

1 Identification

- **Product identifier**
- **Trade name:** Chloroform : Isoamyl alcohol 24 : 1
- **Article number:** A1935
- **Application of the substance / the mixture**
Laboratory chemical
Chemical for various applications
- **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 Irrit. 2 H315 Causes skin irritation.
Eye Irrit. 2A H319 Causes serious eye irritation.
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**



GHS06 GHS07 GHS08

- **Signal word** Danger
- **Hazard-determining components of labeling:**
trichloromethane
Isoamyl alcohol
- **Hazard statements**
H302 Harmful if swallowed.
H331 Toxic if inhaled.
H315 Causes skin irritation.
H319 Causes serious eye irritation.
H351 Suspected of causing cancer.
H361 Suspected of damaging fertility or the unborn child.
H372 Causes damage to organs through prolonged or repeated exposure.

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- **Precautionary statements**
 - P302+P352 If on skin: Wash with plenty of water.
 - P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
 - P311 Call a poison center/doctor.
 - P305+P351+P338 If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- **Classification system:**
- **NFPA ratings (scale 0 - 4)**



Health = 2

Fire = 0

Reactivity = 0
- **HMIS-ratings (scale 0 - 4)**

| | |
|------------|---|
| HEALTH | 2 |
| FIRE | 0 |
| REACTIVITY | 0 |

Health = 2

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 of the substances listed below with nonhazardous additions.

· **Dangerous components:**

| | | |
|----------|------------------|-----------|
| 67-66-3 | trichloromethane | >50-<100% |
| 123-51-3 | Isoamyl alcohol | >3-≤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.
 - Remove breathing apparatus only after contaminated clothing have been completely removed.
 - In case of irregular breathing or respiratory arrest provide artificial respiration.
 - 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.
 - 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.
 - Immediately remove any clothing soiled by the product.
 - 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:**
 - Risk of aspiration!
 - Subsequently administer:
 - activated charcoal (20 - 40 g in 10 % slurry)

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- 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.

5 Fire-fighting measures

- **Extinguishing media**
- **Suitable extinguishing agents:** Use fire fighting measures that suit the environment.
- **Special hazards arising from the substance or mixture**
In case of fire, the following can be released:
Hydrogen chloride (HCl)
Phosgene gas
CO, CO2
Non-combustible.
- **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.

6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures**
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).
Dispose contaminated material as waste according to item 13.
Ensure adequate ventilation.
Clean up affected area.
- **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: | | |
| 67-66-3 | trichloromethane | 2 ppm |
| 123-51-3 | Isoamyl alcohol | 125 ppm |
| • PAC-2: | | |
| 67-66-3 | trichloromethane | 64 ppm |
| 123-51-3 | Isoamyl alcohol | 1700* ppm |
| • PAC-3: | | |
| 67-66-3 | trichloromethane | 3,200 ppm |
| 123-51-3 | Isoamyl alcohol | 10000** ppm |

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7 Handling and storage

- **Handling:**
- **Precautions for safe handling**
Ensure good ventilation/exhaustion at the workplace.
Open and handle receptacle with care.
Prevent formation of aerosols.
- **Information about protection against explosions and fires:**
Keep respiratory protective device available.
The product is not flammable.
- **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 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:** +15 - +25°C
- **Storage class:** 6.1 D
- **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 trichloromethane

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

123-51-3 Isoamyl alcohol

| | |
|-----|--|
| PEL | Long-term value: 360 mg/m ³ , 100 ppm primary and secondary |
| REL | Short-term value: 450 mg/m ³ , 125 ppm Long-term value: 360 mg/m ³ , 100 ppm primary and secondary |
| TLV | Short-term value: 452 mg/m ³ , 125 ppm Long-term value: 361 mg/m ³ , 100 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.
Store protective clothing separately.
Avoid contact with the eyes and skin.
- **Breathing equipment:**
Filter AX
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.

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· **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.

· **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: ≥ 0.7 mm

Fluorocarbon rubber (Viton)

Value for the permeation: Level ≥ 480 min

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

Recommended thickness of the material: ≥ 0.7 mm

Butyl rubber, BR

Value for the permeation: Level ≥ 10 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

· **Odor threshold:** Not determined.

· **pH-value:** Not determined.

· **Change in condition**

Melting point/Melting range: Undetermined.

Boiling point/Boiling range: Undetermined.

· **Flash point:** Not applicable.

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

· **Decomposition temperature:** Not determined.

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

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| | |
|---|---|
| · Danger of explosion: | Product does not present an explosion hazard. |
| · Explosion limits: | |
| Lower: | Not determined. |
| Upper: | Not determined. |
| · Vapor pressure at 20 °C (68 °F): | 211 hPa (158.3 mm Hg) |
| · Density: | Not determined. |
| · Relative density | Not determined. |
| · Vapor density | Not determined. |
| · Evaporation rate | Not determined. |
| · Solubility in / Miscibility with Water: | Not miscible or difficult to mix. |
| · Partition coefficient (n-octanol/water): | Not determined. |
| · Viscosity: | |
| Dynamic: | Not determined. |
| Kinematic: | Not determined. |
| · Solvent content: | |
| Organic solvents: | 4.0 % |
| VOC content: | 4.00 % |
| Solids content: | 0.0 % |
| · Other information | No further relevant information available. |

10 Stability and reactivity

- **Reactivity** No dangerous reactions known.
- **Chemical stability**
- **Thermal decomposition / conditions to be avoided:** Strong heating
- **Possibility of hazardous reactions** No dangerous reactions known.
- **Conditions to avoid** No further relevant information available.
- **Incompatible materials:**
Risk of explosion with:
Alkali metals, Alkaline earth metals, peroxi compounds, Fluorine. alcoholates, strong alkalis, Sodium hydroxide, Methanol, alkali hydroxides, Alcohols, organic nitro compounds, alkali amides, Oxygen, bases, nitrogen oxides, Amines, Ammonia, Iron, in powder form, Aluminium, magnesium, metal alloys, sensitive to stock
- **Hazardous decomposition products:** In the event of fire: See chapter 5
- **Additional information:**
heat-sensitive
light sensitive

11 Toxicological information

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

| Components | Type | Value | Species |
|---------------------------------|------|----------------------|---------|
| 67-66-3 trichloromethane | | | |
| Oral | LD50 | 695 mg/kg (rat) | |
| Dermal | LD50 | 3,980 mg/kg (rabbit) | |

- **Primary irritant effect:**
- **on the skin:** Irritant to skin and mucous membranes.

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- **on the eye:** Irritating effect.
- **Additional toxicological information:**
The product shows the following dangers according to internally approved calculation methods for preparations:
Toxic
Harmful
Irritant
- **Carcinogenic categories**

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

12 Ecological information

- **Toxicity**
- **Aquatic toxicity:** Harmfull effect on aquatic organisms.

| Type of test | Effective concentration | Method | Assessment |
|---------------------------------|-------------------------|-----------------|------------|
| 67-66-3 trichloromethane | | | |
| EC50/48 h | 79 mg/l | (daphnia magna) | |
| LC50/96 h | 18 mg/l | (fish) | |

- **Persistence and degradability** Not easily biodegradable
- **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.

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14 Transport information

| | |
|--|---|
| <ul style="list-style-type: none"> · UN-Number · DOT, ADR, IMDG, IATA | UN2810 |
| <ul style="list-style-type: none"> · UN proper shipping name · DOT, ADR · IMDG, IATA | Toxic, liquids, organic, n.o.s. (Chloroform) TOXIC LIQUID, ORGANIC, N.O.S. (CHLOROFORM) |
| <ul style="list-style-type: none"> · Transport hazard class(es) · DOT | |
|  | |
| <ul style="list-style-type: none"> · Class · Label | 6.1 Toxic substances 6.1 |
| <ul style="list-style-type: none"> · ADR | |
|  | |
| <ul style="list-style-type: none"> · Class · Label | 6.1 (T1) Toxic substances 6.1 |
| <ul style="list-style-type: none"> · IMDG, IATA | |
|  | |
| <ul style="list-style-type: none"> · Class · Label | 6.1 Toxic substances 6.1 |
| <ul style="list-style-type: none"> · Packing group · DOT, ADR, IMDG, IATA | III |
| <ul style="list-style-type: none"> · Environmental hazards: · Marine pollutant: | No |
| <ul style="list-style-type: none"> · Special precautions for user · Danger code (Kemler): · EMS Number: · Segregation groups · Stowage Category · Stowage Code | Warning: Toxic substances 60 F-A,S-A Liquid halogenated hydrocarbons A SW2 Clear of living quarters. |
| <ul style="list-style-type: none"> · Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code | Not applicable. |
| <ul style="list-style-type: none"> · Transport/Additional information: | |
| <ul style="list-style-type: none"> · ADR · Excepted quantities (EQ) | Code: E1 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 1000 ml |
| <ul style="list-style-type: none"> · IMDG · Limited quantities (LQ) | 5L |

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- | | |
|-----------------------------------|--|
| · 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 2810 TOXIC, LIQUIDS, ORGANIC, N.O.S. (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):**

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

· **Carcinogeny 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**



GHS06 GHS07 GHS08

· **Signal word** Danger

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

trichloromethane

Isoamyl alcohol

· **Hazard statements**

H302 Harmful if swallowed.

H331 Toxic if inhaled.

H315 Causes skin irritation.

H319 Causes serious eye irritation.

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- 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**
P302+P352 If on skin: Wash with plenty of water.
P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P311 Call a poison center/doctor.
P305+P351+P338 If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
 - **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
- **Date of preparation / last revision** 03/30/2018 / 4
- **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 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
- *** Data compared to the previous version altered.**

US