



INTERNATIONAL MARKETING, INC. TECHNICAL BULLETIN

SUBJECT: Tire Seal Pump Corrosion

DATE: April 24, 2002

It has been noted that our 5-gallon hand pump for tire sealant may develop areas of corrosion on the carbon steel down tube. This is not an epidemic; the question has been raised on a few occasions over the past 29 years. Following is the reason that this may occur so that you may provide a proper response if questioned.

After examining this condition on the pumps, we found that it does not corrode in the areas where the tire sealant stays in contact with the down tube. The areas in which this corrosion may develop are parts of the pump that are exposed to the air inside of the pail that are not coated by sealant. This is typically in the upper areas of the pump near the lid. If this metal is left uncovered by the sealant product, it has the possibility of becoming corroded. Because the sealant includes water, a water vapor may condense on the pump which would cause this corrosion effect.

This may occur because most liquids have a vapor phase above them. The higher the temperature, the more water vapor, the lower the temperature, the less water vapor. As temperatures fluctuate, the water vapor will condense and become deposited on surfaces. This is similar to dew point on a weather forecast. If the air temperature is high, water vapors (humidity) will form inside the pail. As the temperature cools, the metal parts of the pump assembly cool faster. The water vapor inside the pail will condense on the cool metal parts. This is pure water, therefore there is no corrosion protection where the water meets the metal.

Inside the pail the humidity is very high (nearly 100% at all times). Any temperature swing may create conditions which are good for condensation. This condensation cycle can occur when the temperature is at 100° F or at 35° F. The only way to completely prevent it is to keep the pail in an environmentally controlled atmosphere where the pail and the outside temperature stay the same at all times.

Fortunately, this does not affect the workings of the pump, but does raise questions from time to time concerning why this may occur.

Questions regarding the above technical bulletin may be directed to:

INTERNATIONAL MARKETING, INC.
25 Penncraft Avenue, Suite C
Chambersburg, Pennsylvania 17201
Toll Free: 800-233-7086
E-mail: imi@imiproducts.net
Web Site: www.imiproducts.com