1.0 Chemical Identity		
1.1	Product Name	Hydrochloric Acid
	Synonyms	Muriatic Acid; Chlorohydric Acid; Hydrogen Chloride in aqueous solution
	Formula	HCl
	Product code	LC15220
1.2	Recommended Use and Restrictions	
	Use of substance	For laboratory and manufacturing use
	Recommended use	Laboratory chemicals
	Restrictions on use	Not for food, drug or household use
1.3	Company Information	
		Name: Al Kout Industrial Projects , Kuwait **Plant:** Salt & Chlorine Plant, Shuaiba, Kuwait **Company's Post Box No.:** 10277, Shuaiba-65453, Kuwait **Tel No.:** 00-(965)-22283726 Intercom: 3726, 3725 **Fax No.:** 00-(965)- 22284043 **Company's Emergency Phone No:** 00-(965)-, 23261029, 97216020, 99794511
1.4	Emergency Telephone Number	00-(965)-, 23261029, 97216020

2.0 Hazards Identification		
2.1	Classification of the Substance or Mixture	
GHS US Classification		
Skin corrosion / irritation	H315	Causes Skin Irritation
Serious eye damage / eye irritation Category 2A	H319	Causes Serious eye irritation
Full text of H statements : see section 16		
2.2	Label Elements	
GHS US Labeling		
Hazard Pictograms (GHS – US) :  		
Single Word (GHS-US) :Warning Hazard Statements (GHS-US) :H315 – Causes Skin Irritation :H319 – Cause Serious eye irritation Precautionary Statements (GHS – US) :P264 - Wash exposed skin thoroughly after handling P280 - Wear protective gloves, eye protection P302+P352 - IF ON SKIN: Wash with plenty of soap and water P305+P351+P338 - If in eyes: Rinse cautiously with water for several minutes. P332+P313 - If skin irritation occurs: Get medical advice/attention P337+P313 - If eye irritation persists: Get medical advice/attention P362 - Take off contaminated clothing and wash it before reuse		
2.3	Other Hazards	
Other hazards not contributing to the classification : None		
2.4	Unknown acute toxicity (GHS US)	
Not Applicable		

3.0 Composition/ Information on ingredients	
3.1	Substances
Not Applicable	
3.2	Mixtures

	Water	(CAS-No.) 7732-18-5 68 %
	Hydrogen Chloride	(CAS-No.) 7647-01-0 32 %
	Finished product specification	Hydrochloric Acid 32%
	Chemical Analysis	
	PARAMETERS	Specification
	Appearance	Colourless
	Specific Gravity	1.156 --- 1.160
	Temperature C	22 --26
	Hydrochloric Acid (at above temp) wt %	32.0 --- 33.0
	Hydrocholoric Acid (at above temp) G / L	369 -- 382
	Free chlorine (Cl2) ppm , max	2.0
	Iron contents (Fe3+) ppm , max	1.0
	Details of ingredients that could be released from the product in Excess of the PEL value	
	Fumes of HCl gas evolves from HCl acid- evolved gas concentration depending on quantity of acid exposed to air.	

4.0 First Aid Measures

4.1. Description of first aid measures	
Inhalation	May be fatal if inhaled. May cause severe irritation of the respiratory trac with sore throat, coughing, shortness of breath and delayed lung edema. Causes chemical burns to the respiratory tract. Causes corrosive action on the mucous membranes. If inhaled, get medical aid immediately. Remove victim to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen.
Skin	Contact with liquid is corrosive and causes severe burns and ulceration. The severity of injury depends on the concentration of the solution and th duration of exposure. In case of contact, immediately flush skin with plen of water for at least 15 minutes while removing contaminated clothing an shoes. Get medical aid immediately. Wash clothing before reuse
Eyes	May cause irreversible eye injury. Vapor or mist may cause irritation and severe burns. Contact \with liquid is corrosive to the eyes and causes severe burns. In case of contact, immediately flush eyes with plenty of water for a t least 15 minutes. Get medical aid immediately.
Ingestion	Causes severe digestive tract burns with abdominal pain, vomiting, and possible death. May cause corrosion and permanent tissue destruction o the esophagus and digestive tract. If swallowed, do NOT induce vomiting Get medical aid immediately. If victim is fully conscious, give a cupful of water. Never give anything by mouth to an unconscious person.
4.2. Most important symptoms and effects (acute and delayed)	
Symptoms/effects after inhalation	Possible inflammation of the respiratory tract.
Symptoms/effects after skin contact	Causes skin irritation.
Symptoms/effects after eye contact	Causes serious eye irritation.
Symptoms/effects after ingestion	Nausea. Vomiting.
Chronic symptoms	Affection/discolouration of the teeth.
4.3. Immediate medical attention and special treatment, if necessary	
Obtain medical assistance.	

5.0 Fire Fighting Measures

5.1	Suitable Extinguishing Media	Foam. Dry powder. Carbon dioxide. Water spray. Sand

	Unsuitable Extinguishing Media	Do not use a heavy water stream
5.2	Specific hazards arising from the chemical	Fire Hazard : Not Flammable Explosion hazard : Not applicable
5.3	Special protective equipment and precaution for fire –fighters	Use Water spray or Fog for cooling containers. Exercise caution when fighting any chemical fire . Prevent fire –fighting water from entraining environment .

6.0 Accidental Release Measures

6.1. Personal precautions, protective equipment and emergency procedures	
General measures	Try to stop release. Dike and contain spill.
6.1.1. For non-emergency personnel	
Protective equipment	Gloves. Safety glasses.
Emergency procedures	Evacuate unnecessary personnel.
6.1.2. For emergency responders	
Protective equipment	Equip cleanup crew with proper protection.
Emergency procedures	Ventilate area.
6.2. Environmental precautions	
Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters.	
6.3. Methods and material for containment and cleaning up	
Methods for cleaning up	Soak up spills with inert solids, such as clay or diatomaceous earth as soon as possible. Collect spillage. Store away from other materials.
6.4. Reference to other sections	
See Heading 8. Exposure controls and personal protection.	

7.0 Handling and Storage

7.1. Precautions for safe handling	
Precautions for safe handling	Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Provide good ventilation in process area to prevent formation of vapor.
Hygiene measures	Wash exposed skin thoroughly after handling.
7.2. Conditions for safe storage, including any incompatibilities	
Storage conditions	Keep only in the original container in a cool, well ventilated place away from : incompatible materials. Keep container closed when not in use.
Incompatible products	Strong bases. metals. cyanides.
Packaging materials	Do not store in corrodible metal.

8.0 Exposure Controls/Personal Protection

8.1. Control parameters

Hydrochloric Acid (7647-01-0)

ACGIH	ACGIH Ceiling (mg/m³)	2.98 mg/m³
ACGIH	ACGIH Ceiling (ppm)	2 ppm
OSHA	OSHA PEL (Ceiling) (mg/m³)	7 mg/m³
OSHA	OSHA PEL (Ceiling) (ppm	5 ppm
IDLH	US IDLH (ppm)	50 ppm
NIOSH	NIOSH REL (ceiling) (mg/m³)	7 mg/m³

NIOSH	NIOSH REL (ceiling) (ppm	5 ppm

Water (7732-18-5)

Not applicable

8.2. Appropriate engineering controls

Appropriate engineering controls	Emergency eye wash fountains should be available in the immediate vicinity of any potential exposure.

8.3. Individual protection measures/Personal protective equipment

Personal protective equipment:
Gloves. Safety glasses.

Hand protection:
Wear protective gloves
Eye protection:
Chemical goggles or safety glasses
Skin and body protection:
Wear suitable protective clothing
Respiratory protection:
Respiratory protection not required in normal conditions
Other information:
Do not eat, drink or smoke during use.

9.0 Physical and Chemical Properties

Physical state : Liquid
Color : Colorless
Odor : Irritating, Pungent
Odor threshold : No data available
pH : 1
Melting point : No data available
Freezing point : No data available
Boiling point : No data available
Flash point : No data available
Relative evaporation rate (butyl acetate=1) : No data available
Flammability (solid, gas) : Non flammable.
Vapor pressure : No data available
Relative vapor density at 20 °C : No data available
Relative density : No data available
Specific gravity / density : 1
Molecular mass : 36.46 g/mol
Solubility : Soluble in water. Soluble in ethanol. Soluble in methanol.
Log Pow : No data available
Auto-ignition temperature : No data available
Decomposition temperature : No data available
Viscosity, kinematic : No data available
Viscosity, dynamic : No data available
Explosion limits : No data available
Explosive properties : Not applicable.
Oxidizing properties : None.

9.2. Other information

No additional information available

10.0 Stability and Reactivity

10.1	Chemical Stability	Stable under normal temperatures and pressures
10.2	Incompatibilities with other metals	Metals, strong oxidizing agents, strong reducing agents, bases, acetic anhydride, alcohols, amines, sulfuric acid, vinyl acetate, epoxides (e.g. butyl glycidyl ether), chlorosulfonic acid, carbides, beta-propiolactone, ethyleneimine, propylene oxide, lithium silicides 2-aminoethanol, 1,1-difluoroethylene, magnesium boride, mercuric sulfate, aldehydes, cyanides, sulfides, phosphides.
10.3	Hazardous Decomposition Products	Hydrogen chloride, chlorine, hydrogen gas

11.0 Toxicological Information

11.1. Information on toxicological effects	
Likely routes of exposure	Skin and eye contact
Acute toxicity	Not classified
Hydrochloric Acid (7647-01-0)	
LD50 oral rat	700 mg/kg
LD50 dermal rabbit	5010 mg/kg
ATE US (oral)	700 mg/kg body weight
ATE US (dermal)	5010 mg/kg body weight
Water (7732-18-5)	
LD50 oral rat	≥ 90000 mg/kg
ATE US (oral)	90000 mg/kg body weight
Skin corrosion/irritation	Causes skin irritation. pH: 1
Serious eye damage/irritation	Causes serious eye irritation. pH: 1
Respiratory or skin sensitization	Not classified
Germ cell mutagenicity	Not classified Based on available data, the classification criteria are not met
Carcinogenicity	Not classified
Hydrochloric Acid (7647-01-0)	
IARC group	3 - Not classifiable
Reproductive toxicity	Not classified Based on available data, the classification criteria are not met
Specific target organ toxicity – single exposure	Not classified
Specific target organ toxicity – repeated exposure	Not classified
Aspiration hazard	Not classified
Potential Adverse human health effects and symptoms	Based on available data, the classification criteria are not met.
Symptoms/effects after inhalation	Possible inflammation of the respiratory tract.
Symptoms/effects after skin contact	Causes skin irritation.
Symptoms/effects after eye contact	Causes serious eye irritation.
Symptoms/effects after ingestion	Nausea. Vomiting.
Chronic symptoms	Affection/discolouration of the teeth.

12.0 Ecological Information

12.1. Toxicity	
Hydrochloric Acid (7647-01-0)	
LC50 fish 1	282 mg/l (LC50; 96 h)
EC50 Daphnia 1	< 56 mg/l (EC50; 72 h)
12.2. Persistence and degradability	

Hydrochloric Acid, 0.1N (0.1M)	
Persistence and degradability	Not established
Hydrochloric Acid (7647-01-0)	
Persistence and degradability	Biodegradability: not applicable. No test data on mobility of the components available.
Biochemical oxygen demand (BOD)	Not Applicable
Chemical oxygen demand (COD)	Not Applicable
Hydrochloric Acid (7647-01-0)	
ThOD	Not Applicable
Water (7732-18-5)	
Persistence and degradability	Not established
12.3. Bioaccumulative potential	
Hydrochloric Acid, 0.1N (0.1M)	
Bioaccumulative potential	Not established
Hydrochloric Acid (7647-01-0)	
Log Pow	0.25 (QSAR)
Bioaccumulative potential	Low Potential for bioaccumulation (Log Kow < 4)
Water (7732-18-5)	
Bioaccumulative potential	Not established.
12.4. Mobility in soil	
Hydrochloric Acid (7647-01-0)	
Ecology - soil	May be harmful to plant growth, blooming and fruit formation.
12.5. Other adverse effects	
Effect on the global warming	No known effects from this product.
GWPmix comment	No known effects from this product.
Other information	Avoid release to the environment.

13.0 Disposal Considerations

13.1	Whatever cannot be saved for recovery or recycling should be handled as hazardous waste and sent to a KEPA approved waste facility. Processing, use or contamination of this product may change the waste management options.. Dispose of container and unused contents in accordance with KEPA requirements, if any.

14.0 Transport Information

14.1	UN No	1789
14.2	IMCO Class	8
14.3	Packaging group	II
14.4	ADR/RID classification code	C1
14.5	ADR/RID Hazard number	80

15.0 Regulatory Information

15.1	SARA 302/304/311/312 Extremely Hazardous Substances	Hydrochloric acid
15.2	SARA 313 Toxic Chemical Notification and release reporting	Hydrochloric acid
15.3	CERCLA Hazardous Substances	Hydrochloric acid (5000 lbs – RQ)
15.4	OSHA- Hazardous by definition of Hazard Communication Standard	FR 1910:1200
15.5	Hydrochloric Acid	CAS-No. 7647-01-0

16.0 Other Information		
16.1	Packing	Jerry cans, Industrial Bulk Containers (IBC's) and Tankers
16.2	Disclaimer	Information contained in this material data sheet is believed to be reliable but no representation, guarantee or warranties of any kind are made as to its accuracy, suitability for a particular application or results to be obtained from them. It is upto the manufacturer/seller to ensure that the information contained in the material safety data sheet is relevant to the product manufactured / handled or sold by him as the case may be. The AIP Co. makes no warranties expressed or implied in respect of the adequacy of this document for any particular purpose.

Full text of H-Phrases

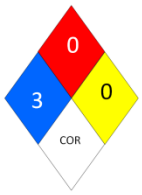
H302	Harmful if swallowed
H314	Causes severe skin burns and eye damage
H315	Cause skin irritation
H318	Cause serious eye damage
H319	Cause serious eye irritation
H335	May cause respiratory irritation
H402	Harmful to aquatic life

NFPA health hazard : 3 - Materials that, under emergency conditions, can cause serious or permanent injury.

NFPA fire hazard : 0 - Materials that will not burn under typical dire conditions, including intrinsically noncombustible materials such as concrete, stone, and sand.

NFPA reactivity : 1 - Materials that in themselves are normally stable but can become unstable at elevated temperatures and pressures.

Hazard Rating



Health : 3 Serious Hazard - Major injury likely unless prompt action is taken and medical treatment is given

Flammability : 0 Minimal Hazard - Materials that will not burn

Physical : 0 Minimal Hazard - Materials that are normally stable, even under fire conditions, and will NOT react with water, polymerize, decompose, condense, or self-react. Non-Explosives.

Personal protection : H

H - Splash goggles, Gloves, Synthetic apron, Vapor respirator

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.