Sulfuric Acid Bulk Handling Policy

Health and Safety FCX-HS28 | Release Date 1/18/2019|Version 2 5/23/24

POTENTIAL FATAL RISKS

Exposure to Hazardous Substances - Acute
Uncontrolled Release of Energy
Vehicle Impact on Person
Rail Impact on Person

CRITICAL CONTROLS

- Access Control
- Alarm Systems
- Engineered Controls
- Handling Requirements
- Loading and Unloading Protection
- Mechanical Integrity of Storage and Distribution
- PPE
- Energy Isolation/LOTOTO
- Guards, Barriers and Barricades
- Hose Coupling Lock System
- Positive Communication System
- Segregation
- Signage and Demarcation
- Fundamentally Stable Parking
- Securing Rolling Stock

TRAINING REQUIREMENTS

Site specific training and operator technical training (i.e. Hazardous Materials handling training, Driver/Carrier Training, etc.).
Third party carriers of concentrated sulfuric acid shall receive equivalent technical training and must attend Sulfuric Acid Bulk Handling training.
Contact site training department for additional requirements.
SFT_FCX1017C Bulk Sulfuric Acid Handling Training

POLICY

OVERVIEW

Set the standards to protect employees and contractors from exposure to concentrated (93% or greater) sulfuric acid during loading and unloading of trucks and rail cars. All individuals entering bulk acid containment areas will be trained according to this policy.

ACTIONS TO STAY SAFE

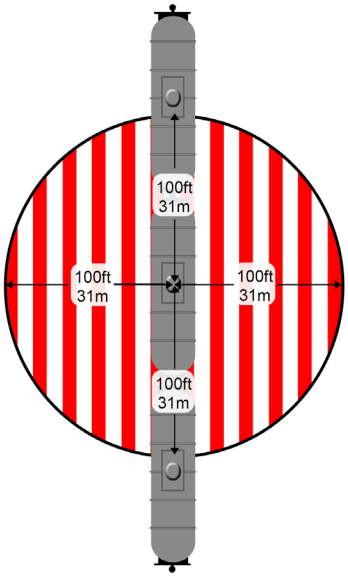
- Hot Zone and Warm Zone areas shall be signed and demarcated.
- A pre-task review, workplace exam and equipment inspection must be completed prior to loading/unloading bulk concentrated acid.
- Ensure communication device(s) are working.
- Test safety showers and eyewashes prior to performing work.
- Maintain unobstructed access between the task and shower/ eyewash.
- Verify location of emergency stop button for acid transfer pumps.
- Maintain unobstructed access between task and emergency stop.
- Ensure tanks have storage capacity before offloading.
- Acid resistant PPE is to be inspected and properly worn prior to entering the Hot or Warm Zones. Reference the PPE Technical Supplement for additional details.
- Employees and contractors will wear personal gas monitors in designated areas and be trained in their use.
- Offloading of acid by gravity should be used whenever possible.
- Visually inspect all hoses and fittings prior to unloading.
- Ensure all lines are drained after loading/unloading.
    - During the unloading process, after opening the air valve to depressurize the car, open the “Fill hole Cover” to ensure all pressure is released from the railcar prior to, and during the removal of the product line flange.
- Be vigilant for leaking acid. Contact appropriate personnel immediately.
    - If at any point there is a malfunction with the railcar or railcar components (i.e., seized, or stripped bolts, damaged or malfunctioning valves, damaged flanges or pipe covers, etc..) ensure all lines are drained after loading/unloading. Contact the Corporate Sulfuric Acid Team to schedule repairs.
- Ensure chocks, blocks or stops are in place for all railcars and trucks as required.

- Isolate loading/unloading rail sections from other sections of rail to prevent incoming cars as required.
- Always review site-specific processes and procedures prior to starting work.
- Ensure camlock splash-guards are in place and serviceable for truck offloading.

HOT AND WARM ZONES FOR RAIL AND TANKERS

All Zone boundaries will be demarcated, and signage will be present. Zone requirements will be adhered to during all loading and unloading operations. No person will be permitted in any zone without the appropriate acid handling PPE.

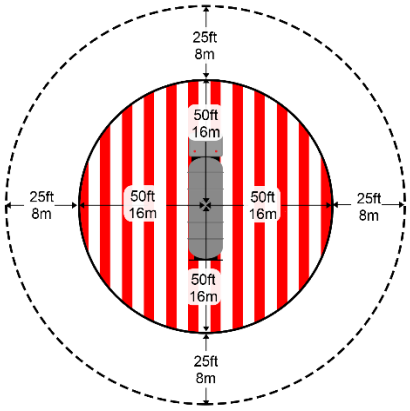
RAIL CARS



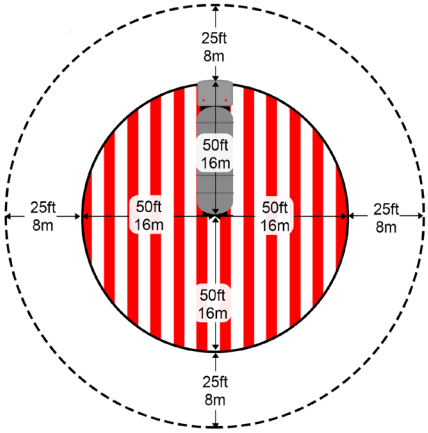
Hot Zone: 100ft or 31m

TANKERS

Loading



Unloading



Hot Zone: 50ft or 16m
Warm Zone: 25ft or 8m