

**Safety Data Sheet**  
 acc. to OSHA HCS

Page 1/10

Printing date 01/05/2017

Reviewed on 12/29/2016

Version number: 2

## 1 Identification

- **Product identifier**
- **Trade name:** Acetic Acid/Chloroform 3:2 - Mixture v/v pure
- **Article number:** 145365
- **Application of the substance / the mixture** Laboratory chemical
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**  
 AppliChem GmbH  
 Ottoweg 4  
 D-64291 Darmstadt
- **Information department:** Dept. Compliance
- **Emergency telephone number:** +49(0)6151 93570 (Inside normal business hours)

Tel.: +49 (0)6151 93570  
 Fax.: +49 (0)6151 935711  
 msds@applichem.com

## 2 Hazard(s) identification

- **Classification of the substance or mixture**  
 Acute Tox. 4 H302 Harmful if swallowed.  
 Acute Tox. 3 H331 Toxic if inhaled.  
 Skin Corr. 1A H314 Causes severe skin burns and eye damage.  
 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.

### · Label elements

#### · GHS label elements

The product is classified and labeled according to the Globally Harmonized System (GHS).

#### · Hazard pictograms



GHS05 GHS06 GHS08

#### · Signal word Danger

#### · Hazard-determining components of labeling:

trichloromethane  
 acetic acid

#### · Hazard statements

H302 Harmful if swallowed.  
 H331 Toxic if inhaled.  
 H314 Causes severe skin burns and eye damage.  
 H351 Suspected of causing cancer.  
 H361 Suspected of damaging fertility or the unborn child.  
 H372 Causes damage to organs through prolonged or repeated exposure.

#### · Precautionary statements

P260 Do not breathe dust/fume/gas/mist/vapors/spray.  
 P303+P361+P353 If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.

(Contd. on page 2)

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

(Contd. of page 1)

P305+P351+P338 If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P313 Get medical advice/attention.

P301+P330+P331 If swallowed: Rinse mouth. Do NOT induce vomiting.

· **Classification system:**

· **NFPA ratings (scale 0 - 4)**



Health = 3

Fire = 0

Reactivity = 0

· **HMIS-ratings (scale 0 - 4)**



Health = \*3

Fire = 0

Reactivity = 0

· **Other hazards**

· **Results of PBT and vPvB assessment**

· **PBT:** Not applicable.

· **vPvB:** Not applicable.

### 3 Composition/information on ingredients

· **Chemical characterization: Mixtures**

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

· **Dangerous components:**

64-19-7	acetic acid	>50-<100%
67-66-3	trichloromethane	>30-≤40%

### 4 First-aid measures

· **Description of first aid measures**

· **General information:** Immediately remove any clothing soiled by the product.

· **After inhalation:**

If breathing stops: mouth-to-mouth respiration or mechanical ventilation, oxygen mask if necessary. Immediately call a physician.

· **After skin contact:**

Wash with polyethylene glycol 400 and then rinse with copious amounts of water.

Immediately remove any clothing soiled by the product.

Seek immediate medical advice.

· **After eye contact:**

Rinse opened eye for several minutes under running water.

Call a doctor immediately.

· **After swallowing:**

make victim drink water (maximum of 2 drinking glasses)

Call 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.

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(Contd. on page 3)

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

(Contd. of page 2)

## 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**  
Vapours are heavier than air and may spread along floors.  
Combustible.  
Development of hazardous combustion gases or vapours possible in the event of fire.  
In case of fire, the following can be released:  
Acetic acid vapours  
Hydrogen chloride (HCl)  
CO, CO<sub>2</sub>
- **Advice for firefighters**
- **Protective equipment:** 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.

## 6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures**  
Wear protective equipment. Keep unprotected persons away.  
Do not inhale steams/aerosols.  
Avoid substance contact.
- **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).  
Use neutralizing agent.  
Dispose contaminated material as waste according to item 13.  
Ensure adequate ventilation.  
Clean up affected area.  
Dispose of the collected material according to regulations.
- **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:

64-19-7	acetic acid	5 ppm
67-66-3	trichloromethane	2 ppm

### · PAC-2:

64-19-7	acetic acid	35 ppm
67-66-3	trichloromethane	64 ppm

### · PAC-3:

64-19-7	acetic acid	250 ppm
67-66-3	trichloromethane	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.

(Contd. on page 4)

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

(Contd. of page 3)

- **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.  
Open receptacle only under localized extractor facilities.  
Store under lock and key and with access restricted to technical experts or their assistants only.
- **Recommended storage temperature:** 15-25 °C
- **Storage class:** 8 B
- **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:**

### 64-19-7 acetic acid

PEL	Long-term value: 25 mg/m <sup>3</sup> , 10 ppm
REL	Short-term value: 37 mg/m <sup>3</sup> , 15 ppm
	Long-term value: 25 mg/m <sup>3</sup> , 10 ppm
TLV	Short-term value: 37 mg/m <sup>3</sup> , 15 ppm
	Long-term value: 25 mg/m <sup>3</sup> , 10 ppm

### 67-66-3 trichloromethane

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.  
Wash hands before breaks and at the end of work.  
Do not inhale gases / fumes / aerosols.  
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.  
Combination filter E-P2
- **Protection of hands:**



Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.  
Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

### · **Material of gloves**

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

(Contd. on page 5)

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

(Contd. of page 4)

· **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:**

Recommended thickness of the material:  $\geq 0.7$  mm

Butyl rubber, BR

Value for the permeation: Level  $\geq 480$  min

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

Recommended thickness of the material:  $\geq 0.6$  mm

Natural rubber, NR

Value for the permeation: Level  $\geq 30$  min

· **Eye protection:**



Tightly sealed goggles

· **Body protection:**

Use protective suit.

Protective clothing should be selected specifically for the working place, depending on concentration and quantity of the hazardous substances handled.

## 9 Physical and chemical properties

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

· **General Information**

· **Appearance:**

Form: Fluid

Color: Colorless

· **Odor:** Characteristic

· **Change in condition**

Melting point/Melting range: Undetermined.

Boiling point/Boiling range: Undetermined.

· **Flash point:** Not applicable.

· **Ignition temperature:** 463 °C (865 °F)

· **Auto igniting:** Product is not selfigniting.

· **Danger of explosion:** Product does not present an explosion hazard.

· **Explosion limits:**

Lower: 4.0 Vol %

Upper: 16.0 Vol %

· **Vapor pressure at 20 °C (68 °F):** 211 hPa (158 mm Hg)

· **Density:** Not determined.

· **Solubility in / Miscibility with**

Water: Not miscible or difficult to mix.

· **Viscosity:**

Dynamic: Not determined.

Kinematic: Not determined.

· **Solvent content:**

Organic solvents: 60.0 %

VOC content: 60.0 %

(Contd. on page 6)

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

(Contd. of page 5)

· **Other information** No further relevant information available.

## 10 Stability and reactivity

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

## 11 Toxicological information

- **Information on toxicological effects**
- **Acute toxicity:**
- **LD/LC50 values that are relevant for classification:**

Components	Type	Value	Species
<b>64-19-7 acetic acid</b>			
Oral	LD50	3310 mg/kg (rat)	
Dermal	LD50	1060 mg/kg (rabbit)	
<b>67-66-3 trichloromethane</b>			
Oral	LD50	695 mg/kg (rat)	
Dermal	LD50	3980 mg/kg (rabbit)	

- **Primary irritant effect:**
- **on the skin:** Caustic effect on skin and mucous membranes.
- **on the eye:** Strong caustic effect.
- **Sensitization:** No sensitizing effects known.
- **Additional toxicological information:**  
The product shows the following dangers according to internally approved calculation methods for preparations:  
Harmful  
Corrosive  
Swallowing will lead to a strong caustic effect on mouth and throat and to the danger of perforation of esophagus and stomach.
- **Carcinogenic categories**

· <b>IARC (International Agency for Research on Cancer)</b>		
67-66-3	trichloromethane	2B
· <b>NTP (National Toxicology Program)</b>		
67-66-3	trichloromethane	R
· <b>OSHA-Ca (Occupational Safety &amp; Health Administration)</b>		
None of the ingredients is listed.		

## 12 Ecological information

- **Toxicity**
- **Aquatic toxicity:** Quantitative data on the ecological effect of the product are not available.

(Contd. on page 7)

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

(Contd. of page 6)



Type of test	Effective concentration	Method	Assessment
<b>64-19-7 acetic acid</b>			
Inhalative	LC50/4 h	11.4 mg/l (rat)	
	EC50/24 h	47 mg/l (daphnia magna)	
	LC50/96 h	75 mg/l (fish)	
<b>67-66-3 trichloromethane</b>			
	EC50/48 h	79 mg/l (daphnia magna)	
	LC50/96 h	18 mg/l (fish)	

- **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:**  
Do not allow product to reach ground water, water course or sewage system, even in small quantities.  
Water hazard class 3 (Self-assessment): extremely hazardous for water  
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:**  
Chemicals must be disposed of in compliance with the respective national regulations.  
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.  
Packagings that cannot be cleansed are to be disposed of in the same manner as the product.

### 14 Transport information

- **UN-Number**
- **DOT, ADR, IMDG, IATA** UN2922
- **UN proper shipping name**
- **DOT, ADR** Corrosive liquids, toxic, n.o.s. (Acetic acid, glacial, Chloroform)
- **IMDG, IATA** CORROSIVE LIQUID, TOXIC, N.O.S. (ACETIC ACID, GLACIAL, CHLOROFORM)
- **Transport hazard class(es)**
- **DOT**
- 

- **Class** 8 Corrosive substances

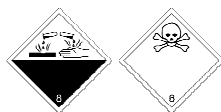
(Contd. on page 8)

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

(Contd. of page 7)

· **Label** 8, 6.1

· **ADR**



· **Class** 8 Corrosive substances

· **Label** 8+6.1

· **IMDG**



· **Class** 8 Corrosive substances

· **Label** 8/6.1

· **IATA**



· **Class** 8 Corrosive substances

· **Label** 8 (6.1)

· **Packing group**

· **DOT, ADR, IMDG, IATA** II

· **Environmental hazards:**

· **Marine pollutant:** No

· **Special precautions for user** Warning: Corrosive substances

· **EMS Number:** F-A,S-B

· **Segregation groups** Acids

· **Stowage Category** B

· **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:**

· **ADR**

· **Excepted quantities (EQ)** Code: E2  
Maximum net quantity per inner packaging: 30 ml  
Maximum net quantity per outer packaging: 500 ml

· **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

· **UN "Model Regulation":** UN 2922 CORROSIVE LIQUIDS, TOXIC, N.O.S. (ACETIC ACID, GLACIAL, CHLOROFORM), 8 (6.1), II

US

(Contd. on page 9)

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

(Contd. of page 8)

## 15 Regulatory information

- **Safety, health and environmental regulations/legislation specific for the substance or mixture**
- **Sara**

### · Section 355 (extremely hazardous substances):

67-66-3 trichloromethane

### · Section 313 (Specific toxic chemical listings):

67-66-3 trichloromethane

### · TSCA (Toxic Substances Control Act):

All ingredients are listed.

### · Proposition 65

#### · Chemicals known to cause cancer:

67-66-3 trichloromethane

#### · Chemicals known to cause reproductive toxicity for females:

None of the ingredients is listed.

#### · Chemicals known to cause reproductive toxicity for males:

None of the ingredients is listed.

#### · Chemicals known to cause developmental toxicity:

67-66-3 trichloromethane

### · Cancerogenity categories

#### · EPA (Environmental Protection Agency)

67-66-3 trichloromethane

B2, L, NL

#### · TLV (Threshold Limit Value established by ACGIH)

67-66-3 trichloromethane

A3

#### · NIOSH-Ca (National Institute for Occupational Safety and Health)

67-66-3 trichloromethane

### · GHS label elements

The product is classified and labeled according to the Globally Harmonized System (GHS).

### · Hazard pictograms



GHS05 GHS06 GHS08

### · Signal word Danger

### · Hazard-determining components of labeling:

trichloromethane

acetic acid

### · Hazard statements

H302 Harmful if swallowed.

H331 Toxic if inhaled.

H314 Causes severe skin burns and eye damage.

H351 Suspected of causing cancer.

H361 Suspected of damaging fertility or the unborn child.

H372 Causes damage to organs through prolonged or repeated exposure.

### · Precautionary statements

P260 Do not breathe dust/fume/gas/mist/vapors/spray.

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.

(Contd. on page 10)

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

(Contd. of page 9)

P313 Get medical advice/attention.

P301+P330+P331 If swallowed: Rinse mouth. Do NOT induce vomiting.

· **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.*

· **Department issuing SDS:** Dept. Compliance

· **Contact:** Mr. Th. Stöckle

· **Date of preparation / last revision** 01/05/2017 / 1

· **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 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

ELINCS: European List of Notified Chemical Substances

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

NFPA: National Fire Protection Association (USA)

HMIS: Hazardous Materials Identification System (USA)

VOC: Volatile Organic Compounds (USA, EU)

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

Acute Tox. 4: Acute toxicity – Category 4

Acute Tox. 3: Acute toxicity – Category 3

Skin Corr. 1A: Skin corrosion/irritation – Category 1A

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.**