

Progress on New Tank Car Designs for Chlorine, Ammonia, and Other TIH Materials



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Previous On track! articles have outlined the move toward improved packaging for products that are classified as toxic by inhalation (TIH). This is an update of that earlier material.

Regulatory Action

The U.S. Federal Railroad Administration (FRA) is in the process of developing a rulemaking regarding tank car performance. At a public meeting on March 30, 2007, the FRA indicated their current thinking and invited feedback from interested parties. They suggested the following potential actions, subject to input from industry participants:

- A regulation that would provide a performance specification for tank cars carrying TIH materials. Performance would be judged on the basis of accident survivability, particularly puncture resistance. Puncture resistance at 25 mi/hr impact is an initial goal.
- The regulation would affect cars carrying all TIH materials, not just chlorine and ammonia as in the Association of American Railroads (AAR) standard.
- Restrict speed on trains carrying TIH materials to 50 mi/hr.
- Restrict speed on trains carrying TIH materials in dark territory (without centralized traffic control) to 30 mi/hr.

In April 2007, the FRA sponsored impact/puncture testing of existing chlorine cars that will establish the base level values for validating computer models, and providing a basis for comparison with future tank car designs. Also, the FRA is in contact with industry stakeholders regarding tank car developments for TIH materials. The goal is to produce a Notice of Proposed Rulemaking (NPRM) by August/September 2007 and then a Final Rule by January 2008.

Transport Canada is also engaged in the process of evaluating new tank car designs for TIH materials. Any changes in Canada would be reviewed by the CGSB 43.147 Committee and published in that standard.

Industry Action

Industry continues to move quickly to develop a new tank car design with the aim of improving on the puncture resistance of the AAR proposal while enhancing other aspects of tank car performance. The Next Generation Tank Car group, including Dow Chemical, Union Pacific Railroad and Union Tank Car, is working to include technology that has been employed in other industries to enhance puncture resistance and maintain or enhance the insulation and thermal protection elements of the current design. Security issues are also being incorporated. Other organizations are participating in the Next Generation project through a coordination panel. The Next

Generation group expects that cars to their new design will be commercially available in 2010, allowing time for design work, approval of the design by the AAR and regulators, prototype construction, and testing.

The Chlorine Institute has focused its efforts on developing puncture performance models and validation of the models through physical testing that will be performed within the Next Generation project.

AAR Rule

The AAR developed and implemented a rule dictating the type of tank cars that would be required for chlorine and ammonia service. The rule initially came into effect January 2007 but the AAR deferred implementation until January 2008 recognizing the FRA timetable. Other portions of the rule remain unchanged:

Chlorine: Requirement is a 105J600W car.

Ammonia: Requirement is a 112J500W car.

Other TIH: Account for about 20% of TIH shipments. The AAR has established a task force to address car design, with the goal to have a rule in place by January 2008.

Chlorine and ammonia cars ordered after January 1, 2008 are to be constructed to the new design. However, at this stage it is unknown if cars meeting the AAR standards would be acceptable under the forthcoming regulatory requirements.

Outlook

With the initiatives outlined above, it is not currently possible to offer a definitive outlook. The picture should clear over the next few months as the FRA works to produce the NPRM by August/September 2007.



TC/DOT 112J340W 33,800 USG tank car in anhydrous ammonia service

Chlorine Institute's First Responder Video Receives Excellence Award

A new Chlorine Institute (CI) video, "Chlorine Emergencies An Overview For First Responders", has been recognized with a Telly Award for Safety Program excellence. The Telly Awards, originally founded to honour excellence in local, regional and cable TV channels, include non-broadcast video and TV program categories. Copies of the first responder video have been produced for free distribution, in addition to free downloads from the CI website at www.chlorineinstitute.org.