SAFETY DATA SHEET

SDS00791
HYDROCHLORIC ACID 22 BE (INHIB MURHIB)

Preparation Date: 14/May/2019 Version: 2

1. IDENTIFICATION

Product identifier

Product Name HYDROCHLORIC ACID 22 BE (INHIB MURHIB)

Other means of identification

SDS Number SDS00791

Synonyms Muriatic acid; hydrogen chloride, aqueous.

Recommended use of the chemical and restrictions on use

Recommended Use Acidizing of petroleum wells, boiler scale removal, pickling & metal cleaning, chemical intermediate, ore reduction and pH control.

Restricted Uses No information available

Initial Supplier Identifier
Univar Canada Ltd.
9800 Van Horne Way
Richmond, BC V6X 1W5
Telephone: 1-866-686-4827

Emergency telephone number

24 Hour Emergency Phone Number (CANUTEC): 1-888-226-8832 (1-888-CAN-UTEC)

2. HAZARD IDENTIFICATION

Hazardous Classification of the substance or mixture

Corrosive to metals	Category 1
Acute toxicity - Oral	Category 4
Acute toxicity - Inhalation (Gases)	Category 4
Skin corrosion/irritation	Category 1
Sub-category A	
Serious eye damage/eye irritation	Category 1
Specific target organ toxicity (single exposure)	Category 3

Label elements

Hazard pictograms

Signal Word: Danger

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

Precautionary Statements

Prevention
Wear protective gloves/protective clothing/eye protection/face protection
Wash face, hands and any exposed skin thoroughly after handling
Do not eat, drink or smoke when using this product
Do not breathe dust/fume/gas/mist/vapors/spray
Use only outdoors or in a well-ventilated area

Response
Specific treatment (see first aid instructions on label)
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): Take off immediately all contaminated clothing. Rinse skin with water or shower
Wash contaminated clothing before reuse
IF INHALED: Remove person to fresh air and keep comfortable for breathing
IF SWALLOWED: Immediately call a POISON CENTER or doctor

Storage
Store locked up
Store in a well-ventilated place. Keep container tightly closed

Disposal
Dispose of contents/container to an approved waste disposal plant

Unknown acute toxicity No information available

3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance

Chemical Name	CAS No	Weight-%	Synonyms

Hydrogen Chloride Anhydrous	7647-01-0	15 - 40%	Hydrogen Chloride Anhydrous

Notes:
The actual percentage concentration has been withheld as a trade secret.

4. FIRST AID MEASURES

Description of first aid measures

General advice
Show this safety data sheet to the doctor in attendance. Immediate medical attention is required. IF exposed or concerned: Get medical advice/attention.

Inhalation
Remove to fresh air. If breathing has stopped, give artificial respiration. Get medical attention immediately. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. If breathing is difficult, (trained personnel should) give oxygen. Delayed pulmonary edema may occur.

Eye contact
Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Keep eye wide open while rinsing. Do not rub affected area. Remove contact lenses, if present and easy to do. Continue rinsing. Get immediate medical advice/attention.

Skin contact
Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Get immediate medical advice/attention.

Ingestion
Do NOT induce vomiting. Clean mouth with water and drink afterwards plenty of water. Never give anything by mouth to an unconscious person. Get immediate medical advice/attention.

Self-protection of the first aider
Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination. Avoid contact with skin, eyes or clothing. Avoid direct contact with skin. Use barrier to give mouth-to-mouth resuscitation. Wear personal protective clothing (see section 8).

Most important symptoms and effects, both acute and delayed:
Corrosive Causes burns to the mouth, throat and stomach. Corrosive to the respiratory passage. Causes vomiting, nausea, and diarrhea. Concentrated vapor, mist or splashed liquid can cause severe irritation, burns and permanent blindness. Low concentrations of vapor or mist (10 - 35 ppm) can be immediately irritating and result in redness. Recognition odor in air is 10 ppm. Vapor or mist at 35 ppm cause irritation of the throat, in the 50 to 100 ppm range can cause severe nasal irritation, sore throat, choking, coughing and difficulty breathing. Prolonged exposures can cause burns and ulcers to the nose and throat. Even brief exposures at 1000 to 2000 ppm can cause a life-threatening accumulation of fluid in the lungs called pulmonary edema. Symptoms of pulmonary edema such as shortness of breath may be delayed for 48 hours after exposure.

Indication of any immediate medical attention and special treatment needed:

Note to physicians
Treatment based on sound judgment of physician and individual reactions of patient.

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media
Use extinguishing media appropriate for surrounding fire.

Specific hazards arising from the substance or mixture
Containers exposed to intense heat from fires should be cooled with water to prevent vapor pressure build-up which could result in container rupture. Reacts with metals to generate flammable hydrogen gas. Use water spray or fog to reduce or direct vapors.

Hazardous combustion products
When heated to decomposition, emits toxic hydrogen chloride fumes and will react with water or steam to produce heat and toxic and corrosive fumes. Thermal oxidative decomposition produces toxic chlorine fumes and explosive hydrogen gas.

Special protective equipment and precautions for fire-fighters
Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Use personal protection equipment.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Attention! Corrosive material. Avoid contact with skin, eyes or clothing. Ensure adequate ventilation. Use personal protective equipment as required. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak.

Environmental precautions

Prevent further leakage or spillage if safe to do so. Should not be released into the environment. Do not allow to enter into soil/subsoil. Prevent product from entering drains.

Methods and materials for containment and cleaning up

Prevent further leakage or spillage if safe to do so.

7. HANDLING AND STORAGE

Precautions for safe handling

Corrosive. For industrial use only. Handle and open containers with care. Avoid contact with eyes, skin and clothing. Do not ingest. Avoid inhalation of chemical. Empty containers may contain hazardous product residues. Keep the containers closed when not in use. Protect against physical damage. Use appropriate personnel protective equipment. When diluting, add this product to water in small amounts to avoid spattering. Never add water to this material. When opening metal containers, use non-sparking tools because of possibility of the presence of hydrogen gas.

Conditions for safe storage, including any incompatibilities

Store in a cool, dry, well ventilated area, away from heat and ignition sources. Store in accordance with good industrial practices. Keep away from direct sunlight. Protect against moisture, water and physical damage. Store in corrosive resistant container with a resistant inner liner.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure Limits .

Chemical Name	Alberta OEL	British Columbia OEL	Ontario	Quebec OEL	Exposure Limit - ACGIH	Immediately Dangerous to Life or Health - IDLH
Hydrogen Chloride Anhydrous 7647-01-0	Ceiling: 2 ppm Ceiling: 3 mg/m^3	Ceiling: 2 ppm	CEV: 2 ppm	Ceiling: 5 ppm Ceiling: 7.5 mg/m^3	2 ppm Ceiling	50 ppm

Consult local authorities for recommended exposure limits

Appropriate engineering controls

Engineering controls
Local exhaust ventilation as necessary to maintain exposures to within applicable limits.

Individual protection measures, such as personal protective equipment

Eye/face protection
Chemical goggles; also wear a face shield if splashing hazard exists.

Hand protection
Appropriate chemical resistant gloves should be worn. Neoprene gloves. Rubber gloves.

Skin and body protection
Apron, coveralls and/or other resistant protective clothing. Impervious boots. The selection of personal protective equipment varies depending upon conditions of use. A chemical protective full-body encapsulating suit and respiratory protection may be required in some operations.

Respiratory protection
If airborne concentrations exceed the Occupational Exposure Limit, use a NIOSH/MSHA approved full facepiece respirator with acid gas cartridges. Warning: Air purifying respirators do not protect workers in oxygen-deficient atmospheres. Under conditions immediately dangerous to life or health, or emergency conditions with unknown concentrations, use a full-face positive pressure air-supplied respirator equipped with an emergency escape air supply unit or use a self-contained breathing apparatus unit.

General hygiene considerations
Avoid contact with skin, eyes or clothing. Wear suitable gloves and eye/face protection. Do not eat, drink or smoke when using this product. Remove and wash contaminated clothing and gloves, including the inside, before re-use. Contaminated work clothing should not be allowed out of the workplace. Regular cleaning of equipment, work area and clothing is recommended. Wash hands before breaks and immediately after handling the product.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Appearance

Physical state	Fuming Liquid
Color	Colorless to Slight Yellow
Odor	Pungent SHARP
Odor threshold	No information available

PROPERTIES	Values	Remarks • Method
pH	For HCL solutions: 0.1(1.0 N), 1.1 (0.1 N), 2.02 (0.01 N)	
Melting point / freezing point	-35 °C / -31 °F	@ 31.5%
Initial boiling point/boiling range	108 °C / 226 °F	@ 20.2% HCl
Flash point	No data available	None known
Evaporation rate	No data available	None known
Flammability (solid, gas)	No data available	None known
Flammability Limit in Air		

Upper flammability limit:	No data available	
Lower flammability limit:	No data available	
Vapor pressure	13.3 kPa (100 mm Hg) at 20 °C (36%)	
Relative vapor density	1.268 @ 20 °C	
Specific Gravity	1.178 - 1.187 @ 16°C	
Water solubility	Soluble in water Soluble in alcohol.	
Solubility in other solvents	No data available	
Partition coefficient	No data available	
Autoignition temperature	No data available	None known
Decomposition temperature	No data available	None known
Kinematic viscosity	2 centipoise (Dynamic)	
Dynamic viscosity	No data available	None known
Explosive properties	No information available.	
Oxidizing properties	No information available.	
Molecular weight	No information available	
VOC Percentage Volatility	No information available	
Liquid Density	No information available	
Bulk density	No information available	

10. STABILITY AND REACTIVITY

Reactivity/Chemical Stability
Stable

Possibility of hazardous reactions
No additional remark.

Hazardous polymerization
Will not occur. Reaction with some incompatible materials (such as aldehydes, expoxides) can cause polymerization.

Conditions to avoid
Direct sunlight. Heat.

Incompatible materials
Large amounts of heat can be generated when concentrated acid is mixed with water or organic solvents. Very corrosive to most metals, producing flammable hydrogen gas. Reacts violently with bases to produce heat. Reacts with reducing agents to produce heat, fire and flammable hydrogen gas. Reacts with oxidizing agents to produce heat and toxic or corrosive chloride gases. Contact with explosives may cause detonation. Reacts with cyanides to produce toxic cyanide gas, and sulphides to produce toxic hydrogen sulphide gas.

Hazardous decomposition products
When heated to decomposition, emits toxic hydrogen chloride fumes and will react with water or steam to produce heat and toxic and corrosive fumes. Thermal oxidative decomposition produces toxic chlorine fumes and explosive hydrogen gas.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Inhalation
Harmful if inhaled. Corrosive to the respiratory passage. Recognition odor in air is 10 ppm. Vapor or mist at 35 ppm cause irritation of the throat, in the 50 to 100 ppm range can cause severe nasal irritation, sore throat, choking, coughing and difficulty breathing. Prolonged exposures can cause burns and ulcers to the nose and throat. Even brief exposures at 1000 to 2000 ppm can cause a life-threatening accumulation of fluid in the lungs called pulmonary

edema. Symptoms of pulmonary edema such as shortness of breath may be delayed for 48 hours after exposure.

Eye contact
Corrosive. Concentrated vapor, mist or splashed liquid can cause severe irritation, burns and permanent blindness. Low concentrations of vapor or mist (10 - 35 ppm) can be immediately irritating and result in redness.

Skin contact
Corrosive. Contact with liquid can cause severe irritation, burns, and permanent scarring or even death. Vapor or mist may cause redness, irritation and burns if contact is prolonged.

Ingestion
Corrosive. Harmful if swallowed. Causes burns to the mouth, throat and stomach. Causes vomiting, nausea, and diarrhea.

Information on toxicological effects

Symptoms
Pre-existing eye, skin and respiratory disorders may be aggravated by exposure to this product. Repeated and prolonged exposure to low concentrations of mist or vapor can cause discoloration and damage to tooth enamel, bleeding of the nose and gums, and chronic bronchitis and gastritis. Repeated exposure to low concentrations of liquid, mist or vapor can cause redness, swelling and pain (dermatitis).

Numerical measures of toxicity

Acute toxicity

The following values are calculated based on chapter 3.1 of the GHS document .

Unknown acute toxicity No information available

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
Hydrogen Chloride Anhydrous 7647-01-0	238 - 277 mg/kg (Rat) 700 mg/kg (Rat)	> 5010 mg/kg (Rabbit)	= 1.68 mg/L (Rat) 1 h 3124 ppm , gas (Rat)

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Skin corrosion/irritation
Corrosive. Contact with liquid can cause severe irritation, burns, and permanent scarring or even death. Vapor or mist may cause redness, irritation and burns if contact is prolonged.

Serious eye damage/eye irritation
Corrosive. Concentrated vapor, mist or splashed liquid can cause severe irritation, burns and permanent blindness. Low concentrations of vapor or mist (10 - 35 ppm) can be immediately irritating and result in redness.

Respiratory or skin sensitization
No information available.

Germ cell mutagenicity
No information available.

Carcinogenicity
Classification based on data available for ingredients.

The table below indicates whether each agency has listed any ingredient as a carcinogen.

Chemical Name	ACGIH	IARC	NTP	OSHA
Hydrogen Chloride Anhydrous 7647-01-0	Not available	Group 3	Not available	X

Legend
IARC (International Agency for Research on Cancer)

Group 3 - Not Classifiable as to Carcinogenicity in Humans
OSHA (Occupational Safety and Health Administration of the US Department of Labor)
X - Present

Reproductive toxicity
No information available.

Specific target organ systemic toxicity - single exposure
May cause respiratory irritation.

Specific target organ systemic toxicity - repeated exposure
No information available.

Aspiration hazard
No information available.

12. ECOLOGICAL INFORMATION

Ecotoxicity
The environmental impact of this product has not been fully investigated.

Chemical Name	Ecotoxicity - Freshwater Algae Data	Ecotoxicity - Fish Species Data	Toxicity to microorganisms	Crustacea
Hydrogen Chloride Anhydrous 7647-01-0	Not available	282 mg/L LC50 (Gambusia affinis) 96 h static	Not available	Not available

Persistence and degradability No information available.

Bioaccumulation No information available.

Chemical Name	Partition coefficient
Hydrogen Chloride Anhydrous 7647-01-0	Not available

Other adverse effects No information available.

13. DISPOSAL CONSIDERATIONS

Waste treatment methods

Dispose of in accordance with local regulations. Dispose of waste in accordance with environmental legislation.

Do not reuse empty containers.

14. TRANSPORT INFORMATION

TDG (Canada):

UN Number	UN1789
Shipping name	HYDROCHLORIC ACID
Class	8
Packing Group	II
Marine pollutant	Not available.

DOT (U.S.)

UN Number	UN1789
Shipping name	HYDROCHLORIC ACID
Class	8
Packing Group	II
Marine pollutant	Not available

15. REGULATORY INFORMATION

Safety, health and environmental regulations/legislation specific for the substance or mixture

U.S. Regulatory Rules

Chemical Name	CERCLA/SARA - Section 302:	SARA (311, 312) Hazard Class:	CERCLA/SARA - Section 313:
Hydrogen Chloride Anhydrous - 7647-01-0	Listed	Listed	Listed

International Inventories

TSCA	All components of this product are either on the Toxic Substances Control Act (TSCA) Inventory List or exempt.
DSL/NDSL	All components of this product are either on the Domestic Substances List (DSL), the Non-Domestic Substances List (NDSL) or exempt.

Legend:
TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List

16. OTHER INFORMATION

NFPA:	**Health hazards** 4	**Flammability** 0	**Instability** 0	**Physical and chemical properties** -
HMIS:	**Health hazards** 3 *	**Flammability** 0	**Physical hazards** 0	**Personal protection** X

Legend Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

TWA	TWA (time-weighted average)	STEL	STEL (Short Term Exposure Limit)
Ceiling	Maximum limit value	*	Skin designation

Prepared By: The Environment, Health and Safety Department of Univar Canada Ltd.

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Revision Date: 14/May/2019

Disclaimer

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End of Safety Data Sheet