

## SAFETY DATA SHEET

Version 6.5  
Revision Date 11/29/2021  
Print Date 05/28/2022

**SECTION 1: Identification of the substance/mixture and of the company/undertaking****1.1 Product identifiers**

Product name : Chloroform-d

Product Number : 612200  
Brand : Aldrich  
CAS-No. : 865-49-6

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

Identified uses : Laboratory chemicals, Synthesis of substances

**1.3 Details of the supplier of the safety data sheet**

Company : Sigma-Aldrich Inc.  
3050 SPRUCE ST  
ST. LOUIS MO 63103  
UNITED STATES

Telephone : +1 314 771-5765  
Fax : +1 800 325-5052

**1.4 Emergency telephone**

Emergency Phone # : 800-424-9300 CHEMTREC (USA) +1-703-  
527-3887 CHEMTREC (International) 24  
Hours/day; 7 Days/week

**SECTION 2: Hazards identification****2.1 Classification of the substance or mixture****GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)**

Acute toxicity, Oral (Category 4), H302  
Acute toxicity, Inhalation (Category 3), H331  
Skin irritation (Category 2), H315  
Eye irritation (Category 2A), H319  
Carcinogenicity (Category 2), H351  
Reproductive toxicity (Category 2), H361  
Specific target organ toxicity - single exposure (Category 3), Central nervous system, H336  
Specific target organ toxicity - repeated exposure, Oral (Category 1), Liver, Kidney, H372  
Short-term (acute) aquatic hazard (Category 3), H402

For the full text of the H-Statements mentioned in this Section, see Section 16.

**2.2 GHS Label elements, including precautionary statements**

Pictogram



Signal word

Danger

Hazard statement(s)

H302	Harmful if swallowed.
H315	Causes skin irritation.
H319	Causes serious eye irritation.
H331	Toxic if inhaled.
H336	May cause drowsiness or dizziness.
H351	Suspected of causing cancer.
H361	Suspected of damaging fertility or the unborn child.
H372	Causes damage to organs (Liver, Kidney) through prolonged or repeated exposure if swallowed.
H402	Harmful to aquatic life.

Precautionary statement(s)

P201	Obtain special instructions before use.
P202	Do not handle until all safety precautions have been read and understood.
P260	Do not breathe dust/ fume/ gas/ mist/ vapors/ spray.
P264	Wash skin thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P271	Use only outdoors or in a well-ventilated area.
P273	Avoid release to the environment.
P280	Wear protective gloves/ protective clothing/ eye protection/ face protection.
P301 + P312 + P330	IF SWALLOWED: Call a POISON CENTER/ doctor if you feel unwell. Rinse mouth.
P302 + P352	IF ON SKIN: Wash with plenty of soap and water.
P304 + P340 + P311	IF INHALED: Remove person to fresh air and keep comfortable for breathing. 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.
P308 + P313	IF exposed or concerned: Get medical advice/ attention.
P332 + P313	If skin irritation occurs: Get medical advice/ attention.
P337 + P313	If eye irritation persists: Get medical advice/ attention.
P362	Take off contaminated clothing and wash before reuse.
P403 + P233	Store in a well-ventilated place. Keep container tightly closed.
P405	Store locked up.
P501	Dispose of contents/ container to an approved waste disposal plant.

### 2.3 Hazards not otherwise classified (HNOC) or not covered by GHS - none

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## SECTION 3: Composition/information on ingredients

### 3.2 Mixtures

Synonyms	:	Deuterochloroform
Formula	:	CCl <sub>3</sub> D
Molecular weight	:	120.38 g/mol

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Component		Classification	Concentration
<b>Chloroform-D1-Deuteration</b>			
CAS-No.	865-49-6	Acute Tox. 4; Acute Tox. 3; Skin Irrit. 2; Eye Irrit. 2A; Carc. 2; Repr. 2; STOT SE 3; STOT RE 1; Aquatic Acute 3; H302, H331, H315, H319, H351, H361, H336, H372, H402	>= 90 - <= 100 %
EC-No.	212-742-4		
Registration number	01-2120242098-57-XXXX		

For the full text of the H-Statements mentioned in this Section, see Section 16.

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## SECTION 4: First aid measures

### 4.1 Description of first-aid measures

#### General advice

First aiders need to protect themselves. Show this material safety data sheet to the doctor in attendance.

#### If inhaled

After inhalation: fresh air. Immediately call in physician. If breathing stops: immediately apply artificial respiration, if necessary also oxygen.

#### In case of skin contact

In case of skin contact: Take off immediately all contaminated clothing. Rinse skin with water/ shower. Consult a physician.

#### In case of eye contact

After eye contact: rinse out with plenty of water. Call in ophthalmologist. Remove contact lenses.

#### If swallowed

After swallowing: immediately make victim drink water (two glasses at most). Consult a physician.

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

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

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

No data available

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## SECTION 5: Firefighting measures

### 5.1 Extinguishing media

#### Suitable extinguishing media

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

#### Unsuitable extinguishing media

For this substance/mixture no limitations of extinguishing agents are given.

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

Carbon oxides  
Hydrogen chloride gas  
Not combustible.  
Ambient fire may liberate hazardous vapours.

## **5.3 Advice for firefighters**

Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.

## **5.4 Further information**

Suppress (knock down) gases/vapors/mists with a water spray jet. Prevent fire extinguishing water from contaminating surface water or the ground water system.

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## **SECTION 6: Accidental release measures**

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

Advice for non-emergency personnel: Do not breathe vapors, aerosols. Avoid substance contact. Ensure adequate ventilation. Evacuate the danger area, observe emergency procedures, consult an expert.  
For personal protection see section 8.

### **6.2 Environmental precautions**

Do not let product enter drains.

### **6.3 Methods and materials for containment and cleaning up**

Cover drains. Collect, bind, and pump off spills. Observe possible material restrictions (see sections 7 and 10). Take up carefully with liquid-absorbent material (e.g. Chemizorb®). Dispose of properly. Clean up affected area.

### **6.4 Reference to other sections**

For disposal see section 13.

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## **SECTION 7: Handling and storage**

### **7.1 Precautions for safe handling**

#### **Advice on safe handling**

Work under hood. Do not inhale substance/mixture. Avoid generation of vapours/aerosols.

#### **Hygiene measures**

Immediately change contaminated clothing. Apply preventive skin protection. Wash hands and face after working with substance.  
For precautions see section 2.2.

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

#### **Storage conditions**

Tightly closed. Keep in a well-ventilated place. Keep locked up or in an area accessible only to qualified or authorized persons.

Store under inert gas. Light sensitive. hygroscopic

#### **Storage class**

Storage class (TRGS 510): 6.1D: Non-combustible, acute toxic Cat.3 / toxic hazardous materials or hazardous materials causing chronic effects

### 7.3 Specific end use(s)

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

## SECTION 8: Exposure controls/personal protection

### 8.1 Control parameters

#### Ingredients with workplace control parameters

Component	CAS-No.	Value	Control parameters	Basis
Chloroform-D1-Deuteration	865-49-6	TWA	10 ppm	USA. ACGIH Threshold Limit Values (TLV)
	Remarks	Confirmed animal carcinogen with unknown relevance to humans		
		ST	2 ppm 9.78 mg/m <sup>3</sup>	USA. NIOSH Recommended Exposure Limits
		Potential Occupational Carcinogen		
		C	50 ppm 240 mg/m <sup>3</sup>	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
		TWA	2 ppm 9.78 mg/m <sup>3</sup>	USA. OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000
		PEL	2 ppm 9.78 mg/m <sup>3</sup>	California permissible exposure limits for chemical contaminants (Title 8, Article 107)

### 8.2 Exposure controls

#### Appropriate engineering controls

Immediately change contaminated clothing. Apply preventive skin protection. Wash hands and face after working with substance.

#### Personal protective equipment

##### Eye/face protection

Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU). Safety glasses

##### Skin protection

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Full contact

Material: Fluorinated rubber

Minimum layer thickness: 0.7 mm

Break through time: 480 min

Material tested: Vitoject® (KCL 890 / Aldrich Z677698, Size M)

Splash contact

Material: Fluorinated rubber

Minimum layer thickness: 0.7 mm

Break through time: 480 min

Material tested: Vitoject® (KCL 890 / Aldrich Z677698, Size M)

data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN374

If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the EC approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

#### **Body Protection**

protective clothing

#### **Respiratory protection**

required when vapours/aerosols are generated.

Our recommendations on filtering respiratory protection are based on the following standards: DIN EN 143, DIN 14387 and other accompanying standards relating to the used respiratory protection system.

#### **Control of environmental exposure**

Do not let product enter drains.

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## **SECTION 9: Physical and chemical properties**

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

a) Appearance	Form: liquid, clear Color: colorless
b) Odor	characteristic
c) Odor Threshold	No data available
d) pH	No data available
e) Melting point/freezing point	Melting point/range: -64 °C (-83 °F)
f) Initial boiling point and boiling range	60.9 °C 141.6 °F
g) Flash point	> 60 °C (> 140 °F) at ca.1,019.2 hPa - closed cup - Regulation (EC) No. 440/2008, Annex, A.9 - Not classified due to data which are conclusive although insufficient for classification.
h) Evaporation rate	No data available
i) Flammability (solid, gas)	No data available
j) Upper/lower flammability or explosive limits	No data available
k) Vapor pressure	ca.265.31 hPa at ca.25 °C (ca.77 °F)
l) Vapor density	4.12 - (Air = 1.0)
m) Density	1.500 g/mL at 25 °C (77 °F)
Relative density	ca.1.44520 °C - OECD Test Guideline 109

n) Water solubility	4.6 g/l at 20 °C (68 °F) - Regulation (EC) No. 440/2008, Annex, A.6
o) Partition coefficient: n-octanol/water	log Pow: 1.5 at 20 °C (68 °F) - Bioaccumulation is not expected.
p) Autoignition temperature	Not applicable
q) Decomposition temperature	Distillable in an undecomposed state at normal pressure.
r) Viscosity	No data available
s) Explosive properties	No data available
t) Oxidizing properties	none

## 9.2 Other safety information

Surface tension	72.3 mN/m at 0.99g/l at 20 °C (68 °F) - Surface tension
Relative vapor density	4.12 - (Air = 1.0)

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## SECTION 10: Stability and reactivity

### 10.1 Reactivity

No data available

### 10.2 Chemical stability

The product is chemically stable under standard ambient conditions (room temperature) .  
Contains the following stabilizer(s):  
tetramethylsilane (0.05 %)

### 10.3 Possibility of hazardous reactions

Risk of explosion with:  
Ammonia  
Amines  
nitrogen oxides  
bases  
Oxygen  
alkali amides  
organic nitro compounds  
Alcohols  
alkali hydroxides  
strong alkalis  
Fluorine  
peroxi compounds  
Alkaline earth metals  
Alkali metals  
Powdered metals  
Methanol  
with  
alcoholates  
Methanol  
with  
strong alkalis

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Iron  
in powder form  
various alloys  
sensitive to shock  
Methanol  
with  
Sodium hydroxide  
magnesium  
in powder form  
Oxygen  
with  
alkali compounds  
Aluminum  
in powder form  
Acetone  
with  
alkali compounds  
Potassium  
sensitive to shock  
sodium  
sensitive to shock  
Violent reactions possible with:  
phosphines  
bis(dimethylamino)dimethyl tin  
nonmetallic hydrogen compounds  
Powdered metals  
Light metals  
Ketones  
mineral acids  
Strong oxidizing agents  
semimetallic hydrogen compounds

#### **10.4 Conditions to avoid**

no information available

#### **10.5 Incompatible materials**

rubber, various plastics

#### **10.6 Hazardous decomposition products**

In the event of fire: see section 5

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### **SECTION 11: Toxicological information**

#### **11.1 Information on toxicological effects**

##### **Mixture**

##### **Acute toxicity**

Acute toxicity estimate Oral - 908.45 mg/kg  
(Calculation method)

Symptoms: Irritations of mucous membranes in the mouth, pharynx, oesophagus and gastrointestinal tract.

Acute toxicity estimate Inhalation - 4 h - 3.1 mg/l - vapor (Calculation method)

Symptoms: Possible symptoms: , mucosal irritations

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Dermal: No data available

**Skin corrosion/irritation**

Mixture causes skin irritation.

**Serious eye damage/eye irritation**

Mixture causes serious eye irritation.

**Respiratory or skin sensitization**

No data available

**Germ cell mutagenicity**

No data available

**Carcinogenicity**

Evidence of a carcinogenic effect.

IARC: 2B - Group 2B: Possibly carcinogenic to humans (Chloroform-D1-Deuteration)

NTP: No ingredient of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.

**Reproductive toxicity**

Suspected of damaging the unborn child.

Suspected of damaging fertility.

**Specific target organ toxicity - single exposure**

Mixture may cause drowsiness or dizziness.

**Specific target organ toxicity - repeated exposure**

Mixture causes damage to organs through prolonged or repeated exposure. - Liver, Kidney

**Aspiration hazard**

No data available

**11.2 Additional Information**

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Other dangerous properties can not be excluded.

This substance should be handled with particular care.

Handle in accordance with good industrial hygiene and safety practice.

**Components**

**Chloroform-D1-Deuteration**

**Acute toxicity**

LD50 Oral - Rat - male - 908 mg/kg

(OECD Test Guideline 401)

Inhalation: No data available

Dermal: No data available

**Skin corrosion/irritation**

Skin - Rabbit

Result: Irritating to skin. - 24 h

Remarks: (ECHA)  
Drying-out effect resulting in rough and chapped skin.

**Serious eye damage/eye irritation**

Eyes - Rabbit  
Result: Irritating to eyes.  
Remarks: (ECHA)

**Respiratory or skin sensitization**

Maximization Test - Guinea pig  
Result: negative  
(Regulation (EC) No. 440/2008, Annex, B.6)

**Germ cell mutagenicity**

Test Type: Ames test  
Test system: Salmonella typhimurium  
Result: negative  
Remarks: (ECHA)  
Test Type: In vitro mammalian cell gene mutation test  
Test system: mouse lymphoma cells  
Result: positive  
Remarks: (ECHA)  
Species: Rat - male - Bone marrow  
Result: positive  
Remarks: (ECHA)

**Carcinogenicity**

Suspected of causing cancer.

**Reproductive toxicity**

Suspected of damaging the unborn child.

**Specific target organ toxicity - single exposure**

May cause drowsiness or dizziness.  
Remarks: (in analogy to similar products)  
The value is given in analogy to the following substances: Chloroform

**Specific target organ toxicity - repeated exposure**

Oral - Causes damage to organs through prolonged or repeated exposure. - Liver, Kidney  
Remarks: Classified according to Regulation (EU) 1272/2008, Annex VI (Table 3.1/3.2)

**Aspiration hazard**

No data available

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## SECTION 12: Ecological information

### 12.1 Toxicity

**Mixture**

No data available

### 12.2 Persistence and degradability

No data available

### 12.3 Bioaccumulative potential

No data available

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#### 12.4 Mobility in soil

No data available

#### 12.5 Results of PBT and vPvB assessment

PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

#### 12.6 Endocrine disrupting properties

No data available

#### 12.7 Other adverse effects

No data available

##### Components

##### Chloroform-D1-Deuteration

Toxicity to daphnia and other aquatic invertebrates	static test EC50 - Daphnia magna (Water flea) - 79 mg/l - 48 h Remarks: (ECHA)
Toxicity to algae	static test ErC50 - Chlamydomonas reinhardtii (green algae) - 13.3 mg/l - 72 h Remarks: (ECHA)
Toxicity to bacteria	static test EC50 - activated sludge - 0.48 mg/l - 24 h Remarks: (ECHA)

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### SECTION 13: Disposal considerations

#### 13.1 Waste treatment methods

##### Product

Waste material must be disposed of in accordance with the national and local regulations. Leave chemicals in original containers. No mixing with other waste. Handle uncleaned containers like the product itself. See [www.retrologistik.com](http://www.retrologistik.com) for processes regarding the return of chemicals and containers, or contact us there if you have further questions.

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### SECTION 14: Transport information

#### DOT (US)

UN number: 1888    Class: 6.1    Packing group: III  
Proper shipping name: Chloroform  
Reportable Quantity (RQ): 10 lbs  
Reportable Quantity (RQ): 10 lbs  
Poison Inhalation Hazard: No

#### IMDG

UN number: 1888    Class: 6.1    Packing group: III    EMS-No: F-A, S-A  
Proper shipping name: CHLOROFORM

#### IATA

UN number: 1888    Class: 6.1    Packing group: III

Proper shipping name: Chloroform

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**SECTION 15: Regulatory information****SARA 302 Components**

Chloroform-D1-Deuteration

CAS-No.  
865-49-6

Revision Date  
2008-11-03

**SARA 313 Components**

The following components are subject to reporting levels established by SARA Title III, Section 313:

Chloroform-D1-Deuteration

CAS-No.  
865-49-6

Revision Date  
2008-11-03

**SARA 311/312 Hazards**

Acute Health Hazard, Chronic Health Hazard

:

**Reportable Quantity**      D022 lbs

**Massachusetts Right To Know Components**

No components are subject to the Massachusetts Right to Know Act.

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**SECTION 16: Other information****Further information**

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Corporation and its Affiliates shall not be held liable for any damage resulting from handling or from contact with the above product. See [www.sigma-aldrich.com](http://www.sigma-aldrich.com) and/or the reverse side of invoice or packing slip for additional terms and conditions of sale.

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