



THE CHLORINE INSTITUTE, INC.

1300 Wilson Blvd, Suite 525, Arlington, VA 22209

Phone: 703-894-4140 Fax: 703-894-4130

www.chlorineinstitute.org

CI Recommendations on the Reduction of HCL NARs

The following recommendations were presented to the CI Transportation Issue Team by the HCL NAR Task Group on September 28, 2010. The recommendations were accepted by the Issue Team and are being evaluated for incorporation into CI Pamphlet 98, *Recommended Practices for Handling Hydrochloric Acid in Tank Cars*. Final approval of the recommendations is expected with the approval of Pamphlet 98 Edition 4 in 2011.

Below is a list of best practices recommended for consideration to reduce HCL non-accidental releases (NARs) in tank cars.

1. Pressure Relief Valves

- a. Using relief valves instead of rupture discs. Some advantages with using relief valves instead of rupture discs are:
 - i. A relief valve will re-close after relieving the excess pressure within the car whereas a disc cannot re-close
 - ii. The use of relief valves eliminates several aspects of human error which can come about when using rupture discs, such as using a disc of an incorrect material of construction, improperly installing a disc, etc.
- b. Using the highest allowable relief valve setting

2. Rupture Disc Assemblies

- a. When using rupture discs, ensuring proper orientation of the disc and following OEM assembly and installation instructions
- b. Thoroughly inspecting the rupture disc holder and both sides of rupture disc by removing disc from holder
- c. Using surge pressure reduction devices under rupture discs
- d. Rupture disc shall have direction of flow marked on disc if it is not a unidirectional disc
- e. Rupture discs shall be marked "Suitable for HCL" or have HCL incorporated into the part number

3. Rubber Lining

- a. Removing the spider and using a flex tip eduction tube, if possible.
- b. Performing conductivity tests and logging results
- c. Using lining with a harder durometer (60-65) on flange faces

4. Securement Procedures

- a. Conducting a post load leak test to check for proper securement
- b. Using a torque wrench to assure proper torquing of all fitting hardware on the car
- c. Following proper torquing sequence and using graduated levels to achieve desired final torque
- d. Using tamper evident devices, such as cable seals and tamper-evident bags

5. Inspection/Maintenance Procedures

- a. Conducting routine valve maintenance for all valves
- b. Inspecting gaskets and fasteners to ensure all are in good condition
- c. Loading procedures should ensure sufficient outage when loading a tank car

6. Preferred Manway Design

- a. Using CI guidance on the preferred 20" and 22" manway arrangements, which excludes the use of the one-armed bandit
- b. Follow the AAR requirement on top fittings protection