

# Tech Update

## NH3 Anhydrous Ammonia Permeation

During the transfer of high-pressure ammonia gas through a rubber hose, permeation of the gas will occur. As the gas permeates through the carcass of the hose it can build up between the layers of the hose. If gas build up occurs directly beneath the cover it can separate the cover from the inner layers, creating a cover blister.

For this reason Parker perforates the cover of its' Anhydrous Ammonia hoses (Series 7261 and 7262). The pin-pricked holes allow a path for the gas to escape and greatly reduce the occurrence of cover blisters. However, as the gas escapes it may leave discoloration in the area of the pin-pricked holes.



It should be noted that staining of the hose in the pin-pricked areas does not indicate leakage. However, a visible gas mist escaping through the hose is an indication of leakage. To verify the integrity of a suspect hose assembly, a hydrostatic test can be performed at 200% of the hose maximum rated working pressure. Leakage at this pressure would indicate assembly failure.

Care should be taken to set up a test program for the periodic testing of Anhydrous Ammonia hoses. This will insure the integrity of the hose and hose assemblies. The RMA IP-11-2 publication on the Maintenance, Testing and Inspection of Anhydrous Ammonia hose is an excellent source for establishing these test criteria.

**Parker Hannifin Corporation**  
Industrial Hose Division  
17295 Foltz Industrial Pkwy  
Strongsville, OH 44149  
Telephone: (440) 268-2120  
Fax: (440) 268-2230  
[www.parker.com/indhose](http://www.parker.com/indhose)