

1989, November 4

Harbour of Århus, Denmark

Hydrochloric acid (Class 8) in cylindrical tanks; watery liquid, corrosive, reacts with sheet-iron forming flammable hydrogen gas
IDLH 50 ppm (USA)

Summary: On November 4, 1989, the dry cargo ship Julie A reported a **leaking tank** of hydrochloric acid on board. The ship was at this time moored in the harbour of Århus. The leaking tank was one out of three cylindrical tanks stored in a hold below deck. The leaking tank contained a total of 300 tonnes of **33% hydrochloric acid**, which is very corrosive. When hydrochloric acid reacts with sheet-iron, flammable hydrogen gas is formed. The engines of the ship were therefore shut down. When the responders entered the ship they had to wade through knee-deep hydrochloric acid and with a visibility of only two metres. They found a 25 mm hole in the tank which they plugged with a wooden wedge. The tank-coating made of glass-fibre reinforced polyester was neither aimed for, nor resistant to, hydrochloric acid. The acid on the floor had also spread into the ballast tank and threatened to reach through the bottom of the ship. After some trouble finding the appropriate equipment to pump the acid into tanks on shore, the offloading of acid was started. However, quite soon the stability of the ship was decreased and it was therefore decided to move the ship to a dry dock. This was done the next day and then the acid could be pumped out through a drilled hole in the bottom of the ship. It was estimated that the total amount of hydrochloric acid spilled in the harbour was in the range of 1-5 tonnes.

Cause of Accident: Inappropriate choice of tank type for hydrochloric acid as the tank coating made of glass-fibre reinforced polyester was not resistant to hydrochloric acid.

Comments on Response: Although the responders had trouble finding the right equipment, the operation can be considered a success. This incident shows how important it is to have knowledge of the chemicals transported. It is also extremely important to have the right kind of transporting equipment.

Source of Information: 1) Report 107/89 from "Stadsingeniørens kontor" in Århus.
2) An article from Brandværn 2'90 by Knud Aage Eriksen.
(Abstracted July 2002 by Edvard Molitor, Swedish Coast Guard H.Q.)