Kuehne COMPANY
86 North Hackensack Avenue, South Kearny, New Jersey 07032-4673
Phone: (973) 589-0700
Fax: (973) 589-4866

SAFETY DATA SHEET

(This SDS follows the GHS format)

HYDROCHLORIC ACID

(32% by volume)

SDS NUMBER: **KCC – HCL - 001**

SDS DATE: **September 26, 2016**

24 HOUR EMERGENCY PHONE NUMBER: **(973) 589-0700**
Alt. (551) 200-2751
CHEMTREC – (800) 424-9300

SECTION 1 – CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name: Hydrochloric Acid

Chemical Name: Hydrochloric Acid

CAS Number: 7647-01-0

Common Names: Hydrogen Chloride, Muriatic Acid, Chlorohydric Acid

Chemical Formula: HCl

Company:
Kuehne Chemical Company, Inc.
86 North Hackensack Avenue
South Kearny, New Jersey 07032-4673
(973) 589-0700 Fax: (973) 589-4866

Manufacturer:
Kuehne Chemical Company, Inc.
86 North Hackensack Avenue
South Kearny, New Jersey 07032-4673
(973) 589-0700 Fax: (973) 589-4866

SECTION 2 – HAZARD(S) IDENTIFICATION

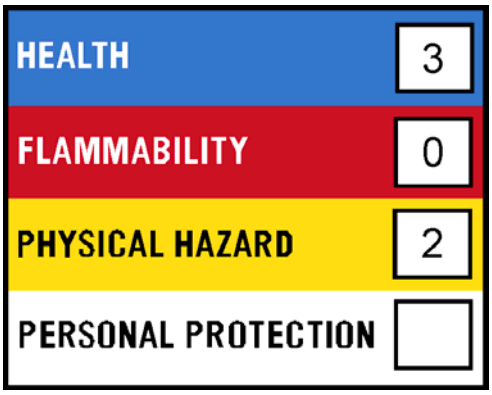
Category 1

Symbol:

Signal Word: Danger

Hazard Statements: May be corrosive to metals
Causes severe skin burns and eye damage
Causes severe eye damage
May cause respiratory irritation
Harmful if swallowed

HMIS HAZARD RATINGS



Based on Nat'l Paint & Coatings Association HMIS system.

NFPA HAZARD RATINGS

Chemical not listed. Ratings based on NFPA guidelines

Effects of Exposure

Acute: Inhalation – Symptoms include burning, choking, coughing, wheezing, laryngitis, shortness of breath, headache or nausea. May cause chemical burns to the respiratory tract, leading to sore throat, coughing, shortness of breath and delayed lung edema. High concentrations may cause damage to mucous membranes and lungs, causes corrosive action of the mucous membranes. Exposure to the mist and vapor may erode exposed teeth.

Eyes – Symptoms include eye burns, watering eyes. Permanent damage to cornea may result, forms corneal burns with dangers of vision impairment or blindness. Corrosive to eyes, contact can cause corneal burns and result in permanent irreversible injury. Contact may cause painful sensitization to light. Liquid contact is corrosive to the eyes and causes severe burns. Vapor or mist may cause irritation and severe burns.

Skin – Symptoms include burning, itching, redness, inflammation and/or swelling of exposed tissues. Harmful if absorbed through skin, forms blisters, ulceration and chemical burns to the skin. Contact may cause skin sensitization, an allergic reaction, which becomes evident upon re-exposure to this material. Liquid contact is corrosive and causes severe burns and ulceration. Vapor causes severe irritation and may cause burns at high concentrations.

Ingestion – Symptoms include burning, choking, nausea, vomiting and severe pain. May cause chemical burns to the mouth, gullet and gastrointestinal tract, severe swelling, severe damage to the delicate tissue and danger of perforation, diarrhea, and permanent tissue destruction to the gastrointestinal tract, can cause itching, cough and chemical burns to the respiratory tract, circulatory system failure and possible death.

Precautionary Statements:

Prevention:

Use only outdoors or in a well ventilated area
Avoid breathing dust/fume/gas/mist/vapors/spray
Wash hands thoroughly after handling
Wear protective gloves/protective clothing/eye protection/face protection.
Keep only in original container.
Immediately call a POISON CENTER or doctor/physician

Response:

If Inhaled - Remove victim to fresh air and keep at rest in a position comfortable for breathing.
If Swallowed - Rinse mouth. Don NOT induce vomiting.
If In Eyes - Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists, get medical advice/attention.
If On Skin (or hair) - Remove immediately all contaminated clothing. Wash contaminated clothing before re-use. Rinse skin with water/shower. Immediately call a poison center or doctor/physician.
Spill - Absorb spillage to prevent material damage.

Storage:

Store in a well ventilated place. Keep container tightly closed. Store locked up. Store in corrosive resistant polypropylene container with a resistant inner liner. Store in a dry place

Disposal:
Dispose of contents/container to an approved waste disposal plant and in accordance with applicable local, state, and federal regulations.

Chronic: Repeated exposure may affect liver or cause bleeding of nose and gums, nasal and oral mucosal ulceration, conjunctivitis, yellowing of teeth and erosion of tooth enamel, dermatitis, photosensitization and possible blindness.

Appearance: Clear, colorless to slightly or pale yellow liquid

Routes of Entry

Inhalation: May cause chemical burns to the respiratory tract, leading to sore throat, coughing, shortness of breath and delayed lung edema. High concentrations may cause damage to mucous membranes and lungs, causes corrosive action of the mucous membranes. Exposure to the mist and vapor may erode exposed teeth.

Eye Contact: Corrosive to eyes, contact can cause corneal burns and result in permanent irreversible injury. Contact may cause painful sensitization to light. Liquid contact is corrosive to the eyes and causes severe burns. Vapor or mist may cause irritation and severe burns.

Skin: Contact may cause skin sensitization, an allergic reaction, which becomes evident upon re-exposure to this material. Liquid contact is corrosive and causes severe burns and ulceration. Vapor causes severe irritation and may cause burns at high concentrations.

Ingestion: Swallowing can result in nausea, vomiting, diarrhea, abdominal pain and permanent tissue destruction to the gastrointestinal tract, circulatory system failure and possible death.

Target Organs: Mucous membranes, Skin, Eyes and Cardiovascular System
Single exposure – Respiratory system
Repeated exposure – Kidney, liver

Sensitizing Capabilities: None known.

Reproductive Effects: None known.

Cancer Information: None known.

Synergistic Materials: None known.

Medical Conditions Aggravated by Exposure: None known.

SECTION 3 – COMPOSITION AND INFORMATION ON INGREDIENTS

CAS Number	Name	Common Names
7732-18-5	Water	Water

Percentage
VOL: ND
WT: 68%

Exposure Limits
PEL: Not Established
TLV: Not Established
STEL: Not Established
IDLH: Not Established

CAS Number	Name	Common Names
7647-01-0	Hydrogen Chloride	Hydrochloric Acid, Muriatic Acid

Percentage
VOL: ND
WT: 32%

Exposure Limits
PEL: 5 ppm Ceiling
TLV: 2 ppm
STEL: 5 ppm
IDLH: 50 ppm

SECTION 4 – FIRST AID MEASURES

Inhalation: Move to fresh air. Keep Patient warm and comfortable. Remove contaminated clothing and loosen remaining clothing. In case of shortness of breath, give oxygen. Apply artificial respiration only if patient is not breathing. No mouth to mouth or mouth to nose resuscitation. **SEEK MEDICAL ATTENTION IMMEDIATELY.**

Eyes: Irrigate eyes extensively (at least 30 minutes). Remove contact lenses, if present and easy to do. Continue rinsing. Do NOT allow victim to rub or keep eyes closed. Do NOT use oils or ointments in eye. **SEEK MEDICAL ATTENTION IMMEDIATELY.**

Skin: Wash skin with soap and water for at least 15 minutes while removing contaminated clothing and shoes. Treat corrosive burns on the skin as thermal burns. **SEEK MEDICAL ATTENTION IMMEDIATELY.**

Ingestion: If victim is conscious and alert, rinse mouth with plenty of water and give 2-4 glasses of milk or water. Use of gastric lavage or emesis is contraindicated. Do not induce vomiting. In case of spontaneous vomiting, be sure that vomit can freely drain because of danger of suffocation. Keep patient warm and at rest, in case of shortness of breath, give oxygen. **SEEK MEDICAL ATTENTION IMMEDIATELY.**

Note to Physician

Treat symptomatically. Treat corrosive burns on the skin as thermal burns. Do NOT use sodium bicarbonate to neutralize the acid. Do NOT use oils or ointments in eye. Airway problems may arise from laryngeal edema and inhalation exposure. Treat with 100% oxygen initially. Possible perforation of stomach or esophagus should be investigated.

SECTION 5 – FIRE-FIGHTING MEASURES

Flash Point:	Non-Flammable
Auto-ignition Temperature:	Non-Flammable
Flammable Limits in Air - % by Volume - Upper:	Non-Flammable
Lower:	Non-Flammable
Sensitivity to Mechanical Impact:	Not sensitive
Sensitivity to Static Discharge:	Not sensitive

Extinguishing Media

Non-Flammable/ Non-Combustible, if involved in a fire use:
Regular dry chemical, carbon dioxide, fine water spray, regular foam, dry agent (carbon dioxide, dry chemical powder)
Do not use a high volume jet.

Fire Fighting Procedures

Material can react violently with water (spattering and misting). Do not breathe fumes, decomposes on heating emitting toxic fumes, fight fire from safe location. Wear self-contained breathing apparatus and acid-resistant clothing, including eye protection and boots. Containers close to fire should be removed immediately or cooled with water, keep away from common metals. Do not allow contaminated extinguishing water to enter the soil, groundwater or surface waters.

Fire and Explosion Hazard

Thermal decomposition releases toxic and corrosive gas (Hydrogen chloride, Chlorine). Reaction with metal (Aluminum, Tin, Lead, and Zinc) produces flammable/explosive hydrogen gas. Heating can cause expansion or decomposition leading to violent rupture of containers.

SECTION 6 – ACCIDENTAL RELEASE MEASURES

Steps to be Taken if Material is Released or Spilled

Slippery when spilt. Evacuate all unnecessary and unprotected personnel and keep people away from and upwind of spill/leak. Follow protective measures provided under Personal Protection in Section 8. Do not breathe vapor or fumes. Shut off the source of the leak if conditions are safe.

Ventilation Requirements

Evacuate and ventilate the area. Work up wind or increase ventilation.

Environmental Precautions

As per 40 CFR 302 Table 302.4 (CERCLA), environmental releases that exceed the RQ must be reported to the National Response Center by calling 800-424-8802 (202-426-2675) and the State Emergency Response Commission and the Local Emergency Planning Committee (40 CFR 355.40) as appropriate.

Contain liquids and prevent discharges to streams, sewers, or soil, control or stop the loss of volatile materials to the atmosphere. Large leaks may require environmental consideration and possible evacuation. Do not apply water to the leak. Spills or releases should be reported, if required, to the appropriate local, state and federal agencies.

Contain spill with dike to prevent entry into sewers or waterways.
CAUTION: This product may react strongly with bases and water.

Methods for Cleaning Up

Neutralize with lime or soda ash, absorb neutralized spill with vermiculite or other inert absorbent material. Collect and seal in properly labelled suitable containers or drums for disposal. Wash area down with excess water. All clean-up material should be removed for proper treatment or disposal. Dispose of waste in accordance with local regulations. Spills on other than pavement (e.g. dirt or sand) may be handled by removing the affected soil and placing in approved containers.

SECTION 7 – HANDLING AND STORAGE

Handling Precautions

Provide adequate ventilation. Do not breathe dust, vapor, mist, or gas. Do not get in eyes, on skin, or on clothing. Do not ingest. Keep container closed when not in use. Keep out of reach of children. Wear protective gloves/protective clothing/eye protection/face protection. Wash thoroughly after handling. Remove contaminated clothing and wash before reuse.

Addition to water releases heat which can result in violent boiling and splattering. Always add slowly and in small amounts. Never add water to acids; always add acids to water.

Storage

Store locked up, tightly closed in a dry, cool and well-ventilated place out of direct sunlight and away from foodstuffs, check regularly for leaks. Provide a catch-tank and an impermeable corrosion-resistant floor with drainage to a neutralization tank. Protect containers from heat, physical damage, ignition sources and incompatible materials. Contents may develop pressure upon prolonged storage. Separate acids from bases; separate oxidizer acids from organic acids. Keep away from oxidizing agents, alkalis, finely divided metals.

Suitable packaging material: Vulcanized or rubber coated steel, plastic drum, reinforced polyester, polyvinyl chloride, polyethylene, polypropylene, polytetrafluoro ethylene PTFE (Teflon), glass, porcelain.

Non suitable packaging material: Stainless steel, aluminum, galvanized, or light metals and alloys.

Do Not Reuse Containers

Containers, even when empty, will retain residue and vapors.

SECTION 8 – EXPOSURE CONTROLS AND PERSONAL PROTECTION

Engineering Controls

Local exhaust ventilation or other engineering controls are normally required when handling or using this product to avoid overexposure.

Specific Personal Protective Equipment

Respiratory: NIOSH approved air purifying respiratory equipment with replaceable acid gas cartridges with a dust/mist filter may be required to avoid overexposure when handling this product or if exposure limits are exceeded or irritation or other symptoms are experienced.

Eye: Chemical safety goggles or safety glasses with side shields and a face shield for splash protection. Have an eye wash station available.

Skin: Elbow-length natural latex, butyl rubber, nitrile, or neoprene impervious gloves and chemical resistant apron or equivalent chemical impervious outer garment. Wear closed rubber boots. Provide quick-drench showers and washing facilities accessible to areas of use and handling.

Other: Always wash hands with mild soap and water before smoking, eating, drinking, using the toilet, and when leaving work. Promptly remove contaminated clothing. Wash contaminated clothing and other protective equipment before storage or re-use. Have supplies and equipment for neutralization and running water available.

SECTION 9 – PHYSICAL AND CHEMICAL PROPERTIES

Physical State:	Liquid, fuming
Appearance:	Clear, colorless to slightly or pale yellow liquid
Odor:	Strong, pungent, irritating acidic
Odor Threshold:	1-5 ppm
pH:	< 1, strong acid
Freezing/Melting Point:	-35 °C (-31 °F)
Boiling Point:	81.5-110 ºC
Flash Point:	Not applicable
Evaporation Rate:	2.00 (*n*-butyl acetate=1)
Flammability:	Not applicable
Explosive Limits:	Not applicable
Vapor Pressure:	35 mmHg, 125 mbar, 160 mmHg, 15 mmHg at 20 °C
Vapor Density:	1.267 (air = 1)
Specific Gravity:	1. 1885 at 20 °C (H_2O = 1)
Solubility in Water:	Completely soluble.
Partition Coefficient: n-octanol/water	No Data
Auto-ignition:	Not applicable

Decomposition: Not available

Viscosity: 1.7 mm^2/s at 20 ºC

Molecular Weight: 36.46

SECTION 10 – STABILITY AND REACTIVITY

Conditions Contributing to Instability
Stable under normal conditions. Corrosive to many metals with the liberation of extremely flammable hydrogen gas.
Reactivity: Mildly reactive, reacts with alkalis. Reacts with oxidizing agents and sodium hypochlorite liberating toxic chlorine gas. Exothermic reaction with incompatible materials.
Stable under recommended storage conditions.
Avoid mechanical shock, extremes of temperature and direct sunlight, exposure to moist air or water. Uncontrolled addition of water. Excess heat, reaction with water is exothermic.

Incompatibility
Incompatible with strong bases and alkalis, strong oxidizing agents, sodium hypochlorite, cyanides, and many metals, avoid contact with foodstuffs, carbonates and other alkaline materials, salts of oxyhalogenic acids, semimetallic hydrogen compounds, and semimetallic oxide.

Reacts With: Acetic anhydride, Aldehydes, Alkanolamines, Amines, Azides, Carbides, Chlorates, Copper, Fluorine, Hydrides, Hydroxides, Isocyanates, Metal oxides, Moisture, Nitrates, Nitrites, Organic material, Perchlorates, Permanganate, Peroxides, Phosphorus, Picrates, Sulfides, Sulfites, Sulfuric acid, Water, Water-reactive materials, Vinylmethyl ether, Zinc iodide

Hazardous Decomposition Products: Carbon dioxide, Carbon monoxide, Chlorine gas, Hydrogen chloride gas, Hydrogen gas. Contact with metals may evolve flammable hydrogen gas.

Hazardous Polymerization: Will not occur.

SECTION 11 – TOXICOLOGICAL INFORMATION

CAS Number	Name	Common Names
7647-01-0	Hydrogen Chloride	Hydrochloric Acid, Muriatic Acid

Acute Inhalation LC_{50}:	(rat)	3124 ppm (V) / 1 h
Acute Oral LD_{50}:	(rat)	700-900 mg/kg
Acute Dermal LD_{50}:	(rabbit)	> 5010 mg/kg
Acute Inhalation LDL:	(rabbit)	4413 ppm/30M
Acute Inhalation LDL:	(human)	1300 ppm/30M
Acute Oral LDL:	(man)	2857 µg/kg

SECTION 12 – ECOLOGICAL INFORMATION

Toxic to aquatic forms - 280ppm in fresh water and 100ppm in salt water

Fish:	LC_{50} (24 hr.)	(Fish)	20.5 mg/L(pH: 3.2-3.5)
	LC_{50} (96 hr.)	(Gambusia affinis)	282 mg/L
Invertebrates:	LC_{50} (72 hr.)	(Daphnia Magna)	56 mg/L
	EC_{50} (72 hr.)	(Fresh water algae)	0.73 mg/L

Amphibians: No data available.

Plants: No data available.

Terrestrial Ecotox Data

Wildlife: No data available.

Plants: No data available.

Environmental Fate Data

Plants: No data available.

BOD: No data available.

Abiotic: No data available.

Biodegradation: High water solubility. Hydrochloric acid dissociates in and lowers the pH of water. It will be neutralized by naturally alkalinity of surface water. This product has an indirect photo-oxidation in the atmosphere with a half-life of 11 days.

Persistence: Evaporates into atmosphere, dissolves in water and is neutralized slowly by natural alkalinity.

Bio concentration: This material is not expected to bio concentrate in organisms.

In high concentrations, this product may be dangerous to plants and/or wildlife. Prevent contamination of soil, drains or surface water, use appropriate containment method to avoid environmental contamination. Do not empty into drains. This product is fatal to aquatic life due to pH shift.

This material is expected to have high mobility in soil. It absorbs weakly to most soil types. Upon transport through the soil, hydrochloric acid with dissolve some of the soil materials (especially those with carbonate bases) and the acid will neutralize the some degree.

Acidic substance leading to a lower pH, however, pH will increase rather quickly because of dilution until an ecological neutral product is obtained.

SECTION 13 – DISPOSAL CONSIDERATIONS

Waste Disposal Method

Empty containers must be decontaminated. Dispose of in accordance with all government and local regulations. Refer to Waste Management Authority. Dispose of material through a licensed waste contractor. Decontamination and destruction of containers should be considered. Dispose in accordance with all applicable Federal, State and Local regulations.

Product Disposal

If discarded, this product is considered a RCRA corrosive waste, D002.

SECTION 14 – TRANSPORT INFORMATION

DOT Proper Shipping Name:	Hydrochloric Acid
DOT Hazard Class:	8 (Corrosive)
DOT ID Number:	UN1789
DOT Packing Group:	II

DOT Hazardous Substance: RQ 5,000 Lb. (Hydrochloric Acid)

DOT Marine Pollutant: Not Applicable

Additional Description: Not Applicable

Marine Transport
Classified as Dangerous Goods by the criteria of the International Maritime Dangerous Goods Code (IMDG Code) for transport by sea; DANGEROUS GOODS.

Air Transport
Classified as Dangerous Goods by the criteria of the International Air Transport Association (IATA) Dangerous Goods Regulations for transport by air; DANGEROUS GOODS.

SECTION 15 – REGULATORY INFORMATION

U.S. Federal Regulations

OSHA: Standard 29 CFR 1910.1200 requires that information be provided to employees regarding the hazards of chemicals by means of a hazard communication program including labeling, safety data sheets, training and access to written records.

To aid our customers in complying with regulatory requirements, SARA Title III Hazard Categories for this product are indicated below. If the word "YES" appears next to any category, this product may be reportable by you under the requirements of 40.CFR.370. Please consult those regulations for details.

TSCA (Toxic Substances Control Act): All components of this product that are required to be on the TSCA inventory are listed on the inventory.

CERCLA and SARA/Title III:

Hazard Categories		
	Immediate (Acute) Health:	YES
	Reactive Hazard:	YES
	Delayed (Chronic) Health:	NO
	Fire Hazard:	NO
	Sudden Release of Pressure:	NO

Other Regulations/Standards

California Proposition 65: This product does not contain any Proposition 65 chemicals

SECTION 16 – OTHER INFORMATION

SDS Legend:

ACGIH	American Conference of Governmental Industrial Hygienists
CAS	Chemical Abstracts Service Registry Number
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CEILING	Ceiling Limit (15 Minutes)
DOT	U.S. Department of Transportation
IARC	International Agency for Research on Cancer
IDLH	Immediately dangerous to life and health
N/A	Not Available
NIOSH	The National Institute for Occupational Safety and Health
NTP	National Toxicology Program
OSHA	Occupational Safety and Health Administration
PEL	Permissible Exposure Limit (OSHA)
ppm	Parts per million
RCRA	Resource Conservation and Recovery Act
REL	Recommended Exposure Limit
SARA	Superfund Amendments and Reauthorization Act
STEL	Short Term Exposure Limit (15 Minutes)
TLV	Threshold Limit Value (ACGIH)
TSCA	Toxic Substances Control Act
TWA	Time Weighted Average (8 Hours)

Prepared By: Kuehne Company's Environmental, Safety & Security Department
Revision 0 – 26 September 2017

The information contained herein is offered only as a guide to the handling of this specific material and has been prepared in good faith by technically knowledgeable personnel. It is not intended to be all-inclusive and the manner and conditions of use and handling may involve other and additional considerations. No warranty of any kind is given or implied and Kuehne Chemical Company, Inc. will not be liable for any damages, losses, injuries or consequential damages that may result from the use of or reliance on any information contained herein.

REFERENCES:

- American National Standard, Z400.1-1993
- Pamphlet 150 Recommended Practices for Handling Hydrochloric Acid in Cargo Tanks Edition 3 April 2014
- Pamphlet 163 Hydrochloric Acid Storage and Piping Systems Edition 3 October 2011
- National Institute for Occupational Safety and Health, US Dept. of Health & Human Services, Cincinnati, 1994.
- Supplier's Safety Data Sheets
- Windholz, Martha, Ed, The Merck Index, 11th ed., Merck and Co, Inc., Rahway, New Jersey, 1989.