

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

Page 1/10

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Revision: 21.03.2023

Version number 3.01 (replaces version 3.00)

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

- **1.1 Product identifier**
- **Trade name:** Acetic Acid/Chloroform 3:2 - Mixture v/v
- **Article number:** 145365
- **Application of the substance / the mixture** Laboratory chemicals
- **1.3 Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**
 AppliChem GmbH
 Ottoweg 4
 D-64291 Darmstadt
- Tel.: +49 (0)6151 93570
 Fax.: +49 (0)6151 935711
 msds@applichem.com
- **Further information obtainable from:** Dept. Compliance
- **1.4 Emergency telephone number:** +49(0)6151 93570 (Mo-Th 08:00 - 17:00 h; Fr 08:00 - 14:30 h)

SECTION 2: Hazards identification

- **2.1 Classification of the substance or mixture**
- **Classification according to Regulation (EC) No 1272/2008**
 Acute Tox. 4 H302 Harmful if swallowed.
 Acute Tox. 4 H332 Harmful if inhaled.
 Skin Corr. 1A H314 Causes severe skin burns and eye damage.
 Eye Dam. 1 H318 Causes serious eye damage.
 Carc. 2 H351 Suspected of causing cancer.
 Repr. 2 H361d Suspected of damaging the unborn child.
 STOT RE 1 H372 Causes damage to the central nervous system, the kidneys, the liver and the respiratory system through prolonged or repeated exposure.

- **2.2 Label elements**
- **Labelling according to Regulation (EC) No 1272/2008**
 The product is classified and labelled according to the GB CLP regulation.
- **Hazard pictograms**



GHS05 GHS07 GHS08

- **Signal word** Danger
- **Hazard-determining components of labelling:**
 trichloromethane
 Acetic acid

(Contd. on page 2)

Trade name: Acetic Acid/Chloroform 3:2 - Mixture v/v

(Contd. of page 1)

· **Hazard statements**

- H302+H332 Harmful if swallowed or if inhaled.
H314 Causes severe skin burns and eye damage.
H351 Suspected of causing cancer.
H361d Suspected of damaging the unborn child.
H372 Causes damage to the central nervous system, the kidneys, the liver and the respiratory system through prolonged or repeated exposure.

· **Precautionary statements**

- P280 Wear protective gloves/protective clothing/eye protection/face protection/hearing protection.
P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or 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).
P405 Store locked up.
P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

· **Additional information:**

For use in industrial installations only.

· **2.3 Other hazards**

· **Results of PBT and vPvB assessment**

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

SECTION 3: Composition/information on ingredients

· **3.2 Mixtures**

- **Description:** Mixture: consisting of the following components.

· **Dangerous components:**

CAS: 64-19-7 EINECS: 200-580-7 Reg.nr.: 01-2119475328-30-XXXX	Acetic acid Flam. Liq. 3, H226; Skin Corr. 1A, H314 Specific concentration limits: Skin Corr. 1A; H314: C ≥ 90 % Skin Corr. 1B; H314: 25 % ≤ C < 90 % Skin Irrit. 2; H315: 10 % ≤ C < 25 % Eye Irrit. 2; H319: 10 % ≤ C < 25 %	>50-<90%
CAS: 67-66-3 EINECS: 200-663-8 Reg.nr.: 01-2119486657-20-XXXX	trichloromethane Acute Tox. 3, H331; Carc. 2, H351; Repr. 2, H361d; STOT RE 1, H372; Acute Tox. 4, H302; Skin Irrit. 2, H315; Eye Irrit. 2, H319	>40-≤50%

- **Additional information:** For the wording of the listed hazard phrases refer to section 16.

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.
Involve doctor immediately.

· **After inhalation:**

If breathing stops: mouth-to-mouth respiration or mechanical ventilation, oxygen mask if necessary.
Immediately call a physician.
Supply fresh air or oxygen; call for doctor.
In case of unconsciousness place patient stably in side position for transportation.

(Contd. on page 3)

Trade name: Acetic Acid/Chloroform 3:2 - Mixture v/v

(Contd. of page 2)

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

If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel.

· **After skin contact:**

Call a doctor immediately.

Seek immediate medical advice.

Immediately wash with water and soap and rinse thoroughly.

Immediately remove any clothing soiled by the product.

· **After eye contact:** Rinse opened eye for several minutes under running water. Then consult a doctor.

· **After swallowing:**

make victim drink water (maximum of 2 drinking glasses)

Call 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:**

CO₂, powder or water spray. Fight larger fires with water spray or alcohol resistant foam.

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

In case of fire, the following can be released:

Carbon monoxide and carbon dioxide

Ethanoic acid

Non-combustible.

· **5.3 Advice for firefighters**

· **Protective equipment:**

Mouth respiratory protective device.

Wear self-contained respiratory protective device.

· **Additional information**

Dispose of fire debris and contaminated fire fighting water in accordance with official regulations.

Contain escaping vapours with water.

SECTION 6: Accidental release measures

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

Wear protective equipment. Keep unprotected persons away.

Avoid substance contact.

Do not inhale steams/aerosols.

· **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).

Use neutralising agent.

Dispose contaminated material as waste according to item 13.

Ensure adequate ventilation.

Clean up affected area.

· **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.

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(Contd. on page 4)

Trade name: Acetic Acid/Chloroform 3:2 - Mixture v/v

(Contd. of page 3)

SECTION 7: Handling and storage

- **7.1 Precautions for safe handling**
Ensure good ventilation/exhaustion at the workplace.
Prevent formation of aerosols.
- **Information about fire - and explosion protection:** The product is not flammable.
- **7.2 Conditions for safe storage, including any incompatibilities**
- **Storage:**
- **Requirements to be met by storerooms and receptacles:** Provide acid-resistant floor.
- **Information about storage in one common storage facility:** Not required.
- **Further information about storage conditions:**
Keep container tightly sealed.
Open receptacle only under localised extractor facilities.
Store receptacle in a well ventilated area.
Store under lock and key and with access restricted to technical experts or their assistants only.
- **Recommended storage temperature:** Room Temperature
- **Storage class:** 6.1 D
- **7.3 Specific end use(s)** No further relevant information available.

SECTION 8: Exposure controls/personal protection

- **8.1 Control parameters**

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

64-19-7 Acetic acid

WEL Short-term value: 50 mg/m³, 20 ppm
Long-term value: 25 mg/m³, 10 ppm

67-66-3 trichloromethane

WEL Long-term value: 9.9 mg/m³, 2 ppm
Sk

- **DNELs**

64-19-7 Acetic acid

Dermal	Acute - local effects, worker	25 mg/kg
Inhalative	Long-term - local effects, worker	25 mg/m ³
	Acute - local effects, general population	25 mg/m ³
	Long-term - local effects, general population	25 mg/m ³

67-66-3 trichloromethane

Dermal	Long-term - systemic effects, worker	0.94 mg/kg
Inhalative	Acute - systemic effects, worker	333 mg/m ³
	Long-term - systemic effects, worker	2.5 mg/m ³
	Long-term - local effects, worker	2.5 mg/m ³
	Long-term - systemic effects, general population	0.18 mg/m ³

- **PNECs**

64-19-7 Acetic acid

Aquatic compartment - freshwater	3.058 mg/L
Aquatic compartment - marine water	0.306 mg/L
Aquatic compartment - water, intermittent releases	30.58 mg/L
Aquatic compartment - sediment in freshwater	11.36 mg/kg
Aquatic compartment - sediment in marine water	1.136 mg/kg
Sewage treatment plant	85 mg/L
Ground	0.47 mg/kg

(Contd. on page 5)

Trade name: Acetic Acid/Chloroform 3:2 - Mixture v/v

(Contd. of page 4)

67-66-3 trichloromethane

Aquatic compartment - freshwater	0.146 mg/L
Aquatic compartment - marine water	0.015 mg/L
Aquatic compartment - water, intermittent releases	0.133 mg/L
Aquatic compartment - sediment in freshwater	0.45 mg/kg
Aquatic compartment - sediment in marine water	0.09 mg/kg
Terrestrial compartment - soil	0.56 mg/kg
Sewage treatment plant	0.048 mg/L

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

· **8.2 Exposure controls**

· **Appropriate engineering controls** No further data; see item 7.

· **Individual protection measures, such as 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.
Use suitable respiratory protective device only when aerosol or mist is formed.

· **Recommended filter device for short term use:** Combination filter E-P2

· **Hand protection**



Protective gloves

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

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

· **Material of gloves**

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

· **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.

· **For the permanent contact gloves made of the following materials are suitable:**

Butyl rubber, BR
Recommended thickness of the material: ≥ 0.7 mm
Value for the permeation: Level ≥ 480 min

· **As protection from splashes gloves made of the following materials are suitable:**

Natural rubber, NR
Recommended thickness of the material: ≥ 0.6 mm
Value for the permeation: Level ≥ 30 min

· **Eye/face protection**



Gauze goggles

· **Body protection:**

Use protective suit.

(Contd. on page 6)

Trade name: Acetic Acid/Chloroform 3:2 - Mixure v/v

Acid resistant protective clothing

(Contd. of page 5)

SECTION 9: Physical and chemical properties

· 9.1 Information on basic physical and chemical properties

· General Information

· Physical state	Fluid
· Colour:	Colourless
· Odour:	Characteristic
· Odour threshold:	Not determined.
· Melting point/freezing point:	Undetermined.
· Boiling point or initial boiling point and boiling range	Undetermined.
· Flammability	Not applicable.
· Lower and upper explosion limit	
· Lower:	4 Vol %
· Upper:	16 Vol %
· Flash point:	Not applicable.
· Auto-ignition temperature:	463 °C
· Decomposition temperature:	Not determined.
· pH at 20 °C	<1
· Viscosity:	
· Kinematic viscosity	Not determined.
· Dynamic:	Not determined.
· Solubility	
· water:	Not miscible or difficult to mix.
· Partition coefficient n-octanol/water (log value)	Not determined.
· Vapour pressure at 20 °C:	211 hPa
· Density and/or relative density	
· Density at 20 °C:	1.21 g/cm ³
· Relative density	Not determined.
· Vapour density	Not determined.

· 9.2 Other information

· Appearance:	
· Form:	Fluid
· Important information on protection of health and environment, and on safety.	
· Ignition temperature:	Product is not selfigniting.
· Explosive properties:	Product does not present an explosion hazard.
· Solvent content:	
· Organic solvents:	51.6 %
· VOC (EC)	51.55 %
· Change in condition	
· Evaporation rate	Not determined.

· Information with regard to physical hazard classes

· Explosives	Void
· Flammable gases	Void
· Aerosols	Void
· Oxidising gases	Void
· Gases under pressure	Void
· Flammable liquids	Void
· Flammable solids	Void
· Self-reactive substances and mixtures	Void
· Pyrophoric liquids	Void

(Contd. on page 7)

Trade name: Acetic Acid/Chloroform 3:2 - Mixure v/v

(Contd. of page 6)

- | | |
|---|------|
| · Pyrophoric solids | Void |
| · Self-heating substances and mixtures | Void |
| · Substances and mixtures, which emit flammable gases in contact with water | Void |
| · Oxidising liquids | Void |
| · Oxidising solids | Void |
| · Organic peroxides | Void |
| · Corrosive to metals | Void |
| · Desensitised explosives | Void |

SECTION 10: Stability and reactivity

- **10.1 Reactivity** No further relevant information available.
- **10.2 Chemical stability**
- **Thermal decomposition / conditions to be avoided:** Heating.
- **10.3 Possibility of hazardous reactions** No dangerous reactions known.
- **10.4 Conditions to avoid** No further relevant information available.
- **10.5 Incompatible materials:**
 - oxidizing agent
 - alkali metals
 - alkaline earth metals
- **10.6 Hazardous decomposition products:** In the event of fire: See chapter 5

SECTION 11: Toxicological information

- **11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008**
- **Acute toxicity** Harmful if swallowed or if inhaled.
- **LD/LC50 values relevant for classification:**
Quantitative data on the toxicological effect of this product are not available.

· Components	Type	Value	Species
ATE (Acute Toxicity Estimates)			
Oral	LD50	1,874 mg/kg (rat)	
Inhalative	LC50/4 h	18.9 mg/l (rat)	

64-19-7 Acetic acid

Oral	LD50	3,310 mg/kg (rat)
Inhalative	LC50/4 h	5,620 mg/l (mouse)

67-66-3 trichloromethane

Oral	LD50	908 mg/kg (rat)
Dermal	LD50	3,980 mg/kg (rabbit)
Inhalative	LC50/4 h	9.17 mg/l (rat)

- **Skin corrosion/irritation** Causes severe skin burns and eye damage.
- **Serious eye damage/irritation** Causes serious eye damage.
- **After inhalation:** Strong caustic effect on skin and mucous membranes.
- **Carcinogenicity** Suspected of causing cancer.
- **Reproductive toxicity** Suspected of damaging the unborn child.
- **STOT-repeated exposure**
Causes damage to the central nervous system, the kidneys, the liver and the respiratory system through prolonged or repeated exposure.

(Contd. on page 8)

Trade name: Acetic Acid/Chloroform 3:2 - Mixure v/v

(Contd. of page 7)

· **11.2 Information on other hazards**

· **Endocrine disrupting properties**

None of the ingredients is listed.

SECTION 12: Ecological information

· **12.1 Toxicity**

· **Aquatic toxicity:** No further relevant information available.

Type of test	Effective concentration	Method	Assessment
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64-19-7 Acetic acid

EC50/72 h	>300.8 mg/l (Algae)
EC50/24 h	>300.8 mg/l (daphnia magna) (OECD 202)
LC50/96 h	>300.8 mg/l (fish) (OECD 203)
NOEC/72 h	>300.8 mg/l (Algae)

67-66-3 trichloromethane

EC50/72 h	13.3 mg/l (Algae)
EC50/48 h	152.5 mg/l (daphnia magna)
LC50/48 h	29 mg/l (daphnia magna)
LC50/96 h	18 mg/l (fish)

· **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.

· **12.5 Results of PBT and vPvB assessment**

· **PBT:** Not applicable.

· **vPvB:** Not applicable.

· **12.6 Endocrine disrupting properties**

The product does not contain substances with endocrine disrupting properties.

· **12.7 Other adverse effects**

· **Additional ecological information:**

· **General notes:**

Water hazard class 3 (German Regulation) (Self-assessment): extremely hazardous for water

Do not allow product to reach ground water, water course or sewage system, even in small quantities.

Must not reach sewage water or drainage ditch undiluted or unneutralised.

Danger to drinking water if even extremely small quantities leak into the ground.

Rinse off of bigger amounts into drains or the aquatic environment may lead to decreased pH-values.

A low pH-value harms aquatic organisms. In the dilution of the use-level the pH-value is considerably increased, so that after the use of the product the aqueous waste, emptied into drains, is only low water-dangerous.

SECTION 13: Disposal considerations

· **13.1 Waste treatment methods**

· **Recommendation**

Chemicals must be disposed of in compliance with the respective national regulations.

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.

Packagings that may not be cleansed are to be disposed of in the same manner as the product.

GB

(Contd. on page 9)

Trade name: Acetic Acid/Chloroform 3:2 - Mixure v/v

(Contd. of page 8)

SECTION 14: Transport information

· 14.1 UN number or ID number	UN3265
· ADR, IMDG, IATA	
· 14.2 UN proper shipping name	CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S.
· ADR, IMDG, IATA	(ACETIC ACID, GLACIAL)
· 14.3 Transport hazard class(es)	
· ADR	
	
· Class	8 (C3) Corrosive substances.
· Label	8
· IMDG, IATA	
	
· Class	8 Corrosive substances.
· Label	8
· 14.4 Packing group	
· ADR, IMDG, IATA	II
· 14.5 Environmental hazards:	Not applicable.
· 14.6 Special precautions for user	Warning: Corrosive substances.
· Hazard identification number (Kemler code):	80
· EMS Number:	F-A,S-B
· Segregation groups	(SGG1) Acids
· Stowage Category	B
· Stowage Code	SW2 Clear of living quarters.
· Segregation Code	SG36 Stow "separated from" SGG18-alkalis. SG49 Stow "separated from" SGG6-cyanides
· 14.7 Maritime transport in bulk according to IMO instruments	Not applicable.
· Transport/Additional information:	
· ADR	
· Limited quantities (LQ)	1L
· Excepted quantities (EQ)	Code: E2 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 500 ml
· Transport category	2
· Tunnel restriction code	E
· IMDG	
· Limited quantities (LQ)	1L
· Excepted quantities (EQ)	Code: E2 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 500 ml

(Contd. on page 10)

GB

Trade name: Acetic Acid/Chloroform 3:2 - Mixure v/v

(Contd. of page 9)

· **UN "Model Regulation":** UN 3265 CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S. (ACETIC ACID, GLACIAL), 8, II

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** None of the ingredients is listed.
- **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.

- **Relevant phrases**
 - H226 Flammable liquid and vapour.
 - H302 Harmful if swallowed.
 - H314 Causes severe skin burns and eye damage.
 - 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.
- **Department issuing SDS:** Dept. Compliance
- **Abbreviations and acronyms:**
 - RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)
 - ICAO: International Civil Aviation Organisation
 - ADR: Accord relatif au transport international 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
 - ELINCS: European List of Notified Chemical Substances
 - CAS: Chemical Abstracts Service (division of the American Chemical Society)
 - VOC: Volatile Organic Compounds (USA, EU)
 - DNEL: Derived No-Effect Level (UK REACH)
 - PNEC: Predicted No-Effect Concentration (UK REACH)
 - LC50: Lethal concentration, 50 percent
 - LD50: Lethal dose, 50 percent
 - PBT: Persistent, Bioaccumulative and Toxic
 - vPvB: very Persistent and very Bioaccumulative
 - Flam. Liq. 3: Flammable liquids – Category 3
 - Acute Tox. 4: Acute toxicity – Category 4
 - Acute Tox. 3: Acute toxicity – Category 3
 - Skin Corr. 1A: Skin corrosion/irritation – Category 1A
 - Skin Irrit. 2: Skin corrosion/irritation – Category 2
 - Eye Dam. 1: Serious eye damage/eye irritation – Category 1
 - 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
- *** Data compared to the previous version altered.**