Hydrochloric Acid
0.2N

Spill Assessment

Gather Available Information

Shipping Manifest Required
Product ID: Hydrochloric Acid
TDG Class: Class 8 Corrosives
UN# & PG: UN1789 PG III
Mixed Load Limited Quantity: 5L up to accumulation of 500L
ERAP Index: Not Required
Passenger Vehicle Limitation: 5L
Containers: Plastic coated glass container is recommended

Manufacture Information

Name/ Contact:
Tel:
Cell:

Assess the Volume Spilled

Total volume:
Number of Containers:
Product not spilled:
Product recovered / Contained:

Product Information:

Physical Classification: Liquid
Color: Clear colorless
Odor: Pungent – Disagreeable and choking (slight)
pH: <1 (acidic)
Vapor Density: 0.62 (air=1)
Molecular Formula: HCl
Specific Gravity: 1 (water = 1)
Solubility: Very soluble in water
Explosion Hazard: non-explosive in presence of open flames and sparks, of shock

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Safety Assessment

Responders Safety

Public Security Perimeter: 50m for liquid spills

Evacuation Perimeter: 800m for major incident involving fire

PPE Requirement for major spills: Splash Glasses/ Goggles. Rubber Boots. Gloves (Nitrile, Neoprene, PVC). Use NIOSH approved respirators (corrosive cartridge) or SCBA to avoid inhalation of the vapors (usually at large spills).

Structural Fire Fighters' Protective Clothing: Only provides limited protection. Consider chemical protective clothing at large spills (i.e. TyChem or Saranex)

Routes of Entry: Skin contact, eyes, inhalation and ingestion. Hydrogen chloride forms corrosive hydrochloric acid on contact with water found in body tissue.

Acute Health Effects: Skin contact can cause redness, pain and severe skin burns.
Eye contact can cause severe burns and permanent eye damage. Also cause tearing, swelling, blurred vision and sloughing of the surface cells of the eye.
Ingestion will cause immediate burning in the mouth, throat, severe pain, nausea and vomiting.
Inhalation of vapors or mist can cause coughing, choking, inflammation / burning of the nose, throat and upper respiratory tract. In severe cases, pulmonary edema, circulatory system failure and death.

Decontamination Requirements: Full decon unit should be on standby.

Product Safety Information:

Toxic Vapors: Will form as soon as hydrogen chloride is exposed to air

Hazard Statement: Toxic and corrosive – may cause severe burns. Reaction with water or moist air will release toxic, corrosive or flammable gases

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Fire Hazards:

Large Fire Hazards: Do not add water directly to hydrochloric acid
Do not extinguish flames as explosive re-ignition may occur.
Allow fires to burn out.
Use CO_2, dry chemicals, dry sand, alcohol resistant foam.
If fires cannot be brought under control, evacuate the area because of explosion hazards and toxic fumes.

Conditions of Instability: Reactive with most metals, amines, and alkalis which can cause the release of flammable hydrogen gas and toxic or corrosive fumes.
Reacts with oxidizers to release chlorine gas

First Aid Requirements: see MSDS for full details. Contact Manufacture.

Environmental Assessment

Assess the following Conditions

Ambient Temperatures:
Precipitation (%):
Sunrise (time)/ Sunset (time):
Slope or ground contour (% gradient):
Porous Soil (sand/ cobble):
Dense Soil (clay/ bedrock):
Ground cover (foliage/ peat/ marsh / snow):

Assess Distance to Water Body

Into Water Body:
<5m:
5-15m:
>15m:

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Identify the Water Body

Distance Marker (km #):

Name of nearby water bodies:

Fisheries assessment reports:

Distance to other tributaries:

Effects of Product into Water

Toxicity: Hydrochloric acid dissociates completely in water to from chloride ion and hydronium ions, which results in practically no effect on pH (will not raise the pH value).
Hydrochloric acid in a water body will cause an extreme drop in pH and produce a pH shock-plume. The impact will likely cause severe acute toxicity to all aquatic organisms it comes in contact with.

Freezing Temperatures:

Specific Properties: Dispersal – not applicable
Dissolves / solubility – readily dissolves
Evaporation – not applicable
Emulsification – not applicable.

Spill Response: Assess, Contain, Recover & Dispose. Refer to specific guidelines.

Containment Techniques: Containment must be constructed a ways downstream so that the area can be evacuated prior to the spill arriving.
Consider: Tarp Containment; Containment Boom; Sandbag Diversion; Culvert Block

Effects of Product on Air

Spill to open environment (no fire): Upon exposure to air, there is an immediate release of toxic hydrogen chloride gas. As a strong corrosive acid, hydrochloric acid reacts with many metals to produce flammable hydrogen gas that can become an explosive hazard.

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Effects of Product on Land

Spill Response: Assess, Contain, Recover & Dispose. Refer to specific guidelines.

Effects on Land: Soil contamination may be neutralized with appropriate expertise. Use sodium bicarbonate, sodium carbonate (soda ash), calcium carbonate or lime to neutralize spills or Spill-X-A or Neutrasorb

Tools: Use plastic tools for spill clean-up