Introduction

- Ed Robinson – Alaskan Branch Manager for Brenntag Pacific, Inc.
- 20 year Air Force Veteran – Logistics, including loading all forms of transportation. Additionally taught military equal of IATA, the Transportation of Dangerous Goods via Military Aircraft.
- Worked in Chemical Distribution since my retirement – 14 years total. 10 as a Operations/Commercial Manager, all here in Fairbanks Alaska.
- Disclaimer - I am **NOT** a Chemist nor an **EXPERT** on Chemistry. I am not an expert in spill response and will provide the recommended handling of Hydrochloric Acid when encountered in a emergency response.

What is Hydrochloric Acid?

- Hydrochloric Acid – AKA – Muriatic Acid or HCL.
- Very Strong Corrosive Material
- Also very Toxic – can cause Immediate and Serious Toxic Effects.
- Created by making a salt brine solution (Sodium Chloride and H20) , which is then fired or “cracked” releasing Chlorine Gas and Hydrogen Gas. These gases are captured and then blended with water to make HCL and Bleach (Sodium Hypochlorite). Dilution to the appropriate strength is achieved by adding the water to the gas.

What is Hydrochloric Acid? Continued

- HCL has a pungent odor. Easily detected at 1-5 ppm.
- HCL's PH is 0 – Zero – very strongly acidic.
- Very Soluble in water in all proportions and also in Alcohols.
- US DOT HAZMAT : Hydrochloric Acid, solution, Class 8, UN1789, PG II
- Reportable Quantity, RQ = 5,000 lbs.
- Appearance is colorless or slightly yellow fuming liquid.

How is HCL Used in Industry?

- HCL is used in many industries, including Mining, Water Treatment, Pickling of Metals, Oil and Gas, PH Control and various other minor applications.
- Mining – ore reduction
- Oil and Gas – Acidizing of Petroleum Wells
- Water Treatment to include reduction of scaling and ph controls.

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Product Overview

- Extremely Corrosive. The severity of damage to the human body depends on concentration of the acid and the duration of exposure. Contact with water will generate extreme heat. Contact with metals will generate flammable Hydrogen Gas.
- Concentration levels are typically 30 – 37 %.
- HCL will fume when exposed to air in an open container. It will also release hazardous gases when transferred.
- Incompatible with strong bases.

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Emergency Response to HCL

- **Always Refer to the MSDS for Guidance**
- Evacuate unnecessary personnel from the spill area and keep unprotected persons upwind.
- Wear Appropriate PPE as prescribed in the MSDS or other technical data.
- Ventilate Area – Vapor is heavier than air and will collect in low areas.
- Do Not Touch Spilled HCL unless wearing PPE.

Emergency Response to HCL - continued

- **Environmental Precautions**
- Implement Site Spill Control Plan.
- Stop or reduce leak if safe to do so.
- Prevent spilled material from entering sanitary or storm sewers, waterways, or confined spaces.
- Use inert materials such as Earth, Sand, or Absorbent materials to form dike and absorb spill.

Emergency Response to HCL - continued

- **Remediation Measures**
- Restrict access to area until completion of cleanup.
- Ensure cleanup is conducted by trained personnel only. Use all appropriate personal protective equipment (PPE).
- For Small Spills absorb with neutralizing materials such as Soda Ash or Lime and collect in sealed containers.
- Flush Area with water.
- For Large Spills, contain and collect spilled materials if possible. Notify Government Occupational Health and Safety and Environmental Authorities as per applicable regulations.
- In the US, releases over 5,000 lbs must also be reported to the National Response Center at 1-800-424-8802.

Emergency Response to HCL - continued

- **Fire Fighting Measures**: Does not burn.
- **No** Auto Ignition Temperature; Lower Flammability Limits; or Upper Flammability Limits
- **Not Sensitive to**: Mechanical Impact or Static Discharge.

Emergency Response to HCL - continued

- **Respiratory Protection** – Refer to MSDS
- **Skin Protection** – Wear impervious rubber or neoprene gloves and boots and/or other protective clothing according to circumstances. Some operations may require the use of an impervious full-body encapsulating suit.
- **Eye and Face Protection** – Eye protection is required. Chemical Safety Goggles **are** recommended. The wear of contact lenses is **not** recommended.
- **Other –** Have a safety shower and eye wash station readily available in the immediate work area.

Emergency Response to HCL - continued

- **First Aid Measures – Refer to MSDS**
- **Eye Contact –** Immediately flush with water for at least 20 minutes while holding the eyelid open. **DO NOT INTERRUPT FLUSHING –**have a emergency vehicle wait if necessary.
- **Ingestion –** Refer to MSDS
- **Inhalation – Take precautions to ensure your own safety before attempting to rescue.** Remove victim to fresh air, if breathing has stopped administer artificial respiration. Refer to MSDS.
- **General Comments:** Provide general supportive measures (comfort, warmth, rest). Seek medical attention for all exposures except minor instances of inhalation or skin contact. First Aid procedures should be reviewed by appropriate personnel familiar with HCL and it's conditions of use in the workplace.

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