

## Safety Data Sheet

### 1. Product and company identification

Product name : HYDROCHLORIC ACID 36%  
Name of manufacturer : KANTO CHEMICAL CO., INC.  
Address : 2-1, Nihonbashi, Muromachi 2-Chome, Chuo-Ku, Tokyo, 103-0022, Japan  
Name of section : Electronic materials division technical department  
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SDS No. : GE00238

### 2. Summary of danger and Hazard

#### GHS classification

##### Physical and chemical hazard

Flammable liquids : Out of category

Pyrophoric liquids : Out of category

Self-heating substances and mixtures  
: Out of category

Oxidizing liquids : Out of category

##### Human health hazard

Acute toxicity(oral) : Category 4

Acute toxicity(dermal)  
: Out of category

Acute toxicity(inhalation:dust, mists)  
: Category 2

Skin corrosion/irritation  
: Category 1A

Serious eye damage/eye irritation  
: Category 1

Respiratory sensitization  
: Category 1

Skin sensitization : Out of category

Specific target organ systemic toxicity(single exposure)  
: Category 1

Specific target organ systemic toxicity(repeated exposure)  
: Category 1

##### Environmental hazard

Hazardous to the aquatic environment-acute hazard  
: Category 1

Hazardous to the aquatic environment-chronic hazard  
: Out of category

Pictogram or symbol



Signal word : Danger

Hazard statement : Harmful if swallowed  
Fatal if inhaled  
Causes severe skin burns and eye damage  
Causes serious eye damage  
May cause allergy or asthma symptoms or breathing difficulties if inhaled  
Causes damage to organs (respiratory organs)  
Causes damage to organs (tooth, respiratory organs) through prolonged or repeated exposure  
Very toxic to aquatic life

Cautions

Safety measurements : Do not breathe dust, mist, and vapor.  
Use only in a well-ventilated area.  
Avoid release to the environment.  
Do not eat, drink or smoke when using this product.  
Wear appropriate protective gloves, glasses, clothing, face shield, or mask.  
Wash protective equipment thoroughly after use.  
Wash hands thoroughly after handling.

First-aid measures : If inhaled : Remove victim to fresh air and keep at rest in a position comfortable for breathing. Immediately get medical treatment.  
If swallowed: Rinse mouth, do not induce vomiting. Immediately get medical treatment.  
If in eyes : Rinse cautiously with water for several minutes. Get medical treatment.  
If on skin : Remove contaminated clothing and the substance. Immediately get medical treatment.  
If exposed, get medical treatment.  
Get medical treatment, if you feel unwell.  
Collect leakage

Storage : Tightly container closed and store in a well-ventilated area.  
Store locked up.

Disposal : Dispose of contents and containers appropriately in accordance with related regulations.

### 3. Composition/Information on ingredients

Substance/Mixture : Substance

Chemical name or commercial name

: Hydrochloric acid

Ingredients and composition

: Water solution contains 35.0-37.0% Hydrochloric acid

Chemical formula : HCl

CAS No. : 7647-01-0  
TSCA Inventory : Registered  
EINECS No. : 2315957  
Dangerous and hazardous ingredients  
: Hydrochloric acid

#### 4. First aid measures

Inhalation : Remove the victim to fresh air, and make him blow his nose and gargle. If necessary, get medical treatment.  
Skin contact : Wash the affected areas under running water.  
Eye contact : Wash the affected areas under running water for at least 15 minutes. Get medical treatment.  
Ingestion : Rinse mouth with water. Give the victim one or two glasses of water or milk. Do not induce vomiting. Get medical treatment as soon as possible.

#### Anticipated acute and delayed symptoms

: If inhaled hydrogen chloride vapor, cause irritation of throat, bronchi, and lungs, also cause pulmonary edema, inflammation of respiratory organs, and breathing difficulties.

#### 5. Fire fighting measures

Extinguishing media : This product is noncombustible.  
Prohibited extinguishing media  
: None  
Particular fire fighting : Move containers from fire area if it can be done without risk, if not possible, apply water from a safe distance to cool and protect surrounding area.

#### Protection for firefighters

: Firefighters should wear protective equipment.

#### 6. Accidental release measures

Cautions for personnel : Wear proper protective equipment and avoid contact with skin and inhalation of vapor. Conduct operations from upwind and evacuate people downwind. Keep away personnel except for authorized ones from spillage area by stretching ropes.  
Cautions for environment : Attention should be given to avoid discharge of spilled product into rivers and resulting environmental damage. When diluting spill with large amounts of water, discharge of untreated wastewater into the environment must be avoided.  
Removal measure : Absorb spill with diatomaceous earth or dry sand and place in container. Neutralize residue with calcium hydroxide solution or sodium carbonate solution and then flush with copious amounts of water.

#### 7. Cautions of handling and storage

##### Handling

Engineering measures : Wear proper protective equipment to avoid contact with skin or inhalation of vapor.

##### Cautions for safety handling

: Use with an enclosed system or a local exhaust ventilation. Use in well-ventilated areas.

Cautions : The substance is acidic. Avoid contact with alkaline substances.

Storage

Adequate storage condition : Store in a dark, cool place and tightly closed.

Safety adequate container materials : Glass, Fluorine resin, Polyethylene

The substance is highly corrosive. Do not use cast iron containers.

#### 8. Exposure control/Personal protection

Engineering measures : Use with an enclosed system or a local exhaust ventilation.

Control parameters

ACGIH(2015) : 2ppm(ceiling) (TLV-STEL)

Protective equipment

Respiration protective equipment : Chemical cartridge respirator with acids vapor cartage or airline respirator

Hands protective equipment : Acid resistant gloves

Eyes protective equipment : Safety goggles

Skin and body protective equipment : Protective clothing, protective boots

#### 9. Physical and chemical properties

Appearance : Liquid

Color : Colorless

Odor : Acrid odor

Odor threshold : 1-5ppm

pH : Strong acidity

Boiling point : Approx. 108°C(at 20%)

Melting point : Approx. -50°C

Flash point : Noncombustible

Auto-ignition point : Noncombustible

Explosion characteristics

Explosion limit : Noncombustible

Vapor pressure : 20hPa(20°C)

Density : 1.18g/cm<sup>3</sup> (20°C)

Solubility

Solubility in solvents : Water ; Miscible

log Pow : Not available

#### 10. Stability and reactivity

Stability : Stable under normal conditions.

Reactivity : May react with alkaine substances.

Incompatible conditions : Light, heat  
Incompatible materials : Alkaline substances  
Hazardous decomposition products  
: Chlorine, hydrogen chloride

#### 11. Toxicological information

Acute toxicity : Harmful if swallowed(category 4)  
Dermal : Out of category  
Inhalation(vapor) : Not possible to classify because of insufficient data.  
Fatal if inhaled(dust, mist)(category 2)  
rat oral LD50=900mg/kg  
mouse inhalation LC50=1108ppm/1H(mist)  
rabbit skin LD50>5010mg/kg

Skin corrosion/irritation : Causes severe skin burns and eye damage(category 1A)  
There are reports of cases that corrosivity was observed in rabbit skin irritation test with 1-4 hour exposure depending on concentration, that stimulation and ulcer accompanied by skin discoloration having occurred on mice and rats with 5-30 minute exposure, and that it also caused mild to serious stimulativeness, sore and burn in human skin.

Serious eye damage/eye irritation  
: Causes serious eye damage(category 1)  
A serious stimulus, damage, and corrosiveness is indicated for eye in a result of two or more animal (including a rabbit) examinations, and fear of permanent damage or loss of eyesight is indicated to be also in humans.

Respiratory sensitization or Skin sensitization  
: May cause allergy, asthma or breathing difficulties if inhaled (category 1).  
This substance is listed as a sensitizing substance for respiratory organs of occupational allergy by Japan Society of Occupational Allergy.  
There is a report that the postexposure bronchial spasms was caused by humans to the cleaning agents which included hydrogen chlorides and that asthmatic symptoms were still caused by slight stimulus one year later.

Skin sensitization : Out of category  
Negative at guinea pig experiment of Maximization test and mice Ear Swelling Test. As no one among 15 people had positive reaction to the test that was applied skin sensitization to them after 10-14 days, the classification is out of category.

Mutagenicity : Not possible to classify because of insufficient data.

Carcinogenic effects : Not possible to classify because of insufficient data  
IARC classifies it as group 3(not classifiable as to its carcinogenicity to humans).

Effects on the reproductive system  
: Not possible to classify because of insufficient data.

Specific target organ systemic toxicity single exposure

: Cause damage to organs (respiratory organs) (category 1)

The symptoms, such as dyspnea, laryngitis, bronchitis, bronchus contraction, and pneumonia, is presented by inhalation exposure in humans, and the upper airway edema, respiratory tract inflammations, necrosis, and a lung blister are reported.

Specific target organ systemic toxicity repeated exposure

: Cause damage to organs (tooth, respiratory organs) through prolonged or repeated exposure (category 1)

Several cases are reported that human repeated inhalation causes teeth damaging, and increases of frequency of a chronic bronchitis.

Aspiration hazard : Not possible to classify because of insufficient data.

## 12. Ecological information

Ecotoxicity

Fish toxicity : Very toxic to aquatic life (category 1)

Chronic aquatic toxicity : Out of category

Daphnia magna EC50=0.492mg/L/48H

Persistence and degradability

: Not available

Bioaccumulative potential : Not available

Mobility in soil : Not available

## 13. Disposal consideration

Residual disposal : Add alkali such as calcium hydroxide, sodium carbonate gradually to neutralize and then flush in a drain with a large amount of water. Or entrust approved waste disposal companies with the disposal.

Containers : In case of disposal of empty bottles, dispose bottles after removing the content thoroughly.

## 14. Transport information

UN class : Class 8 (Corrosive substances) P. G. II

UN number : 1789

Marine regulation information

UN No. : 1789

Proper shipping name : HYDROCHLORIC ACID

Class : 8

Sub risk : -

Packing group : II

Marine pollutant : P

Aviation regulation information

UN No. : 1789

Proper shipping name : Hydrochloric acid

Class : 8

Sub risk : -

Packing group : II

## 15. Regulatory information

Ensure this material in compliance with federal requirements and ensure conformity to local regulations.

## 16. Other information

### References

- Handbook of dangerous and hazardous chemicals, Japan Industrial Safety & Health Association. (2000-2001)
- Dangerous Properties of Industrial Materials, 6th ed. N. I. Sax Van Nostrand Reinhold Company (1984)
- Handbook of Dangerous Substances Springer-Verlag Tokyo (1991)
- Handbook of 16817 Chemical Products, The Chemical Daily Co. (2017)
- Handbook of Poisonous and Deleterious substances, revised and enlarged edition, Yakumu Kohosa (2000)

The information contained herein is based on several references and the present state of our knowledge. However the SDS does not always cover all information about the product, handle the product carefully. The information is intended to ordinary usage, in case of particular handlings, conduct appropriate safety measurements. The information herein is only provision of information, and it does not represent a guarantee the properties of the product. The Safety Data Sheet (SDS) is prepared based on JIS Z7253, and it has the same required elements on the Material Safety Data Sheet (MSDS) which is prepared based on JIS Z7250:2010.