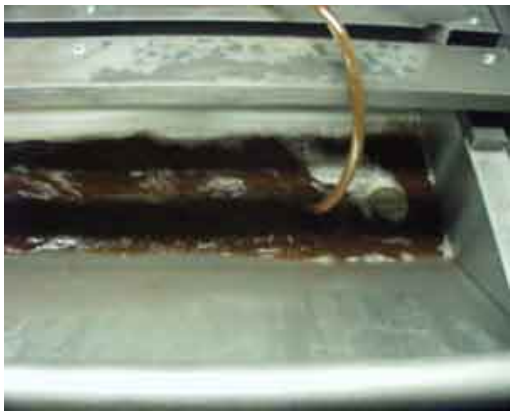
Suspension Liquids



Suspension liquids used in the wet magnetic particle inspection method can be either a well refined light petroleum distillate or water containing additives. Petroleum-based liquids are the most desirable carriers because they provided good wetting of the surface of metallic parts. However, water-based carriers are used more because of low cost, low fire hazard, and the ability to form indications quicker than solvent-based carriers. Water-based carriers must contain wetting agents to disrupt surface films of oil that may exist on the part and to aid in the dispersion of magnetic particles in the carrier. The wetting agents create foaming as the solution is moved about, so anti-foaming agents must be added. Also, since water promotes corrosion in ferrous materials, corrosion inhibitors are usually added as well.

Petroleum based carriers are primarily used in systems where maintaining the proper particle concentration is a concern. The petroleum based carriers require less maintenance because they evaporate at a slower rate than the water-based carriers. Therefore, petroleum based carriers might be a better choice for a system that gets only occasional use or when regularly adjusting the carrier volume is undesirable. Modern solvent carriers are specifically designed with properties that have flash points above 200^{o}F and keep nocuous vapors low. Petroleum carriers are required to meet certain specifications such as AMS 2641.

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