



Safety Data Sheet

Section 1 - Identification.....2

Section 2: Hazard Identification.....2

Section 3: Composition/information on ingredients..... 5

Section 4: First aid measures..... 5

Section 5: Firefighting measurers..... 6

Section 6: Accidental release measurers..... 7

Section 7: Handling and storage..... 8

Section 8: Exposure controls – Personal protection.....8

Section 9: Physical and chemical properties..... 10

Section 10: Stability and reactivity..... 11

Section 11: Toxicological information.....13

Section 12: Ecological information..... 16

Section 13: Disposal considerations..... 20

Section 14: Transportation information..... 20

Section 15: Regulatory information..... 22

Section 16: Other information.....23

Section 1 - Identification

1.1 Product Identifier

Product Name : Chloroform

CAS No. : 67-66-3

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

Identified uses : Reagent for analysis

1.3 Details of the supplier of the safety data sheet

Company : 9920 Pacific Heights Blvd
Suit 150
San Diego
California -92121

1.4 Emergency Telephone number

Emergency phone : +1 (858) 245-0283

Section 2: Hazard Identification

2.1 Classification of the substance or the mixture

Acute toxicity	Category 4	H302:Harmful if swallowed.
Acute toxicity	Category 3	H331:Toxic if inhaled
Skin irritation	Category 2	H315:Causes skin irritation.
Eye irritation	Category 2	H319:Causes serious eye irritation.
Carcinogenicity	Category 2	H351:Suspected of causing cancer.
Reproductive toxicity	Category 2	H361:Suspected of damaging the unborn child.
Specific target organ toxicity -single exposure	Category 3	H336:May cause drowsiness or dizziness

Specific target organ toxicity
-repeated exposure

Category 1

Causes damage to organs
through prolonged or repeated
exposure if swallowed.

2.2 Label elements

Label according Regulation (EC) 1272/2008

Hazard Pictogram



Signal Word:
DANGER

Hazard statements

- | | |
|------|--|
| 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 the unborn child. |
| H372 | Causes damage to organs (Liver, Kidney) through prolonged or repeated exposure if swallowed. |

Precautionary statements

Prevention

- | | |
|------|---|
| P202 | Do not handle until all safety precautions have been read and understood. |
|------|---|

Response

P301+P312	IF SWALLOWED: Call a POISON CENTER/ doctor if you feel unwell.
P302+P352	IF ON SKIN: Wash with plenty of 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.

Additional Labelling

For use in industrial installations only.

Reduced Labelling (<= 125 ml)

Hazard Pictogram



Signal Word:
DANGER

Hazard Statements

H331	Toxic if inhaled.
H351	Suspected of causing cancer.
H372	Causes damage to organs through prolonged or repeated exposure if swallowed.
H361	Suspected of damaging the unborn child.

Precautionary Statements

P202	Do not handle until all safety precautions have been read and
------	---

understood

P304+P340+P311

IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/ doctor.

P308+P313

IF exposed or concerned: Get medical advice/ attention

Supplemental Hazard
Statements

none

2.3 Other hazards

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

Ecological information:

The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

Toxicological information:

The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

Section 3: Composition/information on ingredients

3.1 Substance

Index-No. : 602-006-00-4

EC-No. : 200-663-8

Section 4: First aid measures

4.1 Description of first aid measures

General advice

First aiders need to protect themselves. Show this 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 labeling (see section 2.2) and/or in section 11.

4.3 Indications of any immediate medical attention and special treatment needed

No data available

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 hazard arising from the substance or mixture

Specific hazards during fire fighting :Not combustible.

Fire may cause evolution of:

Hydrogen chloride gas

Phosgene

Ambient fire may liberate hazardous vapours.

Hazardous combustion products : Carbon oxides

5.3 Advice for firefighters

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

Further information : Suppress (knock down) gases/vapours/mists with a water spray jet.

Prevent fire extinguishing water from contaminating surface water or the ground water system.

Section 6: Accidental release measurers

6.1 Personal precautions, protective equipment and emergency procedures

Personal precautions : Advice for non-emergency personnel: Do not breathe vapours, 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 Environment precautions

Environmental precautions : Do not let product enter drains.

6.3 Methods and materials for containment and cleaning up

Methods for cleaning up : Cover drains. Collect, bind, and pump off spills. Observe possible material restrictions (see sections 7 and 10). Take up 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.

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

Further information on storage conditions : Protected from light.

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

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

Further information on storage stability : Recommended storage temperature see product label.

Recommended storage temperature : Recommended storage temperature see product label.

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

Occupational Exposure Limits

8.2 Exposure Controls

Individual protection measures, such as personal protective equipment (PPE)

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
Hand protection	
Material	: Viton®
Break through time	: 480 min
Glove thickness	: 0.7 mm
Protective index	: Full contact
Manufacturer	: Vitoject® (KCL 890 / Aldrich Z677698, Size M) :
Material	: butyl-rubber
Break through time	: 10 min
Glove thickness	: 0.7 mm
Protective index	: Splash contact
Manufacturer	: Butoject® (KCL 898)
Remarks	: This recommendation applies only to the product stated in the safety data sheet, supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN 16523-1 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: www.kcl.de).
Skin and 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.

Recommended Filter type: : Filter Ax

The entrepreneur has to ensure that maintenance, cleaning and testing of respiratory protective devices are carried out according to the instructions of the producer.

These measures have to be properly documented.

Environmental exposure controls

Advice : Do not let product enter drains

Section 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state	: liquid (20 °C, 1.013 hPa)
Color	: Colourless
Odor	: Sweet
Odor Threshold	: 205 ppm
Melting point/range	: -64 °C
Boiling point/boiling range	: 60.5 °C(1.013.25 hPa)
Flammability	: The product is not flammable.
Upper explosion limit / Upper flammability limit	: Not applicable
Flash point	: Method: Regulation (EC) No. 440/2008, Annex, A.9 does not flash
Autoignition temperature	: not combustible
Decomposition temperature	: Distillable in an undecomposed state at normal pressure.
pH	: No data available
Viscosity,dynamic	: No data available

Viscosity, Kinematic	: No data available
Flow time	No data available
Solubility(ies)	: 8.7 g/l (23 °C)
Water solubility	pH: 7 Method: OECD Test Guideline 105 soluble
Solubility in other solvents	: (20 °C) Solvent: organic solvent miscible
Partition coefficient n-octanol/water	: No data available
Vapor pressure	: 210 hPa (20 °C)
Relative density	: No data available
Density	: 1.49 g/cm ³ (25 °C)
Relative vapour density	: 4.12 (Air = 1.0)

9.2 Other information

Explosives	: Not classified as explosive
Oxidizing properties	: None
Burning rate	: No data available
Evaporation rate	: No data available
Molecular weight	: 119.38 g/mol

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 stabiliser(s):
ethanol(1 %)

10.3 Possibility of hazardous reactions

Hazardous reactions	: Risk of explosion with:
	Ammonia
	Amines
	nitrogen oxides
	bases
	Oxygen
	alkali amides
	organic nitro compounds
	strong alkalis
	Fluorine
	peroxi compounds
	Alkaline earth metals
	Alkali metals
	Powdered metals
	Methanol
	with
	alcoholates
	Methanol
	with
	strong alkalis
	Iron
	in powder form
	magnesium
	in powder form
	various alloys
	sensitive to shock
	Methanol
	with
	Sodium hydroxide
	Oxygen

with
alkali compounds
Aluminium
in powder form
Acetone
with
alkali compounds
Potassium
sensitive to shock
phosphines
bis(dimethylamino)dimethyl tin
nonmetallic hydrogen compounds
Powdered metals
Light metals
Ketones
mineral acids
Strong oxidizing agents
semimetallic hydrogen compounds
sodium
sensitive to shock
Violent reactions possible with:

10.4 Conditions to avoid

Conditions to avoid : no information available

10.5 Incompatible materials

No data available

10.6 Hazardous decomposition products

In the event of fire: see section 5

Section 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Acute toxicity estimate Oral - 917,17 mg/kg
(Calculation method)
LD50 Oral - Rat - male - 908 mg/kg (Chloroform)
(OECD Test Guideline 401)
Acute toxicity estimate Oral - 908 mg/kg (Chloroform)
(ATE value derived from LD50/LC50 value)
Acute toxicity estimate Inhalation - 4 h - 3,13 mg/l - vapour (Calculation method)

LC50 Inhalation - Rat - 6 h - 9,17 mg/l - vapour
(Chloroform)
Acute toxicity estimate Inhalation - Expert judgement - 4 h - 3,1 mg/l - vapour
(Chloroform)
Dermal: No data available

Skin corrosion/irritation

Skin - Rabbit (Chloroform)
Result: Irritating to skin. - 24 h
Remarks: (ECHA)
Remarks: Drying-out effect resulting in rough and chapped skin.
Skin - Rabbit (Chloroform)
Result: slight irritation
Remarks: (IUCLID)

Serious eye damage/eye irritation

Eyes - Rabbit (Chloroform)
Result: Irritating to eyes.
Remarks: (ECHA)
Remarks: (Regulation (EC) No 1272/2008, Annex VI)

Respiratory or skin sensitization

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

Germ cell mutagenicity

Test Type: Ames test
(Chloroform)
Test system: Escherichia coli/Salmonella typhimurium

Metabolic activation: with and without metabolic activation

Result: negative

Remarks: (ECHA)

Test Type: unscheduled DNA synthesis assay
(Chloroform)

Test system: Liver

Metabolic activation: without metabolic activation

Result: negative

Remarks: (ECHA)

(Chloroform)

Test Type: Micronucleus test

Species: Rat

Cell type: Red blood cells (erythrocytes)

Application Route: Oral

Method: OECD Test Guideline 474

Result: negative

(Chloroform)

Test Type: unscheduled DNA synthesis assay

Species: Rat

Cell type: Liver cells

Application Route: Oral

Method: OECD Test Guideline 486

Result: negative

(Chloroform)

Test Type: in vivo assay

Species: Mouse

Application Route: Inhalation

Result: negative

Remarks: (ECHA)

Carcinogenicity

Suspected of causing cancer. (Chloroform)

Reproductive toxicity

Suspected of damaging the unborn child. (Chloroform)

Specific target organ toxicity - single exposure

May cause drowsiness or dizziness. (Chloroform)

Specific target organ toxicity - repeated exposure

Causes damage to organs through prolonged or repeated exposure.

- Liver, Kidney

Aspiration hazard

No data available

11.2 Additional Information

Endocrine disrupting properties

Product:

Assessment : The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

Repeated dose toxicity - Rat - female - Oral - No observed adverse effect level - 34 mg/kg (Chloroform)

(Chloroform)

Vomiting, Cough, irritant effects, Shortness of breath, respiratory arrest, narcosis,

Dizziness, Nausea, agitation, spasms, inebriation, Headache, Stomach/intestinal disorders, ataxia (impaired locomotor coordination), cardiovascular disorders (Chloroform)

Drying-out effect resulting in rough and chapped skin. (Chloroform)

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

Section 12: Ecological information

12.1 Toxicity

Components:

Chloroform:

Toxicity to daphnia and : EC50 (Crassostrea gigas): 152,5 mg/l

other aquatic
invertebrates

Exposure time: 48 h
Test Type: static test
Analytical monitoring: yes
Remarks: (ECHA)

Toxicity to algae/aquatic
plants

: ErC50 (Chlamydomonas reinhardtii (green algae)):
13,3 mg/l

Exposure time: 72 h
Test Type: static test
Analytical monitoring: yes
Remarks: (ECHA)

Toxicity to daphnia and
other aquatic
invertebrates (Chronic
toxicity)

: NOEC: 6,3 mg/l
End point: reproduction rate
Exposure time: 21 d
Species: Daphnia magna (Water flea)
Test Type: semi-static test
Analytical monitoring: yes
Remarks: (ECHA)

Ecotoxicology Assessment

Chronic aquatic toxicity

This product has no known ecotoxicological effects.

ethanol:

Toxicity to fish

: LC50 (Pimephales promelas (fathead minnow)):
15.300 mg/l
End point: mortality
Exposure time: 96 h
Test Type: flow-through test
Analytical monitoring: yes
Method: US-EPA

Toxicity to daphnia and
other aquatic invertebrates

: LC50 (Ceriodaphnia dubia (water flea)): 5.012 mg/l
End point: mortality
Exposure time: 48 h
Test Type: static test
Remarks: (ECHA)

Toxicity to algae/aquatic
plants

: ErC50 (Chlorella vulgaris (Fresh water algae)): 275
mg/l
Exposure time: 72 h
Test Type: static test

Toxicity to microorganisms	Method: OECD Test Guideline 201
	: IC50 (activated sludge): > 1.000 mg/l
	Exposure time: 3 h
	Test Type: static test
	Analytical monitoring: yes
Toxicity to fish (Chronic toxicity)	Method: OECD Test Guideline 209
	The value is given in analogy to the following substances: Methanol
	: NOEC: 250 mg/l
	Exposure time: 120 h
	Species: Danio rerio (zebra fish)
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	Test Type: semi-static test
	Remarks: (ECHA)
	: NOEC: 9,6 mg/l
	End point: reproduction rate
	Exposure time: 9 d
	Species: Daphnia magna (Water flea)
	Test Type: semi-static test
	Remarks: (ECHA)

12.2 Persistence and degradability

Components:

Chloroform

Biodegradability : Remarks: No data available

ethanol:

Biodegradability : Test Type: aerobic
Inoculum: activated sludge, non-adapted
Result: Readily biodegradable.
Biodegradation: ca. 95 %
Exposure time: 15 d
Method: OECD Test Guideline 301E

Biochemical Oxygen Demand (BOD) : 930 - 1.670 mg/g
Incubation time: 5 d
Remarks: (Lit.)

ThOD : 2.100 mg/g
Remarks: (Lit.)

12.3 Bioaccumulated potential

Components:

Chloroform

Biodegradability : Remarks: No data available

ethanol:

Bioaccumulation : Remarks: Due to the distribution coefficient n-octanol/water, accumulation in organisms is not expected.

Partition coefficient: n-octanol/water : log Pow: -0,35 (24 °C)
pH: 7,4
Method: OECD Test Guideline 107
Remarks: Bioaccumulation is not expected.

12.4 Mobility in soil

Components:

Chloroform:

Distribution among : Remarks: No data available
Environmental compartments Adsorption/Soil
Koc: 52,5, log Koc: 1,72
Method: (experimental)
Remarks: Mobile in soils

12.5 Results of PBT and vPvB assessment

Product:

Assessment :-This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

Components:

Chloroform:

Assessment : Substance does not meet the criteria for PBT or vPvB according to Regulation (EC) No 1907/2006, Annex XIII.

Ethanol:

Assessment : Substance does not meet the criteria for PBT or vPvB according to Regulation (EC) No 1907/2006, Annex XIII

12.6 Endocrine disrupting properties

Product:

The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

12.7 Other adverse effects

No data available

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.

Section 14: Transportation information

14.1 UN Number or ID number

ADR	UN 1888
IMDG	UN 1888

IATA

UN 1888

14.2 UN proper shipping name

ADR

CHLOROFORM

IMDG

CHLOROFORM

IATA

CHLOROFORM

14.3 Transport hazard class(es)

ADR

6.1

IMDG

6.1

IATA

6.1

14.4 Packaging group

ADR

Packing group

III

Classification Code

T1

Hazard Identification Number

60

Labels

6.1

Tunnel restriction code

(E)

IMDG

Packing group

III

Labels

6.1

EmS Code

F-A, S-A

IATA(Cargo)

Packing instruction (cargo aircraft)

680

Packing instruction (LQ)

Y680

Packing group

III

Labels

Division 6.1 - Toxic substances

IATA_P (Passenger)

Packing instruction (passenger aircraft)

680

Packing instruction (LQ)

Y680

Packing group

III

Labels

Division 6.1 - Toxic substances

14.5 Environmental hazards

ADR

Environmentally hazardous no

IMDG

Marine pollutant no

14.6 Special precautions for user

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

14.7 Maritime transport in bulk according to IMO instruments

Not applicable for product as supplied.

Section 15: Regulatory information

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

REACH - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles (Annex XVII) : Conditions of restriction for the following entries should be considered:
Number on list 3

Number on list 75
If you intend to use this product as tattoo ink, please contact your vendor.

REACH - Candidate List of Substances of Very High Concern for Authorisation (Article 59). : Not applicable

Regulation (EU) No 2024/590 on substances that deplete the ozone layer : Not applicable

Regulation (EU) 2019/1021 on persistent organic pollutants (recast) : Not applicable

REACH - List of substances subject to
authorisation (Annex XIV)

: Not applicable

15.2 Chemical safety assessment

A Chemical Safety Assessment has been carried out for this substance.

Section 16: Other information

Full text of H-statements

H319 Causes serious eye irritation.

H336 May cause drowsiness or dizziness.

Further information

The information and recommendations in this SDS are to the best of our knowledge, information and belief accurate at the time of publication. Although utmost care is been taken in composition of this text, Highpuris LLC cannot be held responsible for any damage resulting from any possible error in this publication.