

## ZR-10B ZYGLO<sup>®</sup> HYDROPHILIC REMOVER

### CLASSIFICATION

Method D Post Emulsifiable, Hydrophilic Remover

### GENERAL DESCRIPTION

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

Utilization of ZR-10B Hydrophilic Emulsifier affords such advantages as: minimization of fluorescent background on rough surfaces, minimization of bleed-out from hollow parts, reduced consumption of expendable materials, ease of use in closed loop systems and reduced effluent pollutants. ZR-10B Hydrophilic Emulsifier yields the most reliable and reproducible test results due to its controlled Zyglo<sup>®</sup> PE penetrant removal.

### COMPOSITION

ZR-10B is composed of hexylene glycol and surface active agents.

### TYPICAL PROPERTIES (Not a Specification):

Color:	Pinkish Red
Sulfur:	Less than 1000 ppm
Viscosity @ 100°F:	36.8 to 44.9 cs
Chlorine:	Less than 1000 ppm
Flash Point:	Greater than 200°F (93°C) P.M.C.C.
Sodium:	Less than 100 ppm
Density@60°F:	8.25 lbs/gallon
Fluorine:	Less than 50 ppm
Water Tolerance	Infinite
Corrosion:	Non-Corrosive

### PRE-RINSE

The pre-rinse step is recommended before the application of a hydrophilic emulsifier like ZR-10B. 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. The pre-rinse and hydrophilic emulsifier processes are ideally suited for closed loop low pollution systems.

## APPLICATION AND EMULSIFICATION

ZR-10B 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. The concentration used will determine the amount of contact time required to remove the surface penetrant.

## 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. The attached chart is provided as **reference only**. To create a ZR-10B concentration chart, select three to five accurately known samples (e.g., 5-10-15-20-25% ZR-10B) 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-10B 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

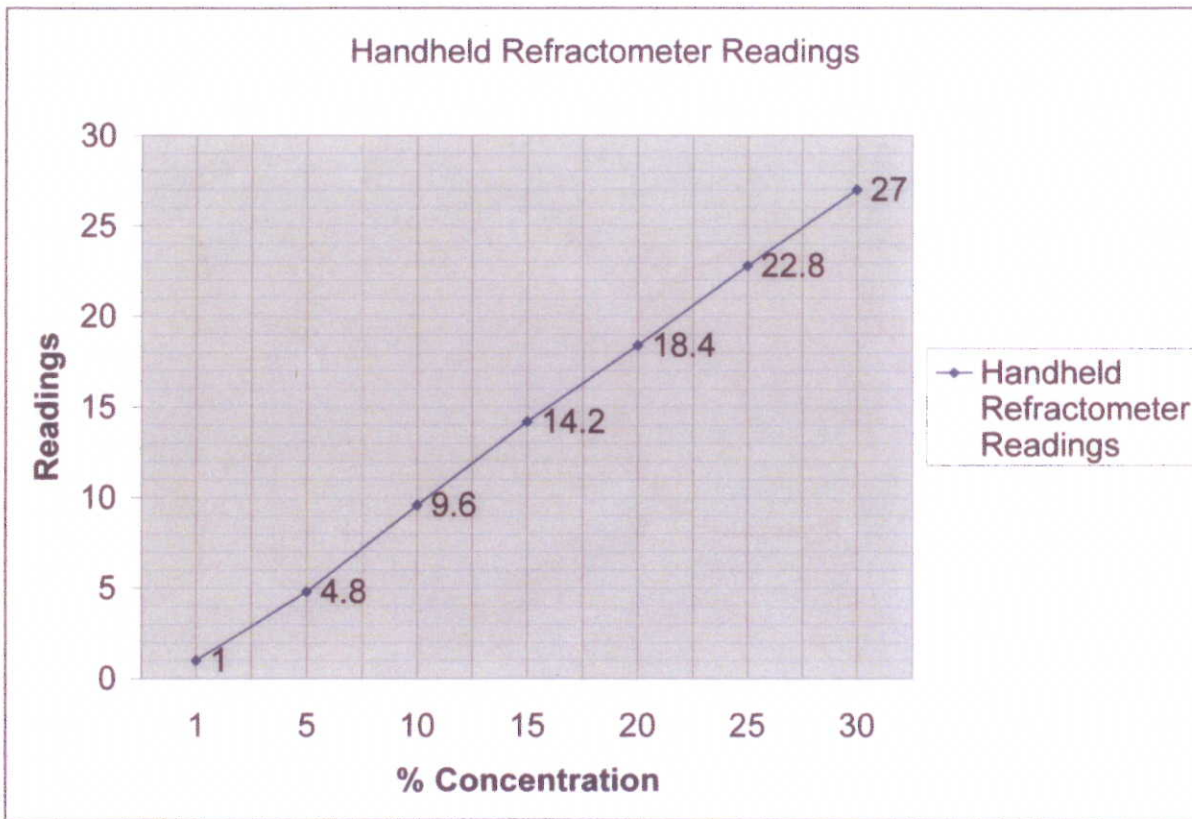
AMS-2644, ASTM E 1417, Boeing BAC 5423 PSD 6-46 or 8-4, MIL-STD-271, Boeing PS-21202, AECL, MIL-STD-2132, Honeywell EMS 52309, AMS 2647, ASME B & PV Code, Sec. V, General Electric P3TF2, Pratt & Whitney PMC 4355-2, ASTM E 165, General Electric P50YP107

## CONTAINER SIZE

5 gallon pail, 20 gallon drum, 55 gallon drum

# ZR-10B

REFERENCE ONLY



ZR-10B CONCENTRATION  
(% by Volume)  
Remover Concentration Chart  
Using a Portable Hand-Held Refractometer.