SAFETY DATA SHEET

Hydrochloric Acid 20 Bé

SECTION 1: IDENTIFICATION

Product identifier used on a label:	**Hydrochloric Acid 20 Bé**
Product code:	
Recommended use of the chemical and restrictions on use:	Industrial, manufacturing.
Chemical family:	Inorganic acid.
Name, address and phone # of supplier:	Aqua Bond Inc. PO Box 63635 Toronto, ON, M1V 5K2 (416) 754-7211
24 Hr. Emergency phone #	**CANUTEC (613) 996-6666**

SECTION 2: HAZARDS IDENTIFICATION

Classification of the chemical: This material is classified as hazardous under U.S. OSHA regulations (29CFR 1910.1200) (Hazcom 2012) and Canadian WHMIS regulations (Hazardous Products Regulations) (WHMIS 2015).

Hazard classification:
CORROSIVE TO METALS- CATEGORY 1
SKIN CORROSION/IRRITATION- CATEGORY 1B
SERIOUS EYE MADAGE/EYE IRRITATION- CATEGORY 1
STOT-SE (respiratory system)- CATEGORY 3

Label elements:



Signal word: Danger

Hazard statements:
H290 May be corrosive to metals.
H314 Causes severe skin burns and eye damage.
H335 May cause respiratory irritation.

Precautionary statements:
P234 Keep only in original container.
P261 Avoid breathing mists, vapours or spray.
P264 Wash skin thoroughly after handling.
P271 Use only outdoors or in a well-ventilated area.
P280 Wear protective gloves, protecting clothing, eye protection, face protection.
P301+P330+P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P303+P361+P353 IF ON SKIN (or hair): Remove/take off immediately all contaminated clothing. Rinse skin with water. Shower.
P304+P340+P310 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Immediately call a POISON CENTER or doctor/physician.
P305+351+P338+P310 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

Immediately call a POISON CENTER or doctor/physician.
P363 Wash contaminated clothing before reuse.
P390 Absorb spillage to prevent material damage.
P403+P233 Store in a well-ventilated place. Keep container with a resistant inner liner.
P405 Store locked up.
P406 Store in corrosive resistant HDPE container.
P501 Dispose of contents/ container to an approved waste disposal plant.

Other hazards: None identified.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Pure substance/ mixture: Mixture

Ingredient name	**CAS Number**	**Concentration (%)**
Hydrochloric acid	7647-01-0	30-33
Water	7732-18-5	67-70

SECTION 4: FIRST-AID MEASURES

Description of first aid measures:

Ingestion: Get medical attention immediately. Call a poison center or physician. Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter lungs. Never give anything by mouth to an unconscious person. If unconscious, place in a recovery position and get medical attention immediately. Maintain an open airway.

Inhalation: Get medical attention immediately. Call a poison center or physician. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If it is suspected that mists are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway.

Skin contact: Remove contaminated clothing and shoes. Wash skin thoroughly with water. Get medical attention immediately.

Eye contact: Get medical attention immediately. Call a poison center or physician. Check for and remove any contact lenses. Immediately flush eyes with running water for at least 30 minutes, keeping eyelids open. Chemical burns must be treated promptly by a physician.

Most important symptoms and effects, both acute and delayed:

Causes burns by all exposure routes. Product is a corrosive material. Possible perforation of stomach or esophagus should be checked. Ingestion causes severe swelling and damage to tissue.

Indication of any immediate medical attention and special treatment needed:
No specific treatment. Treat symptomatically.

SECTION 5: FIRE-FIGHTING MEASURES

Extinguishing media:	
Suitable	Use appropriate fire extinguishing media suitable for surrounding fires. Cool containers with water and do not let water get into the sewer. This product is not flammable.
Unsuitable	None known.
Special hazards arising from the substance:	Releases flammable hydrogen gas when reacting with metals.
Hazardous thermal decomposition products:	Thermal decomposition can lead to release of irritating gases and vapours.
Special protective actions for fire-fighters:	Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.
Special protective equipment for fire-fighters:	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA).

SECTION 6: ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures:	No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Do not breathe vapour or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
Environmental precautions:	Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Any release to the environment may be subject to reporting requirements under federal/provincial or local regulations.
Methods and materials for containment and cleaning up:	Neutralize the spill with soda ash (sodium carbonate) or lime. Absorb the spill with non-combustible absorbent material (vermiculite), then place in a container to dispose. Clean the surface with water to remove any residual contamination. Dispose of waste and cleanup in accordance with all local regulations.
Special spill response procedures:	In case of transportation accident, contact CANUTEC (613) 996-6666.

SECTION 7: HANDLING AND STORAGE

Precautions for safe handling:	Put on appropriate personal protective equipment. Avoid exposure to any mists or fumes. Do not handle until all safety precautions have been read

	and understood. Do not get in eyes or on skin or clothing. Do not breathe vapour or mist. Do not ingest. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Use caution when adding this material to water.
Conditions for safe storage:	Store in a segregated and approved area. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials, food and drink. Store locked up. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.
Incompatible materials:	Metals. Alkaline substances.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters:

Exposure limits

Ingredient	**Exposure limits**
Hydrochloric acid	**ACGIH** TLV: ceiling 2 ppm; ceiling 2.98 mg/m^3 **OSHA** PEL: Ceiling 5 ppm; ceiling 7 mg/m^3 **NIOSH** REL: Ceiling 5 ppm; ceiling 7 mg/m^3
Engineering controls:	Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep vapour concentrations below any lower explosive limits. Provide eyewash stations and quick drench showers accessible to areas of use and handling.
Individual protection measures:	Eyes/face: Chemical splash goggles and face shield. Skin: Chemical-resistant, impervious gloves (neoprene, nitrile, butyl rubber or PVC) complying with an approved standard should be worn at all times. Personal protective equipment for the body should be selected based on the task being performed. Respiratory: Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator. If workers are exposed to concentrations above the exposure limit, they must use appropriate, certified respirators. Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Colourless.
Odour:	Pungent.
Odour threshold:	Not applicable
pH:	<1
Melting point:	Not applicable
Freezing point:	Not applicable
Initial boiling point and boiling range:	110°C (230°F)
Flash point:	Not flammable.
Evaporation rate:	Not available.
Flammability:	Not flammable.
Upper and lower flammability limits:	Not applicable.
Vapour pressure:	28 mm Hg @20°C
Vapour density:	1.2
Density:	1.14 – 1.16
Solubility:	Soluble in water.
Partition coefficient n-octanol/water:	Not available.
Auto-ignition temperature:	Not available.
Decomposition temperature:	Not available.
Viscosity:	Same as water

SECTION 10: STABILITY AND REACTIVITY

Reactivity:	Reacts violently with strong alkaline substances.
Chemical stability:	The product is stable.
Possibility of hazardous reactions:	Hazardous polymerization will not occur.
Conditions to avoid:	Avoid contact with incompatible materials.
Incompatible materials:	Acids, amines, alkalis, metals, reducing agents, oxidizing agents.
Hazardous decomposition products:	Chlorine gas.

SECTION 11: TOXICOLOGICAL INFORMATION

Information on the likely routes of exposure:	SKIN AND EYES: yes INHALATION: yes INGESTION: yes
Potential health effects (acute):	EYE: Causes serious eye damage. Adverse symptoms may include pain, burns, redness and itching. INHALATION: Causes shortness of breath, coughing, burning sensation, and headache. SKIN: Causes severe burns. Symptoms include redness, burns, itching. INGESTION: Causes burns to gastrointestinal tract, nausea, vomiting, pain,

	severe diarrhea.
Delayed and immediate effects, chronic effects from short and long term exposure:	Product is a corrosive material. Possible perforation of stomach or esophagus should be investigated: Ingestion causes severe swelling, severe damage to the delicate tissue and danger of perforation. Permanent blindness may occur.
Potential chronic health effects:	No information available.
Carcinogenicity:	Not listed as a carcinogen under OSHA, ACGIH or IARC.
Mutagenicity:	No information available.
Teratogenicity:	No information available.
Developmental effects:	No information available.
Fertility effects:	Not suspected of damaging fertility.
Sensitization:	No information available.

Toxicological effects:

Acute toxicity:

Product	Result	Species	Dose	Exposure
Hydrochloric acid	LD50 dermal	Mouse	1449 mg/kg	-
	LD50 oral	Rat	700 mg/kg	-
	LC50 inhalation	Mouse	0.4 mg/L	4 hours

Irritation/corrosion: Causes severe skin burns and eye damage.

Specific target organ toxicity single exposure: Causes respiratory irritation.

Specific target organ toxicity repeated exposure: No information available.

Aspiration hazard: No data available.

SECTION 12 ECOLOGICAL INFORMATION

Toxicity

Name	Result	Species	Exposure
Hydrochloric acid	LC50 20.5mg/L	Freshwater fish, Lepomis macrochirus	96 hours

Persistence and degradability Readily biodegradable

Bioaccumulative potential Not bioaccumulative.

Mobility in soil: Will likely be mobile in the environment due to its water solubility.

SECTION 13: DISPOSAL CONSIDERATIONS

Disposal methods: The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and nonrecyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling

emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

SECTION 14: TRANSPORT INFORMATION

	TDG
UN Number:	UN1789
UN proper shipping name:	HYDROCHLORIC ACID
Transport hazard class:	8
Packing group:	II
Environmental hazard:	No.
Special precautions for user:	**Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

SECTION 15: REGULATORY INFORMATION

Canada inventory (DSL): All components are listed.

SECTION 16: OTHER INFORMATION

Revision date: January 27, 2023
ATE = Acute Toxicity Estimate
BCF = Bioconcentration Factor
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
IATA = International Air Transport Association
IBC = Intermediate Bulk Container
IMDG = International Maritime Dangerous Goods
LogPow = logarithm of the octanol/water partition coefficient
MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
UN = United Nations
TWA: Time Weighted Average over 8 hours of work.
TLV: Threshold Limit Value over 8 hours of work.
REL: Recommended Exposure Limit
PEL: Permissible Exposure Limit
STEL: Short Term Exposure Limit during x minutes.
IDLH: Immediately Dangerous to Life or Health
WEEL: Workplace Environmental Exposure Levels
CEIL: Ceiling

Disclaimer

While the information and recommendations set forth are believed to be accurate as of data hereof, Aqua Bond Inc., makes no warranty with respect thereto and disclaims all liability from reliance thereon.