ZR-10E ZYGLO® HYDROPHILIC REMOVER

CLASSIFICATION
Method D Post Emulsifiable, Hydrophilic Remover

GENERAL DESCRIPTION
ZR-10E is a biodegradable, pinkish, slightly viscous liquid. ZR-10E is a 100% active concentrate, which is diluted in water when used as an emulsifier for Zyglo® PE penetrants. ZR-10E is very low in sulfur, chlorine, and sodium content.

Utilization of ZR-10E Hydrophilic Emulsifier affords such advantages as: minimization of fluorescent background on rough surfaces, minimization of bleed-out from hollow parts, and reduced consumption of expendable materials. ZR-10E Hydrophilic Emulsifier yields the most reliable and reproducible test results due to its controlled Zyglo® PE penetrant removal.

TYPICAL PROPERTIES (Not a Specification):

Color	Pinkish Red
Sulfur	Less than 1000 ppm
Chlorine	Less than 1000 ppm
Flash Point	Greater than 200ºF (93ºC) P.M.C.C.
Sodium	Less than 100 ppm
Fluorine	Less than 50 ppm
Water Tolerance	Infinite
Corrosion	Non-Corrosive
NPE - Free	Yes

PRE-RINSE
The pre-rinse step is recommended before the application of a hydrophilic emulsifier like ZR-10E. Pre- rinse is a water spray employed to mechanically reduce the film of PE penetrant on a part before entering the emulsifier bath. This process step prolongs the emulsifier bath life by lowering the amount of penetrant contaminating the bath.

APPLICATION AND EMULSIFICATION

ZR-10E concentrate is diluted in water before it is used as an emulsifier/remover. The hydrophilic emulsifier is generally employed as a spray or an immersion dip.

SPRAY METHOD

If the spray method of emulsifier application is used, an injector or metering pump is used to control the concentration. The general spray concentration range is 1% to 5% remover. Spray removal should be employed under blacklight illumination to control removal of penetrant from the surface. A clean water rinse is recommended to eliminate emulsifier/penetrant residues.

IMMERSION METHOD

If the immersion dip method is employed the general concentration range is 20% remover to water. The recommended concentration is 20% which optimizes remover activity, bath life, economics and process rate. The penetrated part is immersed in the bath, which is gently agitated by mechanical or air means. The length of time the part is in the bath will vary with the concentration of the bath, the type penetrant being used, specification requirements and the desired results. At 20% concentration the immersion contact time generally ranges between 30 - 180 seconds. The immersion dip is followed by a clean water spray to remove any penetrant/emulsifier residues.

The use of foam, created by heavy agitation of the emulsifier bath, as a remover method is possible. The foam will act as a remover, however it is not as effective overall for maximum performance. The foam does not enter hollow parts as readily as the liquid immersion and will therefore be less effective.

CONCENTRATION CONTROL

The concentration of hydrophilic remover baths can be monitored using a refractometer and concentration chart. To create a ZR-10E concentration chart, select three to five accurately known samples (e.g., 5-10-15-20-25% ZR-10E) that have been carefully measured and mixed. Take readings of the known samples using the hand-held refractometer. Plot a chart with the refractometer readings on the vertical y-axis and the known % ZR-10E values on the horizontal x-axis. The water content of the bath can also be determined using the procedure described in ASTM D-95.

SPECIFICATION COMPLIANCE

AMS-2644, ASTM E 1417, AECL, MIL-STD-2132, AMS 2647, ASME B & PV Code, Sec. V, General Electric, Pratt & Whitney, ASTM E 165

CONTAINER SIZE

5 gallon pail, 20 gallon drum, 55 gallon drum