet kan lätt upptas genom huden Det föreskrivna gränsvärdet bedöms ge tillräckligt skydd endast under förutsättning att huden är skyddad mot exponering för ämnet ifråga); V (Vägledande kortidsgränsvärde ska användas som ett rekommenderat högsta värde som inte bör överskridas)
United Kingdom	Local name	Chloroform
United Kingdom	WEL TWA (mg/m <sup>3</sup> )	9.9 mg/m <sup>3</sup> Chloroform; United Kingdom; Time-weighted average exposure limit 8 h; Workplace exposure limit (EH40/2005)
United Kingdom	WEL TWA (ppm)	2 ppm Chloroform; United Kingdom; Time-weighted average exposure limit 8 h; Workplace exposure limit (EH40/2005)
United Kingdom	Remark (WEL)	Sk (Can be absorbed through the skin. The assigned substances are those for which there are concerns that dermal absorption will lead to systemic toxicity)
Russian Federation	Local name	Трихлорметан+
Russian Federation	OEL Ceiling (mg/m <sup>3</sup> )	10 mg/m <sup>3</sup>
Russian Federation	OEL TWA (mg/m <sup>3</sup> )	5 mg/m <sup>3</sup>
Russian Federation	Remark (RU)	2 класс опасности - высокоопасное; п (пары и/или газы); + (соединения, при работе с которыми требуется специальная защита кожи и глаз; символ проставлен вслед за наименованием вещества)
Norway	Local name	Triklormetan (Kloroform)

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Norway	Grenseverdier (AN) (mg/m <sup>3</sup> )	10 mg/m <sup>3</sup>
Norway	Grenseverdier (AN) (ppm)	2 ppm
Norway	Merknader (NO)	H (Kjemikalier som kan tas opp gjennom huden); K (Kjemikalier som skal betraktes som kreftfremkallende); R (Kjemikalier som skal betraktes som reproduksjonstoksiske); E (EU har en veiledende grenseverdi for stoffet)
Switzerland	Local name	Chloroform (s. Trichlormethan)
Switzerland	VME (mg/m <sup>3</sup> )	2.5 mg/m <sup>3</sup> 2.5 mg/m <sup>3</sup>
Switzerland	VME (ppm)	0.5 ppm 0.5 ppm
Switzerland	VLE (mg/m <sup>3</sup> )	5 mg/m <sup>3</sup> 5 mg/m <sup>3</sup>
Switzerland	VLE (ppm)	1 ppm 1 ppm
Switzerland	Remark (CH)	H C2 M2 R2 <sub>D</sub> SS <sub>C</sub> - Leber, Niere, OAW - DFG, HSE, NIOSH, OSHA
Turkey	Local name	Kloroform
Turkey	OEL TWA (mg/m <sup>3</sup> )	10 mg/m <sup>3</sup>
Turkey	OEL TWA (ppm)	2 ppm
Turkey	Comments	Deri
Australia	Local name	Chloroform
Australia	TWA (mg/m <sup>3</sup> )	10 mg/m <sup>3</sup> Synonym (Trichloromethane)
Australia	TWA (ppm)	2 ppm Synonym (Trichloromethane)
Australia	Remark (AU)	Carcinogenicity Category 2 – Suspected human carcinogen. The classification of a chemical into this category is on the basis of evidence from human and animal studies, where the evidence is not sufficiently convincing to place the chemical into Category 1 or from limited evidence of carcinogenicity in human or animal studies; Sk - Absorption through the skin may be a significant source of exposure.
USA - ACGIH	Local name	Chloroform
USA - ACGIH	ACGIH TWA (ppm)	10 ppm (Chloroform; USA; Time-weighted average exposure limit 8 h; TLV - Adopted Value)
USA - ACGIH	Remark (ACGIH)	Liver dam; embryo/fetal dam
USA - OSHA	Local name	Chloroform (Trichloromethane)
USA - OSHA	OSHA PEL (Ceiling) (mg/m <sup>3</sup> )	240 mg/m <sup>3</sup>
USA - OSHA	OSHA PEL (Ceiling) (ppm)	50 ppm

## 8.2. Exposure controls

### Materials for protective clothing:

GIVE EXCELLENT RESISTANCE: PVA. viton. GIVE GOOD RESISTANCE: No data available. GIVE LESS RESISTANCE: chlorinated polyethylene. neoprene. nitrile rubber. polyethylene. neoprene/natural rubber. nitrile rubber/PVC. GIVE POOR RESISTANCE: butyl rubber. natural rubber. PVC. styrene-butadiene rubber. neoprene/SBR

### Hand protection:

Gloves

### Eye protection:

Safety glasses

### Skin and body protection:

Head/neck protection. Protective clothing

### Respiratory protection:

Gas mask with filter type AX at conc. in air > exposure limit. High vapour/gas concentration: self-contained respirator



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Device	Filter type	Condition	Standard
Gas mask	Type AX - Low-boiling (<65 °C) organic compounds	If conc. in air > exposure limit	



### SECTION 9: Physical and chemical properties

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

Physical state	: Liquid
Appearance	: Liquid.
Molecular mass	: 119.38 g/mol
Colour	: Colourless.
Odour	: Sweet odour. Ether-like odour.
Odour threshold	: 133 - 276 ppm 648 - 1344 mg/m <sup>3</sup>
pH	: No data available
Relative evaporation rate (butylacetate=1)	: 11.6
Relative evaporation rate (ether=1)	: 1.9
Melting point	: -63 °C
Freezing point	: No data available
Boiling point	: 61 °C
Flash point	: No data available
Critical temperature	: 263 °C
Auto-ignition temperature	: > 600 °C (1013 hPa)
Decomposition temperature	: No data available
Flammability (solid, gas)	: No data available
Vapour pressure	: 211 hPa (20 °C)
Critical pressure	: 54702 hPa
Relative vapour density at 20 °C	: 4.1
Relative density	: 1.47 (20 °C)
Density	: 1470 kg/m <sup>3</sup> (20 °C)
Solubility	: Poorly soluble in water. Substance sinks in water. Soluble in ethanol. Soluble in ether. Soluble in acetone. Soluble in oil. Soluble in carbondisulfide. Soluble in petroleum spirit. Soluble in naphtha. Soluble in tetrachloromethane. Water: 0.8 g/100ml (23 °C, poorly soluble) Ethanol: soluble Ether: soluble Acetone: soluble
Log Pow	: 1.97 (Experimental value; 20 °C)
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available
Explosive properties	: No data available
Oxidising properties	: No data available
Explosive limits	: No data available

#### 9.2. Other information

Specific conductivity	: < 10000 pS/m
Saturation concentration	: 1045 g/m <sup>3</sup>
VOC content	: 100 %
Other properties	: Gas/vapour heavier than air at 20°C. Clear. Volatile. No data available. May generate electrostatic charges.

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### SECTION 10: Stability and reactivity

#### 10.1. Reactivity

Violent to explosive reaction with many compounds: release of heat. Decomposes slowly on exposure to light and on exposure to air: release of toxic and corrosive gases/vapours (phosgene, chlorine, hydrogen chloride). Reacts with (strong) oxidizers: release of toxic and corrosive gases/vapours (phosgene, chlorine).

#### 10.2. Chemical stability

Unstable on exposure to light. Unstable on exposure to air.

#### 10.3. Possibility of hazardous reactions

No additional information available

#### 10.4. Conditions to avoid

No additional information available

#### 10.5. Incompatible materials

No additional information available

#### 10.6. Hazardous decomposition products

No additional information available

### SECTION 11: Toxicological information

#### 11.1. Information on toxicological effects

Acute toxicity : Inhalation: Toxic if inhaled. Oral: Harmful if swallowed.

Chloroform (67-66-3)	
LD50 oral rat	695 mg/kg (Rat; OECD 401: Acute Oral Toxicity; Experimental value; 908 mg/kg bodyweight; Rat; OECD 401: Acute Oral Toxicity; Experimental value; 1117 mg/kg bodyweight; Rat)
LD50 dermal rabbit	> 20000 mg/kg (Rabbit; No reliable data available; >3980 mg/kg bodyweight; Rabbit)
LC50 inhalation rat (mg/l)	48 mg/l/4h (Rat; Literature study)

Skin corrosion/irritation	: Causes skin irritation.
Serious eye damage/irritation	: Causes serious eye irritation.
Respiratory or skin sensitisation	: Not classified
Germ cell mutagenicity	: Not classified
Carcinogenicity	: Suspected of causing cancer.
Reproductive toxicity	: Suspected of damaging the unborn child.
STOT-single exposure	: Not classified
STOT-repeated exposure	: Causes damage to organs through prolonged or repeated exposure.
Aspiration hazard	: Not classified
IARC group	: 2B

### SECTION 12: Ecological information

#### 12.1. Toxicity

Ecology - general	: Not classified as dangerous for the environment according to the criteria of Regulation (EC) No 1272/2008.
Ecology - air	: Not classified as dangerous for the ozone layer (Regulation (EC) No 1005/2009). Not included in the list of fluorinated greenhouse gases (Regulation (EC) No 842/2006). TA-Luft Klasse 5.2.5/l.
Ecology - water	: Ground water pollutant. Harmful to fishes. Harmful to invertebrates (Daphnia). Harmful to algae.

Chloroform (67-66-3)	
LC50 fish 1	18.2 ppm (LC50; ASTM; 96 h; Oncorhynchus mykiss; Flow-through system; Fresh water; Experimental value)
EC50 Daphnia 2	152.5 mg/l (EC50; US EPA; 48 h; Daphnia magna; Static system; Salt water; Experimental value)

#### 12.2. Persistence and degradability

Chloroform (67-66-3)	
Persistence and degradability	Not readily biodegradable in water. Non degradable in the soil. Low potential for adsorption in soil.
ThOD	0.33 - 1.35 g O <sub>2</sub> /g substance

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<b>Chloroform (67-66-3)</b>	
BOD (% of ThOD)	0.015 - 0.06

### 12.3. Bioaccumulative potential

<b>Chloroform (67-66-3)</b>	
BCF fish 2	1.4 - 4.7 (BCF; OECD 305: Bioconcentration: Flow-Through Fish Test; 42 days; Cyprinus carpio; Flow-through system; Fresh water; Experimental value)
Log Pow	1.97 (Experimental value; 20 °C)
Bioaccumulative potential	Low potential for bioaccumulation (BCF < 500).

### 12.4. Mobility in soil

<b>Chloroform (67-66-3)</b>	
Surface tension	0.0271 N/m (20 °C)
Log Koc	Koc, Other; 86.7-367; Experimental value; log Koc; Other; 1.94-2.56; Experimental value
Ecology - soil	May be harmful to plant growth, blooming and fruit formation.

### 12.5. Results of PBT and vPvB assessment

No additional information available

### 12.6. Other adverse effects

No additional information available

## SECTION 13: Disposal considerations

### 13.1. Waste treatment methods

Product/Packaging disposal recommendations : Remove waste in accordance with local and/or national regulations. Hazardous waste shall not be mixed together with other waste. Different types of hazardous waste shall not be mixed together if this may entail a risk of pollution or create problems for the further management of the waste. Hazardous waste shall be managed responsibly. All entities that store, transport or handle hazardous waste shall take the necessary measures to prevent risks of pollution or damage to people or animals. Recycle by distillation. Dissolve or mix with a combustible solvent. Remove to an incinerator for chlorinated waste materials with energy recovery. Do not discharge into drains or the environment. Do not discharge into surface water (Directive 2000/60/EC, Council Decision 2455/2001/EC).

Additional information : LWCA (the Netherlands): KGA category 04. Hazardous waste according to Directive 2008/98/EC.

European List of Waste (LoW) code : 07 01 03\* - organic halogenated solvents, washing liquids and mother liquors

## SECTION 14: Transport information

In accordance with ADR / RID / IMDG / IATA / ADN

ADR	IMDG	IATA	ADN	RID
<b>14.1. UN number</b>				
1888	1888	1888	1888	1888
<b>14.2. UN proper shipping name</b>				
CHLOROFORM	CHLOROFORM	Chloroform	CHLOROFORM	CHLOROFORM
<b>Transport document description</b>				
UN 1888 CHLOROFORM, 6.1, III, (E)	UN 1888 CHLOROFORM, 6.1, III	UN 1888 Chloroform, 6.1, III	UN 1888 CHLOROFORM, 6.1, III	UN 1888 CHLOROFORM, 6.1, III
<b>14.3. Transport hazard class(es)</b>				
6.1	6.1	6.1	6.1	6.1
<b>14.4. Packing group</b>				
III	III	III	III	III
<b>14.5. Environmental hazards</b>				
Dangerous for the environment : No	Dangerous for the environment : No Marine pollutant : No	Dangerous for the environment : No	Dangerous for the environment : No	Dangerous for the environment : No
No supplementary information available				

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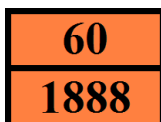
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### 14.6. Special precautions for user

#### - Overland transport

Classification code (ADR)	: T1
Limited quantities (ADR)	: 5I
Excepted quantities (ADR)	: E1
Packing instructions (ADR)	: P001, IBC03, LP01, R001
Mixed packing provisions (ADR)	: MP19
Portable tank and bulk container instructions (ADR)	: T7
Portable tank and bulk container special provisions (ADR)	: TP2
Tank code (ADR)	: L4BH
Tank special provisions (ADR)	: TU15, TE19
Vehicle for tank carriage	: AT
Transport category (ADR)	: 2
Special provisions for carriage - Packages (ADR)	: V12
Special provisions for carriage - Loading, unloading and handling (ADR)	: CV13, CV28
Special provisions for carriage - Operation (ADR)	: S9
Hazard identification number (Kemler No.)	: 60
Orange plates	:



Tunnel restriction code (ADR)	: E
EAC code	: 2Z

#### - Transport by sea

Transport regulations (IMDG)	: Subject
Limited quantities (IMDG)	: 5 L
Excepted quantities (IMDG)	: E1
Packing instructions (IMDG)	: P001, LP01
IBC packing instructions (IMDG)	: IBC03
Tank instructions (IMDG)	: T7
Tank special provisions (IMDG)	: TP2
EmS-No. (Fire)	: F-A
EmS-No. (Spillage)	: S-A
Stowage category (IMDG)	: A
Stowage and handling (IMDG)	: SW2
Properties and observations (IMDG)	: Colourless, volatile liquid. Boiling point: 61°C. Non-flammable. When involved in a fire, evolves extremely toxic fumes (phosgene). Toxic if swallowed, by skin contact or by inhalation. Anaesthetic.
MFAG-No	: 151

#### - Air transport

Transport regulations (IATA)	: Subject to the provisions
PCA Excepted quantities (IATA)	: E1
PCA Limited quantities (IATA)	: Y680
PCA limited quantity max net quantity (IATA)	: 2L
PCA packing instructions (IATA)	: 680
PCA max net quantity (IATA)	: 60L
CAO packing instructions (IATA)	: 680
CAO max net quantity (IATA)	: 220L
ERG code (IATA)	: 6A

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### - Inland waterway transport

Classification code (ADN)	: T1
Special provisions (ADN)	: 802
Limited quantities (ADN)	: 5 L
Excepted quantities (ADN)	: E1
Carriage permitted (ADN)	: T
Equipment required (ADN)	: PP, EP, TOX, A
Ventilation (ADN)	: VE02
Number of blue cones/lights (ADN)	: 0

### - Rail transport

Transport regulations (RID)	: Subject
Classification code (RID)	: T1
Limited quantities (RID)	: 5L
Excepted quantities (RID)	: E1
Packing instructions (RID)	: P001, IBC03, LP01, R001
Mixed packing provisions (RID)	: MP19
Portable tank and bulk container instructions (RID)	: T7
Portable tank and bulk container special provisions (RID)	: TP2
Tank codes for RID tanks (RID)	: L4BH
Special provisions for RID tanks (RID)	: TU15
Transport category (RID)	: 2
Special provisions for carriage – Packages (RID)	: W12
Special provisions for carriage - Loading, unloading and handling (RID)	: CW13, CW28, CW31
Colis express (express parcels) (RID)	: CE8
Hazard identification number (RID)	: 60

### 14.7. Transport in bulk according to Annex II of Marpol and the IBC Code

Not applicable

## SECTION 15: Regulatory information

### 15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

#### 15.1.1. EU-Regulations

No REACH Annex XVII restrictions

Chloroform is not on the REACH Candidate List

Chloroform is not on the REACH Annex XIV List

VOC content : 100 %

#### 15.1.2. National regulations

##### Germany

VwVwS Annex reference : Water hazard class (WGK) 3, severe hazard to waters (Classification according to VwVwS, Annex 1 or 2; ID No. 54)

WGK remark : Classification water polluting in compliance with Verwaltungsvorschrift wassergefährdender Stoffe (VwVwS) of 27 July 2005 (Anhang 2)

12th Ordinance Implementing the Federal Immission Control Act - 12.BImSchV : Is not subject of the 12. BImSchV (Hazardous Incident Ordinance)

##### Netherlands

Waterbevaarlijkheid : 1 - Black list substance

SZW-lijst van kankerverwekkende stoffen : The substance is not listed

SZW-lijst van mutagene stoffen : The substance is not listed

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NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Borstvoeding : The substance is not listed

NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Vruchtbaarheid : The substance is not listed

NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Ontwikkeling : Chloroform is listed

### Denmark

Recommendations Danish Regulation : Young people below the age of 18 years are not allowed to use the product  
Pregnant/breastfeeding women working with the product must not be in direct contact with the product

The requirements from the Danish Working Environment Authorities regarding work with carcinogens must be followed during use and disposal

### 15.2. Chemical safety assessment

No additional information available

## SECTION 16: Other information

Abbreviations and acronyms:

ADN	European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways
ADR	European Agreement concerning the International Carriage of Dangerous Goods by Road
ATE	Acute Toxicity Estimate
BCF	Bioconcentration factor
CLP	Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008
EC50	Median effective concentration
IATA	International Air Transport Association
IMDG	International Maritime Dangerous Goods
LC50	Median lethal concentration
LD50	Median lethal dose
REACH	Registration, Evaluation, Authorisation and Restriction of Chemicals Regulation (EC) No 1907/2006
RID	Regulations concerning the International Carriage of Dangerous Goods by Rail

Data sources : REGULATION (EC) No 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006.

Full text of H- and EUH-statements:

Acute Tox. 3 (Inhalation)	Acute toxicity (inhal.), Category 3
Acute Tox. 4 (Oral)	Acute toxicity (oral), Category 4
Carc. 2	Carcinogenicity, Category 2
Eye Irrit. 2	Serious eye damage/eye irritation, Category 2
Repr. 2	Reproductive toxicity, Category 2
Skin Irrit. 2	Skin corrosion/irritation, Category 2
STOT RE 1	Specific target organ toxicity — Repeated exposure, Category 1
H302	Harmful if swallowed
H315	Causes skin irritation
H319	Causes serious eye irritation
H331	Toxic if inhaled
H351	Suspected of causing cancer
H361d	Suspected of damaging the unborn child
H372	Causes damage to organs through prolonged or repeated exposure

SDS ISOLAB

*This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product*