

## Chemical Safety Data Sheet MSDS / SDS

## Hydrochloric acid

Revision Date:2026-04-11 Revision Number:1

---

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

**Product identifier**

Product name : Hydrochloric acid  
CBnumber : CB7421538  
CAS : 7647-01-0  
EINECS Number : 231-595-7  
Synonyms : HCl, Hydrochloric Acid

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

Relevant identified uses : For R&D use only. Not for medicinal, household or other use.  
Uses advised against : none

**Company Identification**

Company : Chemicalbook  
Address : Building 1, Huihuang International, Shangdi 10th Street, Haidian District, Beijing  
Telephone : 010-86108875

---

## SECTION 2: Hazards identification

**GHS Label elements, including precautionary statements**

Symbol(GHS)



Signal word

Warning

**Precautionary statements**

P234 Keep only in original container.  
P390 Absorb spillage to prevent material damage.

**Hazard statements**H290 May be corrosive to metals

---

## SECTION 3: Composition/information on ingredients

**Substance**

Product name : Hydrochloric acid

Synonyms	: HCl, Hydrochloric Acid
CAS	: 7647-01-0
EC number	: 231-595-7
MF	: CIH
MW	: 36.46

---

## SECTION 4: 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. Call in physician.

### In case of skin contact

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

### In case of eye contact

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

### If swallowed

After swallowing: make victim drink water (two glasses at most), avoid vomiting (risk of perforation). Call a physician immediately. Do not attempt to neutralise.

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

The most important known symptoms and effects are described in the labelling (see section 2) and/or in section 11

### Protection of first-aiders

For personal protection see section 8.

### Notes to physician

No data available

---

## SECTION 5: Firefighting measures

### Suitable extinguishing media

Water Foam Carbon dioxide (CO<sub>2</sub>) Dry powder

### Unsuitable extinguishing media

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

### Specific hazards during fire fighting

Combustible. Vapors are heavier than air and may spread along floors. Forms explosive mixtures with air at elevated temperatures.

Development of hazardous combustion gases or vapours possible in the event of fire.

## Hazardous combustion products

Carbon oxides Hydrogen chloride gas

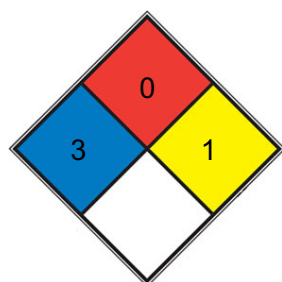
## Specific extinguishing methods

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

## 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.

## NFPA 704



**HEALTH** 3 Short exposure could cause serious temporary or moderate residual injury (e.g. [liquid hydrogen](#), [sulfuric acid](#), [calcium hypochlorite](#), hexafluorosilicic acid)

**FIRE** 0 Materials that will not burn under typical fire conditions, including intrinsically noncombustible materials such as concrete, stone, and sand. Materials that will not burn in air when exposed to a temperature of 820 °C (1,500 °F) for a period of 5 minutes.(e.g. Carbon tetrachloride)

**REACT** 1 Normally stable, but can become unstable at elevated temperatures and pressures (e.g. [propene](#))

**SPEC.**  
**HAZ.**

## SECTION 6: Accidental release measures

### Personal precautions, protective equipment and emergency procedures

Advice for non-emergency personnel: Do not breathe vapors, aerosols. Avoid substance contact. Ensure adequate ventilation. Keep away from heat and sources of ignition. Evacuate the danger area, observe emergency procedures, consult an expert. Advice for emergency responders: For personal protection see section 8.

### Environmental precautions

Do not let product enter drains. Risk of explosion.

### 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 with liquid-absorbent material (e.g. Chemizorb®). Dispose of properly. Clean up affected area.

---

## SECTION 7: Handling and storage

### Handling

#### Advice on protection against fire and explosion

Keep away from open flames, hot surfaces and sources of ignition. Take precautionary measures against static discharge.

#### Avoidance of contact

Oxidizing agents Soluble carbonates and phosphates Hydroxides Metals Peroxides permanganates, for example potassium permanganate Amines Alcohols Bases Alkali metals Fluorine hexalithium disilicide Metals

### Storage

#### Conditions for safe storage

No metal containers.

#### Further information on storage conditions

Keep container tightly closed in a dry and wellventilated place. Keep away from heat and sources of ignition.

#### Storage class

3, Flammable liquids

#### Recommended storage temperature

Recommended storage temperature see product label.

#### Further information on

hygroscopic storage stability

#### Packaging material

Suitable material: Poly Drum

---

## SECTION 8: Exposure controls/personal protection

### control parameter

#### Hazard composition and occupational exposure limits

Does not contain substances with occupational exposure limits.

#### Engineering measures

No data available

#### Personal protective equipment

##### 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 type ABEK

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.

##### Eye/face protection

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

Tightly fitting safety goggles

#### **Skin and body protection**

Flame retardant antistatic protective clothing.

#### **Hand protection**

##### **Material**

butyl-rubber

##### **Break through time**

480 min

##### **Glove thickness**

0.3 mm

##### **Protective index**

Full contact

##### **Manufacturer**

Butoject® (KCL 897 / Aldrich Z677647, Size M)

##### **Material**

Nitrile rubber

##### **Break through time**

30 min

##### **Glove thickness**

0.11 mm

##### **Protective index**

Splash contact

##### **Manufacturer**

(KCL 740 / Aldrich Z677272, Size M)

##### **Manufacturer**

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

#### **Remarks**

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.

The selected protective gloves have to satisfy the specifications of Regulation (EU) 2016/425 and the standard EN 374 derived from it.

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.

#### **Hygiene measures**

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

---

## SECTION 9: Physical and chemical properties

### **Information on basic physicochemical properties**

liquid

---

**Color**

Light Yellow

**Odor**

Sharp, irritating odor detectable at 0.25 to 10 ppm

**Odor Threshold**

No data available

**pH**

3.01(1 mM solution);2.04(10 mM solution);1.08(100 mM solution);

**Melting point/ range**

No data available

**Boiling point/boiling range**

>100 °C (lit.)

**Flash point**

40 °C

**Evaporation rate**

No data available

**Flammability (solid, gas)**

No data available

**Flammability (liquids)**

No data available

**Burning rate**

No data available

**Upper explosion limit / Upper flammability limit**

2-13.4% (v/v) 2-Propanol)

**Lower explosion limit / Lower flammability limit**

2-13.4% (v/v) 2-Propanol)

**Vapor pressure**

613 psi ( 21.1 °C)

**Relative vapor density**

1.3 (vs air)

**Relative density**

1.2 g/mL at 25 °C (lit.)

### **Density**

1.092 g/mL (25 °C)

### **Water solubility**

miscible

### **Partition coefficient: n-octanol/water**

No data available

### **Autoignition temperature**

No data available

### **Decomposition temperature**

No data available

### **Viscosity, dynamic**

No data available

### **Viscosity, kinematic**

No data available

### **Flow time**

No data available

### **Explosive properties**

Not classified as explosive.

### **Oxidizing properties**

none

### **Molecular weight**

36.46 g/mol

### **Particle characteristics Particle size**

No data available

### **Solubility**

H<sub>2</sub>O: soluble

### **Physical state**

liquid

### **Viscosity**

1.7mm<sup>2</sup>/s

## Dielectric constant

4.6 (20°C)

---

## SECTION 10: Stability and reactivity

### Reactivity

Vapor/air-mixtures are explosive at intense warming.

### Chemical stability

The product is chemically stable under standard ambient conditions (room temperature) .

### Possibility of hazardous reactions

No data available

### Conditions to avoid

Heating.

### Incompatible materials

Oxidizing agents Soluble carbonates and phosphates Hydroxides Metals Peroxides permanganates, for example potassium permanganate Amines Alcohols Bases Alkali metals Fluorine hexalithium disilicide Metals

### Hazardous decomposition products

In the event of fire: see section 5

---

## SECTION 11: Toxicological information

### 11.1 Information on toxicological effects

#### Mixture Acute toxicity

Oral: No data available

Acute toxicity estimate Oral - 3,425 mg/kg (Calculation method)

Symptoms: If ingested, severe burns of the mouth and throat, as well as a danger of perforation of the esophagus and the stomach.

Symptoms: mucosal irritations, Cough, Shortness of breath, Possible damages:, damage of respiratory tract

Dermal: No data available

#### Skin corrosion/irritation

Remarks: Causes burns.

#### Serious eye damage/eye irritation

Remarks: Risk of serious damage to eyes.

#### Respiratory or skin sensitization

Classified based on available data. For more details, see section 2

#### Germ cell mutagenicity

Classified based on available data. For more details, see section 2

#### Carcinogenicity

Classified based on available data. For more details, see section 2

#### **Reproductive toxicity**

Classified based on available data. For more details, see section 2

#### **Specific target organ toxicity - single exposure**

Classified based on available data. For more details, see section 2

#### **Specific target organ toxicity - repeated exposure**

Classified based on available data. For more details, see section 2

#### **Aspiration hazard**

Classified based on available data. For more details, see section 2

### **11.2 Additional Information**

Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin., spasm, inflammation and edema of the larynx, spasm, inflammation and edema of the bronchi, pneumonitis, pulmonary edema, burning sensation, Cough, wheezing, laryngitis, Shortness of breath, Headache,

Nausea, Vomiting, Ingestion or inhalation of concentrated acetic acid causes damage to tissues of the respiratory and digestive tracts.

Symptoms include: hematemesis, bloody diarrhea, edema and/or perforation of the esophagus and pylorus, pancreatitis, hematuria, anuria, uremia, albuminuria, hemolysis, convulsions, bronchitis, pulmonary edema, pneumonia, cardiovascular collapse, shock, and death.

Direct contact or exposure to high concentrations of vapor with skin or eyes can cause: erythema, blisters, tissue destruction with slow healing, skin blackening, hyperkeratosis, fissures, corneal erosion, opacification, iritis, conjunctivitis, and possible blindness., To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Other dangerous properties can not be excluded.

Handle in accordance with good industrial hygiene and safety practice.

#### **Components acetic acid**

##### **Acute toxicity**

LD50 Oral - Rat - 3,310 mg/kg

Remarks: (RTECS)

LC50 Inhalation - Mouse - 4 h - 2,819 mg/l - vapor

Remarks: (RTECS)

Dermal: No data available

##### **Skin corrosion/irritation**

Skin - Rabbit

Result: Causes burns. - 4 h (OECD Test Guideline 404)

Remarks: Classified according to Regulation (EU) 1272/2008, Annex VI (Table 3.1/3.2)

##### **Serious eye damage/eye irritation**

Eyes - Rabbit

Result: Causes burns. - 4 h (OECD Test Guideline 405)

Remarks: (IUCLID)

Remarks: Causes serious eye damage.

##### **Respiratory or skin sensitization**

Classified based on available data. For more details, see section 2

##### **Germ cell mutagenicity**

Test Type: Ames test

Test system: Salmonella typhimurium

Result: negative

Test Type: Mutagenicity (mammal cell test): chromosome aberration.

Test system: Chinese hamster ovary cells

Result: negative

Method: Mutagenicity (micronucleus test)

Species: Rat - male and female - Bone marrow

Result: negative

#### **Carcinogenicity**

Classified based on available data. For more details, see section 2

#### **Reproductive toxicity**

Classified based on available data. For more details, see section 2

#### **Specific target organ toxicity - single exposure**

Classified based on available data. For more details, see section 2

#### **Specific target organ toxicity - repeated exposure**

Classified based on available data. For more details, see section 2

#### **Aspiration hazard**

Classified based on available data. For more details, see section 2

#### **Hydrochloric Acid Acute toxicity**

Symptoms: If ingested, severe burns of the mouth and throat, as well as a danger of perforation of the esophagus and the stomach.

Inhalation: Cough Difficulty in breathing

Symptoms: mucosal irritations, Cough, Shortness of breath, Inhalation may lead to the formation of oedemas in the respiratory tract., Possible damage- es., damage of respiratory tract, tissue damage

Dermal: No data available

#### **Skin corrosion/irritation**

Skin - reconstructed human epidermis (RhE)

Result: Corrosive (OECD Test Guideline 431)

#### **Serious eye damage/eye irritation**

Eyes - Bovine cornea

Result: Causes serious eye damage. - 10 min (OECD Test Guideline 437)

#### **Respiratory or skin sensitization**

Maximization Test - Guinea pig

Result: negative (OECD Test Guideline 406)

#### **Germ cell mutagenicity**

Test Type: Chromosome aberration test in vitro

Test system: Chinese hamster ovary cells

Result: Positive results were obtained in some in vitro tests.

Remarks: (ECHA)

Test Type: mitotic recombination assay

Test system: Saccharomyces cerevisiae

Result: negative

Remarks: (ECHA)

Test Type: Ames test

Test system: mouse lymphoma cells

Result: positive

Remarks: (ECHA)

### **Carcinogenicity**

Classified based on available data. For more details, see section 2

### **Reproductive toxicity**

Classified based on available data. For more details, see section 2

### **Specific target organ toxicity - single exposure**

May cause respiratory irritation. - Respiratory system

Acute oral toxicity - If ingested, severe burns of the mouth and throat, as well as a danger of perforation of the esophagus and the stomach.

Acute inhalation toxicity - mucosal irritations, Cough, Shortness of breath,

Inhalation may lead to the formation of oedemas in the respiratory tract.,

Possible damages:, damage of respiratory tract, tissue damage

### **Specific target organ toxicity - repeated exposure**

The substance or mixture is not classified as specific target organ toxicant, repeated exposure.

### **Aspiration hazard**

No aspiration toxicity classification

---

## SECTION 12: Ecological information

### **Ecotoxicity**

#### **Toxicity to fish**

Remarks: No data available

#### **Components:**

#### **acetic acid:**

#### **Toxicity to fish**

LC50 (Oncorhynchus mykiss (rainbow trout)): > 1,000 mg/l End point: mortality Exposure time: 96 h Test Type: semi-static test Method: OECD

Test Guideline 203 GLP: yes

#### **Toxicity to daphnia and other aquatic invertebrates**

EC50 (Daphnia magna (Water flea)): > 1,000 mg/l End point: Immobilization Exposure time: 48 h Test Type: static test Analytical monitoring:

yes Method: OECD Test Guideline 202 GLP: yes

#### **Toxicity to algae/aquatic plants**

EC50 (Skeletonema costatum): > 1,000 mg/l Exposure time: 72 h Test Type: static test Method: ISO 10253 GLP: yes

#### **Toxicity to microorganisms**

EC5 (Pseudomonas putida): 2,850 mg/l Exposure time: 16 h Remarks: neutral (maximum permissible toxic concentration) (Lit.) EC50

(Photobacterium phosphoreum): 11 mg/l Exposure time: 15 min Test Type: microtox test Remarks: (IUCLID)

#### **Hydrochloric Acid:**

#### **Toxicity to fish**

LC50 (Gambusia affinis (Mosquito fish)): 282 mg/l Exposure time: 96 h Remarks: (IUCLID)

#### **Persistence and degradability**

#### **Biodegradability**

Remarks: No data available

## Components:

### acetic acid:

#### Biodegradability

Result: Readily biodegradable. Biodegradation: 99 % Exposure time: 30 d Method: OECD Test Guideline 301D Remarks: (HSDB) Result:  
Readily eliminated from water Biodegradation: 95 % Exposure time: 5 d Method: OECD Test Guideline 302B

#### Biochemical Oxygen Demand (BOD)

880 mg/g Incubation time: 5 d Remarks: (Lit.)

#### BOD/ThOD

76 % Remarks: (IUCLID)

## Hydrochloric Acid:

#### Biodegradability

Remarks: The methods for determining the biological degradability are not applicable to inorganic substances.

## Bioaccumulative potential

#### Bioaccumulation

Remarks: No data available

## Components:

### acetic acid:

#### Partition coefficient: noctanol/water

log Pow: -0.17 (25 °C) pH: 7 Method: (experimental) Remarks: Bioaccumulation is not expected. (ECHA)

## Hydrochloric Acid:

#### Partition coefficient: noctanol/water

Remarks: Not applicable for inorganic substances

## Mobility in soil

#### Stability in soil

Remarks: No data available

## Other adverse effects

## Components:

### acetic acid:

#### Results of PBT and vPvB assessment

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

## Hydrochloric Acid:

#### Results of PBT and vPvB assessment

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

#### Additional ecological information

May be harmful to aquatic organisms due to the shift of the pH. Do not empty into drains. Harmful effect due to pH shift. Discharge into the environment must be avoided.

---

## SECTION 13: Disposal considerations

### Disposal methods

#### Waste from residues

Offer surplus and non-recyclable solutions to a licensed disposal company.

---

## SECTION 14: Transport information

### International Regulations

#### IATA-DGR

UN/ID No. : UN 2920

Proper shipping name : Corrosive liquid, flammable, n.o.s.

(Hydrochloric Acid, acetic acid)

Class : 8

Subsidiary risk : 3

Packing group : II

Labels : Class 8 - Corrosive substances, Class 3 - Flammable liquids

Packing instruction (cargo aircraft) : 855

Packing instruction (passenger aircraft) : 851

#### IMDG-Code

UN number : UN 2920

Proper shipping name : CORROSIVE LIQUID, FLAMMABLE, N.O.S.

(Hydrochloric Acid, acetic acid)

Class : 8

Subsidiary risk : 3

Packing group : II

Labels : 8 (3)

EmS Code : F-E, S-C

Marine pollutant : no

### Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable for product as supplied.

National regulation GB 6944/12268

UN number : UN 2920

Proper shipping name : CORROSIVE LIQUID, FLAMMABLE, N.O.S.

(Hydrochloric Acid, acetic acid)

Class : 8

Subsidiary risk : 3

Packing group : II

Labels : 8 (3)

### **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.

---

## **SECTION 15: Regulatory information**

### **National regulatory information**

#### **Law on the Prevention and Control of Occupational Diseases**

#### **Regulations on Safety Management of Hazardous Chemicals**

#### **Catalogue of Hazardous Chemicals Identification of Major Hazard Installations for Hazardous Chemicals (GB 18218)**

Listed

#### **No. / Code Chemical name / Category Threshold quantity**

**W5.4 Flammable liquids 5,000 t**

#### **Hazardous Chemicals for Priority Management**

Listed under SAWS

#### **Regulations on Occupational Labor Protection in the at workplaces where**

#### **Toxic Substances Are Used**

#### **Catalogue of Highly Toxic Chemicals**

Not listed

#### **Regulation of Environmental Management on the First Import of Chemicals and the Import and Export of Toxic Chemicals**

#### **China Severely Restricted Toxic Chemicals for Import and Export**

Not listed

#### **Regulation on the Administration of Precursor Chemicals**

#### **Catalogue and Classification of Precursor Chemicals**

Not listed

---

## SECTION 16: Other information

### Full text of other abbreviations

#### ACGIH

USA. ACGIH Threshold Limit Values (TLV)

#### GBZ 2.1-2007

Occupational exposure limits for hazardous agents in the workplace - Chemical hazardous agents.

#### ACGIH / TWA

8-hour, time-weighted average

#### ACGIH / STEL

Short-term exposure limit

#### ACGIH / C

Ceiling limit

#### GBZ 2.1-2007 / PC-TWA

Permissible concentration - time weighted average

#### GBZ 2.1-2007 / PC-STEL

Permissible concentration - short term exposure limit

**GBZ 2.1-2007 / MAC AIC - Australian Invent Transport by Land of Bra bw - Body weight; CMR Standard of the German List (Canada); ECx - Conc associated with x%respo Chemical Substances (Jap response; ERG - Emerge GLP - Good Laboratory P cer; IATA - International Construction and Equipm Half maximal inhibitory c tion; IECSC - Inventory o tional Maritime Dangerou Industrial Safety and H Standardization; KECl - K tration to 50 % of a test (Median Lethal Dose); MA lution from Ships; n.o.s. No Observed (Adverse) E fect Level; NOELR - No Norm; NTP - National Toxi icals; OECD - Organizatio fice of Chemical Safety a and Toxic substance; PIC stances; (Q)SAR - (Quant (EC) No 1907/2006 of th Registration, Evaluation, Accelerating Decompositi Chemical Substance Inve Thailand Existing Chemica States); UN - United Nat Transport of Dangerous WHMIS - Workplace Hazar**  
Maximum allowable concentration ry of Industrial Chemicals

ANTT - National Agency for il

ASTM - American Society for the Testing of Materials

- Carcinogen, Mutagen or Reproductive Toxicant

DIN nstitute for Standardisation

DSL - Domestic Substances ntration associated with x% response

ELx - Loading rate se

EmS - Emergency Schedule

ENCS - Existing and New n)

ErCx - Concentration associated with x% growth rate cy Response Guide

GHS - Globally Harmonized System

actice

IARC - International Agency for Research on Canir Transport Association

IBC - International Code for the nt of Ships carrying Dangerous Chemicals in Bulk

IC50 ncentration

ICAO - International Civil Aviation Organiza- Existing Chemical Substances in China

IMDG - Interna- Goods

IMO - International Maritime Organization

ISHL alth Law (Japan)

ISO - International Organisation for Existing Chemicals Inventory  
LC50 - Lethal Concentration  
LD50 - Lethal Dose to 50% of a test population  
POL - International Convention for the Prevention of Pollution from Ships - Not Otherwise Specified  
NCh - Chilean Norm  
NO(A)EC - No Observed Effect Concentration  
NO(A)EL - No Observed (Adverse) Effect Loading Rate  
NOM - Official Mexican Nomenclature Program  
NZIoC - New Zealand Inventory of Chemicals for Economic Co-operation and Development  
OPPTS - Office of Pollution Prevention and Control  
PBT - Persistent, Bioaccumulative and Toxic - Philippines Inventory of Chemicals and Chemical Substances  
Structure Activity Relationship  
REACH - Regulation of the European Parliament and of the Council concerning the Restriction of Chemicals  
SADT - Self-Heating Temperature  
SDS - Safety Data Sheet  
TCSI - Taiwan Chemical Safety Information  
TDG - Transportation of Dangerous Goods  
TECS Inventory  
TSCA - Toxic Substances Control Act (United States)  
UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods  
vPvB - Very Persistent and Very Bioaccumulative  
GHS - Globally Harmonized System of Classification and Labelling of Chemicals  
Material Safety Data Sheet

**Disclaimer:**

The information in this MSDS is only applicable to the specified product, unless otherwise specified, it is not applicable to the mixture of this product and other substances. This MSDS only provides information on the safety of the product for those who have received the appropriate professional training for the user of the product. Users of this MSDS must make independent judgments on the applicability of this SDS. The authors of this MSDS will not be held responsible for any harm caused by the use of this MSDS.