F&C SAFETY DATA SHEET

Catalog No.: 313108
Product name: Hydrochloric acid 31%

1. Identification of the substance/preparation and of the company/undertaking

Catalogue No.: 313108
Product name: Hydrochloric acid 31%

Company: Fertilizers & Chemicals Ltd.
P.O.box 1428, Haifa 31013, Israel

Contact for information: Tel+972-4-8468178/179 Fax +972-4-8468296
Emergency Tel. No.: +972-4-8451578 Fax +972-4-8468110

2. Composition/information on ingredients

Aqueous solution of hydrochloric acid.

Synonyms: Muriatic acid, HCl (aqua)

Hazardous ingredients:
Name according to EC directives: Hydrochloric acid

Hazard symbols: C
R-phrases: 34-37
Causes burns. Irritating to respiratory system

CAS-No.: 7697-01-0 content: 31%
Ec. No.: 2315957 EC-index-No.: 017-002-01-X

3. Hazards identification

Highly corrosive. Causes eye burns and permanent tissue damage.
Fumes are corrosive to eyes and respiratory tract.
Highly toxic to fish and other water organisms/
F&C SAFETY DATA SHEET

Catalog No.:  313108
Product name: Hydrochloric acid 31%

4. First aid measures
   **After inhalation:** remove to fresh air. If breathing is difficult, give oxygen. If breathing has stopped, give artificial respiration. Get medical attention immediately.
   **After skin contact:** wash off with plenty of water. Dab with polyethylene glycol 400. Immediately remove contaminated clothing. Get medical attention immediately.
   **After eye contact:** rinse out with plenty of water for at least 10 minutes with the eyelid held wide open. Get medical attention immediately.
   **After swallowing:** make victim drink plenty of water, avoid vomiting (risk of perforation!). Get medical attention immediately. **Do not** attempt to neutralize the acid. **Do not** give liquids to an unconscious person.

5. Fire fighting measures
   **Suitable extinguishing media:** In adaption to materials stored in the immediate neighborhood.
   **Special risks:** Development of hazardous combustion gases or vapours possible in the event of fire. Hydrogen may form upon contact with metals (danger of explosion!)
   The following may develop in event of fire: hydrochloric acid, chlorine.
   **Special protective equipment for fire fighting:** Do not stay in dangerous zone without suitable chemical protective clothing and self-contained breathing apparatus.
   **Other information:** Non-combustible. Contain escaping vapours with water.

6. Accidental release measures
   **Person-related precautionary measures:** Evacuate area. Stay upwind and away from spill release. Wear impervious full body covering suit with heavy rubber boots. Respiratory protection required where vapors are present. Avoid substance contact. Do not inhale vapor/aerosols.
   **Procedures for cleaning/absorption:** Contain spill and stop leak if it can be done without risk. Take up with liquid-absorbent material (e.g. dry sand, earth, vermiculite). Collect leakage in sealed non-metallic containers. Forward for disposal. Ventilate and wash area after clean-up is complete.
   **Environmental-protection measures:**
F&C SAFETY DATA SHEET

Catalog No.:  313108
Product name: Hydrochloric acid 31%

Do not allow to enter sewerage system.

7. Handling and storage
Handling:
Avoid contact with eyes, skin, and clothing. Wear all recommended personal protective clothing when handling. Use with adequate ventilation.
Avoid adding water to acid. Always add acid to water to prevent spattering or boiling.
Storage:
Keep containers tightly closed. Store in a cool, dry, well-ventilated place.
Requirement for storage rooms and containers:
No metal containers. Keep separate from oxidants and strong bases.

8. Exposure controls/personal protection
Specific control parameter
TLV (ACGIH):  5 ppm, 7.5mg/m³, ceiling
PEL (OSHA):  5 ppm, 7.5mg/m³, ceiling
IDLH (NIOSH)  50 ppm
Ventilation requirements: Mechanical exhaust required. Ventilation must be sufficient to maintain atmospheric concentration below TLV. Ventilate at floor level.
Personal protective equipment:
Respiratory protection: required when vapors/aerosols are generated.
Eye protection: Chemical safety goggles and face shield (8-inch minimum). Do not wear contact lenses.
Hand protection: Chemical resistant gloves.
Skin protection: Acid resistant protective clothing.
Other protective equipment: safety shower and eye bath.
Industrial hygiene:
Immediately change contaminated clothing. Apply skin-protective barrier cream. Wash hands and face after working with substance.

9. Physical and chemical properties
Form: liquid
M.F.: HCl
M.W.: 36.46
Color: colorless
F&C SAFETY DATA SHEET

Catalog No.:  313108
Product name:  Hydrochloric acid 31%

Odor:    pungent
pH value (20°C)   <1
Melting temperature  -46.2 °C (31.24%)  
Boiling temperature  108.6°C (constant boiling azeotrope with water containing 20.2% HCl)
Ignition temperature  not available
Flash point  not available
Explosion limits lower not available
     upper  not available
Vapour pressure  ~15 mm Hg
Relative vapour density  1.3 (air=1)
Density (20°C)  1.16 g/cm3
Solubility in water (20°C)  soluble

10. Stability and reactivity
Stable under normal conditions.
Conditions to be avoided
Keep away from heat, sparks or flames.
Substances to be avoided
Incompatible with most metals, hydroxides, amines, alkalis, cyanides, sulfides, carbides, strong oxidizers, carbonates, hypochlorites and formaldehyde.
May react violently with incompatible substances, releasing toxic and/or flammable gases. Considerable amounts of heat may be evolved.
Hazardous polymerization:
Will not occur.
Hazardous decomposition products
in the event of fire: hydrochloric acid, chlorine.

11. Toxicological information
RTECS:    MW4025000
acute toxicity (calculated on the pure substance.)
LD₅₀ (oral, rat) > 90 ml/kg
LC₅₀ (inhalation, rat) 3124 ppm(V)/1 h
LCL₀ (inhalation-hmn): 1300 ppm /30 m
LCL₀ (inhalation hmn): 3000 ppm /5 m
Subacute to chronic toxicity.
Applicable to the toxicologically determinant component:
An embryotoxic effect need not be feared when the threshold limit value is observed.
Further toxicological information:
Strongly corrosive substance.
After inhalation of vapours: Irritation symptoms in the respiratory tract.
After skin contact: burns.
After eye contact: burns, Risk of blindness!
After swallowing: Damage of: mouth, oesophagus and gastrointestinal tract.
Risk of perforation in the oesophagus and stomach.
After a latency period: cardiovascular failure.
Carcinogenity: Not listed as a carcinogen by NTP, IARC,ACGIH or OSHA.
Further data
the product should be handled with the care usual when dealing with chemicals.

12. Ecological information
Ecotoxic effects:
Biological effects: Toxic for aquatic organisms. Harmful effect due to pH shift. Forms corrosive mixtures with water even if diluted.
Toxic effect on fish and plankton.
lethal for fish as from 25 mg/l, Leuciscus idus LC$_{50}$: 862 mg/l (1N solution).
Damage to plant growth. Harmful effects begin at: plants 6 mg/l
Does not cause biological oxygen deficit.
Do not allow to enter waters, waste water, or soil!

13. Disposal considerations
Product:
There are no uniform EC Regulations for disposal of chemicals or residues. Chemical residues generally count as special waste. The disposal of the latter is regulated in the EC member countries through corresponding laws and regulations. We recommend that you contact either the authorities in charge or approved waste disposal companies, which will advise you on how to dispose of special waste. An acceptable method of disposal is to flush thoroughly with water applied to the entire spill. Washing should be neutralized with soda ash or lime before discarding to a sewer in accordance all local and state laws/rules/regulations/standards/and other requirements.
F&C SAFETY DATA SHEET

Catalog No.: 313108
Product name: Hydrochloric acid 31%

Packaging:
Disposal in compliance with official regulations. Handle contaminated packaging in the same way as the substance itself. If not officially specified differently, non-contaminated packaging may be treated like household waste or recycled.

Empty drums disposal:
prior to disposal, wash with a 10% sodium bicarbonate solution the thoroughly emptied drums, then rinse thrice with water, emptying completely after each washing.

14. Transport information
Transport over land ADR/RID
ADR/RID class: 8 Number and letter: 5b
Name of material: 1789 Hydrochloric Acid 31%

River transport ADN/ADNR
not examined

Sea transport IMDG
IMDG class: 8 UN-No.: 1789 Packaging group: II
Ems: 8-03 MFAG: 700
Correct technical name: Hydrochloric Acid 31%

Air transport ICAO-TI and IATA-DGR
ICAO/IATA class: 8 UN/ID-No.: 1789 Packaging group: II
Correct technical name: Hydrochloric acid
Hazchem Code: 2R

15. Regulatory information
Labeling according to EC Directives
Symbol: C Corrosive
R-phrases: 34-37 Causes burns Irritating to respiratory system.
S-phrases: 26-36/37/39-45 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
Wear suitable protective clothing, gloves and eye/face protection. In case of accident or if you feel unwell, seek medical advice immediately

Fertilizers & Chemicals Ltd., P.O.Box 1428, 31 013 Haifa, Israel.+972-4-846-8178, Fax: +972-4-846-8296
F&C SAFETY DATA SHEET

Catalog No.: 313108
Product name: Hydrochloric acid 31%

(show the label where possible).

16. Other information

Date of issue: 16.02.99
Date of Revision: 26.06.03

All information, recommendations and suggestions herein concerning our products are based upon tests and data believed to be reliable, however, it is the users responsibility to determine the safety, toxicity and suitability for his own use of the product described herein. Since the actual use by others is beyond our control, no guarantee, expressed or implied is made by F&C, as to the effects of such use, the results to be obtained or the safety and toxicity of the product nor does F&C assume any liability arising out of the use, by others, of the product referred to herein. Nor is the information herein to be construed as absolutely complete since additional information may be necessary or desirable when particular or exceptional conditions or circumstances exist or because of applicable laws or governmental regulation.