บริษัท นิปปอน อินเตอร์เทรด จำกัด
58 ซอยสุขสวัสดิ์ 31/1 ถ.สุขสวัสดิ์ แขวงราษฎร์บูรณะ เขตราษฎร์บูรณะ กรุงเทพ 10140
โทร: 02 460 9266 แฟกซ์: 02 427 7707 มือถือ: 096 969 6928 เวปไซค์: www.npitrade.com อีเมล์: sales@npitrade.com

Section 1: Product and Company Information

1.1. Product identifier

Product Name	: Hydrochloric Acid
EC/EINECS	: 231-595-7
EC Annex 1 Index No.	: 017-002-00-2
RTECS No.	: MW4025000
Formula	: NaOCl
UN no.	: 1789
CAS No.	: 7647-01-0

1.2 Details of the supplier of the safety data sheet

Manufacturer/Supply	: บริษัท นิปปอน อินเตอร์เทรด จำกัด
Address	: 58 ซอยสุขสวัสดิ์ แขวงราษฎร์บูรณะ เขตราษฎร์บูรณะ กรุงเทพ 10140
Phone	: 02-460-9266
Fax	: 02-427-7707

1.3 Emergency telephone number

Emergency Phone : 096-969-6928

Section 2: Hazards Identification

Classification of Substance:

Corrosive to metals	Category 1
Acute Toxicity (Oral)	Category 4
Serious eye damage/eye irritation	Category 2A
Sensitization (Skin)	Category 1
Specific Target Organ Toxicity – Single exposure (nervous system, Respiratory)	Category 1
Specific Target Organ Systemic Toxicity (Repeated Exposure) (liver, scent organs, respiratory)	Category 1
Hazardous to Aquatic Environment (Chronic)	Category 1

Pictograms GHS:

Signal word : Danger

Hazard Statements:

May be corrosive to metals
Harmful if swallowed
Causes serious eye irritation
May cause an allergic skin react
Causes damage to nervous system, respiratory
Causes damage to respiratory, scent organs and liver through prolonged or repeated exposure.
Very toxic to aquatic life

Precautionary Statements:

Should be instructed before use.
Avoid contact or breathing the substance
Should wear a gloves, goggles, gas masks boot and chemical Protective cloths.
Use in the open. With good ventilation.
Avoid release to the environment
Do not use if you have not read or understand the safety precautions

Other hazards that do not result in classification: No data.

Section 3: Composition/Information on Ingredients

Identity of the chemical:

Chemical Name : Hydrochloric acid

Common Name : Hydrochloric Acid

Synonyms : Muriatic Acid

Molecular formula : HCl

Molecular mass : 36.500 g/mol

Ingredients :

Substance	CAS. No.	Content
Hydrochloric Acid	7647-01-0	35 %
Water	7732-18-5	65 %

Impurities and additives stable : No

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Section 4: First Aid Measures

Inhaled	Remove victim to fresh air and keep at rest in a position comfortable for breathing.
Skin contact	Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower for 20 minutes. Wash contaminated clothing before reuse.
Eyes	Rinse with plenty of water. Eyelid held wide. Allow water to flow through at least 20 minutes (do not use collyrium) led to a doctor immediately
Ingestion	rinse mouth, Do not induce vomiting Then immediately for medical attention.

Symptoms / significant impacts:

o Breathing : Irritate the nasal throat, respiratory distress

o Skin: skin irritation, rash, red skin burns.

o Ingestion: Burns of the mouth and digestive tract, nausea, vomiting, diarrhea, difficulty swallowing may be fatal.

o Eyes: Conjunctivitis, eye pain, severe burns.

Medical considerations must be made immediately, and care should be a major operation: Redness, bleeding nose. Inflammatory bowel disease Chronic bronchitis

Section 5: Fire Fighting Measures

Extinguishing media appropriate	: Use extinguishing media appropriate to around fire conditions Extinguishing inappropriate :
- Hazards caused by chemicals	: When exposed with metals to produce hydrogen gas which potentially explosive.

Special protective equipment and precautions for firefighters :

o Wear clothing, chemical protective clothing, masks contained compressed air breathing (SCBA)

o Combustible containers should be cooled with water spray to reduce the temperature. Do not spray water directly to the container.

Section 6 : Accidental Release Measures

Personal precautions:

o Evacuated from the area where the chemical leak. Should be in the windward direction.

o Do not touch this chemical directly.

o Do not inhale mist/vapor

o Isolate the hazard area and control to individuals who have personal protective equipment to access only.

o Provide adequate ventilation.

o Do not touch something that is contaminated with chemicals

Personal Protective Equipment:

o Wear protective clothing, Respirator and chemical resistant gloves.

Environmental precautions:

o Prevent entry into public water. Because this chemical affects the organisms in the water. This is dangerous because it can result in changes in the pH of the water.

Procedures and materials for storage and cleaning:

o Wear protective clothing, respiratory protective equipment with filter type acid vapor

o To ventilate the area where leakage.

o Container of chemical contamination must be plastic.

o Prepare bags and plastic tanks (with lid).

o The chemical contamination in a plastic bag off the bag strap. Then put it into plastic tanks lid and then use the tape off

o Tanks labeled "Chemical contamination from the accident," and disposal according to local requirements.

Section 7 : Handling and Storage

Precautions in handling:

o Container transport packaging must be sealed with a label.

o For use in areas with adequate ventilation

o Prevention of acid mist in the workplace.

o Avoid inhalation and direct contact.

Storage conditions :

o Keep container tightly closed in a well ventilated, dry and Away from substances that may react.

o Store away from heat, moisture, alcohol, acids, oxidizing metal cyanide sulfide.

o Containers must be corrosion resistant materials

o Do not eat or drink in the workplace.

Environmental precautions: Do not allow material to contaminate the environment

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Section 8 : Exposure Controls / Personal Protection

Parameters used to control exposure:

IDLH	50	ppm	(NIOSH 2012)
REL-C:	5	ppm	(NIOSH 2012)
PEL-C:	5	ppm	(OSHA 2012)
TLV-Ceiling:	2	ppm	(ACGIH 2012)

Engineering controls:

o Provide adequate ventilation

o Installation of Local exhaust

o Designed as a closed system Prevent chemical vapor.

Personal Protective Equipment:

Chemical-resistant gloves

Respirator (Prevent acid vapor)

Safety Glasses/Goggle

Chemical protective suit

face shield

Rule:

o Change contaminated clothing.

o Wash hands and face after working with substance before eating, smoking or using the toilet

o Do not eat or drink or smoke in the workplace.

Section 9 : Physical and Chemical Properties

1	Appearance	Clear and colorless liquid
2	Odor	Pungent
3	Odor threshold	No data
4	pH	< 0
5	melting point/freezing point	-20 to -30 o C
6	initial boiling point and boiling range	63.8 o C @ 101.3kPa
7	flash point	Incombustible
8	evaporation rate	< 1
9	flammability	Incombustible
10	upper/lower flammability or explosive limits(%, v/v) Lower Explosion Limit: No data Upper Explosion Limit : No data	
11	vapor pressure	100 mmHg (13.3 kPa) @ 20 o C
12	vapor density (Air = 1)	1.27
13	relative density (water = 1)	1.18 @ 30 o C
14	solubility(ies)	100 %
15	partition coefficient: n-octanol/water (Log Kow)	No data
16	auto-ignition temperature	Incombustible
17	decomposition temperature	No data
18	Viscosity	1.9 cP @ 20o C (0.0148 mP)

Section 10 : Stability and Reactivity

Reactivity:

o Reacts violently or explosive with Acetylene, Ether, Fluorine compounds,Terpentine, Alcohols, Ammonia and Alkaline (such as ; Sodium Hydroxide, Potassium Hydroxide)

Chemical stability:

o Stable under recommended storage conditions.

Possibility of hazardous reactions :

o Heat, humidity, sunlight, sparkle

Conditions to avoid :

o Metal when exposed to hydrogen gas that could explode

o Oxidizing agent, reducing agent and alkaline

Incompatible materials	: No data
Decomposition products are hazardous when mixed with water	: No data
Products of combustion	: No data
Hazardous products of decomposition	: No data

Section 11 : Toxicological Information

Acute Toxicity :

Rabbit (Oral)	LD50 (Rabbit)	900	mg/kg
Rat (Oral)	LC50 (Rat)	700	mg/kg
Rat (Inhale)	LC50 (Rat)	8,300	mg/m^3

Toxicological Information :Is not a carcinogenicity

Inhalation	Irritate the nose, throat, lungs, cough, sore throat, shortness of breath burns of mucosal tissue and causing pneumonia, upper respiratory tract is severely damaged
Skin	Burns, may be harmful if absorbed through the skin 3
Eye	Severe eye burns and blindness
Ingestion	Abdominal pain
Symptoms	Nausea, vomiting, headache, drowsiness, skin inflammation

Section 12 : Ecological information

Toxicity ecological:

Toxicity to fish; Mosquito fish LC50 : 282 mg/ l/ 96 hr.

Toxicity to Crustacea Daphnia magna EC50 : 0.492 mg/ l/ 48 hr

Residues and ability to biodegradation:: Cannot biodegradable

Potential for bioaccumulation: Not bioaccumulation

Mobility in soil: No data

Other impacts: This substance is very toxic to aquatic organisms in water

Section 13 : Disposal considerations

Dispose	: Cleaned with water and neutralized with sodium carbonate.
Package	: Cleaned containers to dispose of the waste.

Section 14 : Transport information

UN number	: 1789
Name of Transportation of the United Nations	: Hydrochloric Acid
Hazard Class for transport	: 8
Packaging Group (If any)	: II

Label :

Marine pollution	: No data
Transport with a large container	: L4BN
Special precautions	: No data

Section 15 : Regulatory information

Laws / regulations of Thailand

o Hazardous Substances Act. B.E. 2535

Ministry of Industry Identify the types of hazardous materials: type 3 (Ministry of Industry Department of Fisheries)

Ministry of Industry Notice The transportation of hazardous materials overland B.E. 2546

Department of Transport announcement The text labeling and marking of hazardous materials trucks B.E.2543

o Ministerial Regulation on the Prescribing Of Standard for Administration and Management of Occupational Safety, Health and Environment working with hazardous chemicals B.E. 2556

Label :

o NFPA:

o GHS:

Section 16 : Other information

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Date of preparation of safety data sheets: May 14, 2018

Reference:

1. The National Institute for Occupational Safety and Health(NIOSH):NIOSH Pocket Guide to Chemical Hazards http://www.cdc.gov/niosh/npg/npgdcas.html

2. United Nations Recommendations on the Transport of Dangerous Goods (UNRTDG)
http://www.unece.org/trans/danger/publi/unrec/rev14/English/05E_Index.pdf

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