MSDS in accordance with 91/155/EC

1. Identification of the substance/preparation and company

Trade Name : UNICHEM XPOWER
Application Area : Descaling and cleaning, industrial application
Identification of the company :

Name : UNICEM KİMYA SANAYİ VE TİCARET LTD. ŞTİ.
Address: Dudullu OSB, Kadosan B 5-7, Ümraniye/İSTANBUL
Phone : +90 216 415 60 65 - 499 44 51
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2. Hazards Identification

- **Classification:**

C - Corrosive

- **Potential Health Effects:** Health hazards given on this data sheet apply to concentrated solutions of hydrochloric acid. Hazards of dilute solutions may be reduced, depending upon the concentration. Degree of hazard for these reduced concentrations is not currently addressed in the available literature.
  Inhalation: Corrosive! Inhalation of vapors can cause coughing, choking, inflammation of the nose, throat, and upper respiratory tract, and in severe cases, pulmonary edema, circulatory failure, and death.
  Ingestion: Corrosive! Swallowing hydrochloric acid can cause immediate pain and burns of the mouth, throat, esophagus and gastrointestinal tract. May cause nausea, vomiting, and diarrhea, and in severe cases, death.
  Skin Contact: Corrosive! Can cause redness, pain, and severe skin burns. Concentrated solutions cause deep ulcers and discolor skin.
  Eye Contact: Corrosive! Vapors are irritating and may cause damage to the eyes. Contact may cause severe burns and permanent eye damage.
  Chronic Exposure: Long-term exposure to concentrated vapors may cause erosion of teeth. Long term exposures seldom occur due to the corrosive properties of the acid.
  Aggravation of Pre-existing Conditions: Persons with pre-existing skin disorders or eye problems or impaired respiratory function may be more susceptible to the effects of the substance.
  Interaction with Other Chemicals Which Enhance Toxicity: None known
  Medical Conditions Aggravated by Exposure: None known

3. Composition/Information on ingredients

Hazardous Components	CAS No	% by Weight	Classification	R Phrases
Hydrochloric acid	7647-01-0	20 – 25	Corrosive	R23, 24, 25, 34, 36, 37, 38
Ammoniumbiflorure	1341-49-7	5 – 10	Toxic	R25, 34, 36, 37, 38

The product consists of the uppergiven ingredients, some nonhazardous components and water.

4. First aid measures

First aid procedures given apply to concentrated solutions. Exposures to dilute solutions may not require these extensive first aid procedures.

Inhalation: Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention immediately.
Ingestion: If swallowed, DO NOT INDUCE VOMITING. Give large quantities of water. Never give anything by mouth to an unconscious person. Get medical attention immediately.
Skin Contact: Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention immediately. Wash clothing before reuse. Thoroughly clean shoes before reuse.
Eye Contact: Immediately flush eyes with plenty of water for at least 15 minutes, lifting lower and upper eyelids occasionally. Get medical attention immediately.

5. Fire-fighting measures

Flammability of the Product : Non-flammable.
Auto-Ignition Temperature : Not applicable.
Flash Points : Not applicable.
Flammable Limits : Not applicable.
Products of Combustion : Not applicable.
Fire Hazards in Presence of Various Substances : None.
Explosion Hazards in Presence of Various Substances : None.
Fire Fighting Media and Instructions : Water or water spray. Neutralize with soda ash or slaked lime.

6. Accidental release measures

Ventilate area of leak or spill. Wear appropriate personal protective equipment as specified in Section 8. Isolate hazard area. Keep unnecessary and unprotected personnel from entering. Contain and recover liquid when possible. Neutralize with alkaline material (soda ash, lime), then absorb with an inert material (e. g., vermiculite, dry sand, earth), and place in a chemical waste container. Do not use combustible materials, such as saw dust. Do not flush to sewer!

7. Handling and storage

Store at room temperature. Store in a dry, ventilated storage area with acid resistant floors and good drainage. Protect from physical damage. Keep out of direct sunlight and away from heat and incompatible materials. Keep locked up. Avoid contact with eyes and skin. Do not wash out container and use it for other purposes. When diluting, always add the acid to water; never add water to the acid. Protect from freezing. Containers of this material may be hazardous when empty since they retain product residues (vapors, liquid); observe all warnings and precautions listed for the product. Storage stability : Shelf-life is 5 years.

8. Exposure controls / personal protection

Airborne Exposure Limits: For Hydrochloric acid: OSHA Permissible Exposure Limit 5 ppm (Ceiling) ACGIH Threshold Limit Value: 2 ppm (Ceiling), A4 Not classifiable as a human carcinogen
Ventilation System: A system of local and/or general exhaust is recommended to keep employee exposures below the Airborne Exposure Limits. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area.
Personal Respirators (NIOSH Approved): If the exposure limit is exceeded and engineering

controls are not feasible, a full facepiece respirator with an acid gas cartridge may be worn up to 50 times the exposure limit or the maximum use concentration specified by the appropriate regulatory agency or respirator supplier, whichever is lowest. For emergencies or instances where the exposure levels are not known, use a full-facepiece positive-pressure, air-supplied respirator. WARNING: Air purifying respirators do not protect workers in oxygen-deficient atmospheres.
Skin Protection: Rubber or neoprene gloves and additional protection including impervious boots, apron, or coveralls, as needed in areas of unusual exposure to prevent skin contact.
Eye Protection:
Use chemical safety goggles and/or a full face shield where splashing is possible. Maintain eye wash fountain and quick-drench facilities in work area.

9. Physical and chemical properties

Physical form : Mobile liquid.
Colour : Transparent, colourless.
Odour : Pungent, Hydrochloric acid. No fragrance added.
Density : 1,05 – 1,07
Boiling Point : >100°C.
Freezing Point: <-15°C.
pH : 0.5 – 1.0.
Solubility : Soluble in water.

10. Stability and reactivity

Stability: Stable under normal conditions of use and storage.
Possible 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.
Conditions to Avoid: Heat, direct sunlight, incompatibles.
Hazardous Polymerization: Will not occur.
Incompatibilities: A strong mineral acid, concentrated hydrochloric acid is highly reactive with strong bases, metals, metal oxides, hydroxides, amines, carbonates and other alkaline materials. Incompatible with materials such as cyanides, sulfides, sulfites, and formaldehyde.

11. Toxicological information

Hydrochloric acid: Inhalation rat LC50: 3124 ppm/1H; Oral rabbit LD50: 900 mg/kg. Investigated as a tumorigen, mutagen, reproductive effector.

12. Ecological information

Environmental Fate: For Hydrochloric Acid (Concentrated Solutions): When released into the soil, this material is not expected to biodegrade. When released into the soil, this material may leach into groundwater.
Environmental Toxicity: For Hydrochloric Acid (Concentrated Solutions): This material may be toxic to aquatic life. LC50 Shrimp: 100-300 ppm/48-hr/salt water; LC100 trout: 10 mg/l/24-hr; TLm mosquito fish: 282 ppm/96-hr.

13. Disposal considerations

Reuse or reprocess, if possible. Whatever cannot be saved for recovery or recycling should be handled as hazardous waste. Dispose in accordance with related local regulations.

14. Transportation Data

- **ADR/RID :** CLASS: 8; CORROSIVE; PACKING GROUP: 2
- **ICAO/IATA :** CLASS: 8; CORROSIVE; PACKING GROUP: 2
- **IMDG/GGV :** CLASS: 8; CORROSIVE; PACKING GROUP: 2; MARINE POLLUTANT: YES.
- **UN Number :** UN 1789
- **UN Proper Shipping Name:** HYDROCHLORIC ACID SOLUTION

15. Regulatory information

- **Classification according to EC rules:** Hazardous substance: Corrosive.
- **Labelling in accordance with EC Directives:** Hazard symbol: C - Corrosive. Hazardous substance. Hydrochloric acid solution (20-25%) CAS No: 7647-01-0
- **R Phrases :** R23 Toxic by inhalation, R24 Toxic in contact with skin, R25 Toxic if swallowed, R34 Causes burns, R36 Irritating to eyes, R37 Irritating to respiratory system, R38 Irritating to skin.
- **S Phrases :** S1 Keep lockep up, S2 Keep out of the reach of children, S3 Keep in a cool place, S7 Keep container tightly closed, S18 Handle and open container with care, S24/25 Avoid contact with skin and eyes, S26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advise, S27 Take off immediatlely all contaminated clothing S28 After contact with skin, wash immediately with plenty of water. S30 Never add water to this product S36 Wear suitable protective clothing, S37 Wear suitable gloves, S39 Wear eye/face protection, S45 In case of accident or if you feel unwell, seek medical advise immediately (show the label whenever possible)

16. Other information

The data is based on our current level of knowledge, anda re intended to describe the product with regard to the requirements of safety. This given data should not be taken to imply any guarentee of a particular or general specifications. It is the responsibility of the user of the product to ensure to his satisfaction that the product is suitable for the intended purpose and method of use. We do not accept responsibility for any harm that may be caused by the use of this information. In all cases, our general conditions of sale is applied.