

MATERIAL SAFETY DATA SHEET FOR HCL – 32-35 %

Hydrochloric Acid

OTHER NAMES: Hydrogen Chloride, Aqueous; Spirit of Salts; Muriatic Acid; Muriatic Acid

UN Number: 1789 Class: 8 Packaging Group: II EPG: 8A1 Hazchem Code: 2R Poison Schedule: 6

PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE : Colourless liquid with a very sharp, biting odour
BOILING POINT : 142 F MELTING POINT: 61.0°C
VAPOUR PRESSURE : 76 mmHg @21 C
VAPOUR DENSITY: 1.3
SPECIFIC GRAVITY : 1.16
SOLUBILITY (WATER) : Soluble infinite
:

APPEARANCE Clear/Colourless,
White to
yellowish clear
liquid

FLASH : None

POINT

EXPLOSION : None

LIMITS

ODOR :Pungent

ACUTE

INGESTION

Corrosive. May cause burning of the mouth, throat and stomach. Ingestion may cause coughing, constriction of the throat due to swelling of the larynx and vomiting of blood or blood in diarrhoea. Breathing difficulties, shock and convulsions may follow.

EYE

Vapour is severely irritating. Liquid is severely irritating and may cause conjunctivitis, ulceration and corneal burns. Permanent eye damage may result.

SKIN

Concentrated solutions are corrosive. Brief exposure may cause irritation. Prolonged contact may result in burns.

INHALATION

Concentrated hydrochloric acid solutions fume at ambient temperatures and vapours are severely irritating. Inhalation may cause burning sensations, higher concentrations may cause coughing, choking and difficulty in breathing due to oedema of the lungs. Symptoms of oedema may have delayed onset.

CHRONIC

Inhalation and ingestion are the routes of entry into the body. Adverse health effects are related to corrosive nature. The estimated fatal dose for an adult is 1mL of concentrated acid.

Hydrochloric acid: LCLo (inhaled, human): 1300ppm/30M; LD50 (oral, rabbit): 900mg/Kg; LCLo (inhaled, rabbit): 413ppm/30M

ADVICE TO DOCTOR

Treat symptomatically.

INGESTION

NEVER GIVE AN UNCONSCIOUS PERSON ANYTHING TO DRINK NOR ATTEMPT TO INDUCE VOMITING. If the person is conscious, rinse mouth out with water ensuring that mouth wash is not swallowed. Give about 250mL (2 glasses) of water to drink. DO NOT attempt to induce vomiting. Seek URGENT medical attention.

EYE

IMMEDIATELY hold eyelids open and rinse the eye continuously with a gentle stream of clean running water for at least fifteen minutes. Seek URGENT medical attention. If practical, continue irrigation of the eye during transportation to medical facilities.

SKIN

Remove contaminated clothing. Rinse the affected area with water then wash thoroughly with soap and water. Use water alone, if soap is unavailable. Seek medical attention if any soreness or inflammation of the skin persists. Launder affected clothing before re-use.

INHALATION

Remove to fresh air. Keep warm and at rest. If breathing is laboured, hold in a half upright position (this assists respiration). Apply artificial respiration if breathing has stopped. Seek URGENT medical attention for all but the most minor cases of over-exposure.

ENGINEERING CONTROL

Ventilation requirements depend on the concentration of solution in use, the quantity and the method of application. General (mechanical) ventilation is adequate for minor use but local exhaust ventilation may be required if handling large quantities of concentrated product.

PERSONAL PROTECTION

Requirements are dependant on working conditions, quantity of product in use and its concentration. For minor use, acid resistant safety goggles and rubber gloves may be adequate. If concentrated solutions or large quantities are in use, acid resistant safety goggles, face shield, gloves or gauntlets, overalls and splash apron. A half face respirator with acid gas filter is required if the product is being sprayed or handled in such a way that hydrogen chloride vapour is generated. In confined spaces use air supplied breathing apparatus. N.B. TAKE THE LIMITS OF ABSORPTION CAPACITY INTO ACCOUNT. CHANGE FILTERS REGULARLY.

FLAMMABILITY

Non-combustible. May evolve acrid fumes if heated. Concentrated solutions react vigorously with alkalis. May evolve hydrogen on contact with metals.

EXPOSURE STANDARDS

Hydrochloric acid (7647-01-0): E.S. TWA: 5ppm, 7.5mg/m³.

STORAGE

Class 8 Corrosive Substances should not be transported or stored with goods of: Class 1 (Explosives), Class 4.3 (Dangerous When Wet Substances), Class 5.1 (Oxidising Agents), Class 5.2 (Organic Peroxides), Class 6 (Poisonous (toxic) substances, where the poisonous substances are cyanides and the corrosives are acids), Class 7 (Radioactive Substances) and foodstuff and foodstuff empties. Store in a cool well ventilated area. Avoid contact with reactive metals. Keep separate from alkaline substances. Protect containers against physical damage.

SPILLS & DISPOSAL

SPILLS: Dilute solutions and very minor spills may be flushed away with water. For major spills or those involving concentrated acid wear full protective equipment including air supplied breathing apparatus, gloves, acid resistant overalls and rubber boots (trousers should be worn OVER boots, not tucked in). If possible the spill should be contained by damming with earth or sand and then covered with a weak alkali such as soda ash or sodium bicarbonate. It can then be flushed away with copious quantities of water.

DISPOSAL: If possible, return to supplier. Dilute solutions: flush to drains with plenty of water. Concentrated solutions: dilution and chemical reaction or to approved land-fill.

FIRE EXPLOSION

Non-combustible but may evolve acrid fumes in a fire situation. May evolve hydrogen, a highly flammable gas, on contact with reactive metals. Wear self contained breathing apparatus. Extinguish using whatever is suitable for the primary cause of the fire. Water sprays may be used to 'knock down' vapour.

HAZARD CLASSIFICATION

C Corrosive

RISK PHRASES

R35 Causes burns. SAFETY

PHRASES

S1 Keep locked up

S2 Keep out of reach of children.

S26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. S45 In case of accident or if you feel unwell, seek medical advice immediately (show label whenever possible).

