

## ZYGLO<sup>®</sup> ZP-14A AQUEOUS SOLUBLE DEVELOPER

### CLASSIFICATION

- *Form b, Water Soluble Developer*

### GENERAL DESCRIPTION

Zygro<sup>®</sup> ZP-14A is a white free-flowing powder, which dissolves in water to form a developer solution. ZP-14A is used as a general-purpose water-soluble developer for the enhancement of indications formed by Zygro<sup>®</sup> penetrants. It produces a uniform white porous coating when it dries that is easily removed in post inspection cleaning by a water spray. Once the developer bath has been made up, no in use agitation is required to maintain developer uniformity.

ZP-14A can be used in open tanks without ventilation as there are no toxic fumes or flammability to the bath. The bath may show a trace of fluffy sediment if the water is hard. This sediment does not interfere with developing or removability. For a clear solution, soft water or de-ionized water is recommended.

### COMPOSITION

Zygro<sup>®</sup> ZP-14A is composed of organic salts, surface active agents, and corrosion inhibitors.

### TYPICAL PROPERTIES (Not a specification)

Typical Properties	ZP-14A
Form	White Powder
Recommended Concentration Range	1.0 lbs/gal - 2.0 lbs/gal
pH of Bath	10.5
Sulfur	<1000 ppm
Chlorine	<1000 ppm
NPE-Free	Yes

## **METHOD OF APPLICATION**

Zyglo<sup>®</sup> ZP-14A can be applied by immersion dip, spray or flow on techniques, with immersion being the preferred method. If the immersion dip application is used, care must be taken to avoid transferring penetrant into the developer bath. Complete removal of surface penetrant will prolong the developer bath life. The developer bath temperature should not exceed 120°F. If the spray or flow on techniques are used, care should be taken to avoid foaming as foam bubbles will cause holes in the developer film when they break.

The developer is applied after the surface penetrant has been removed. Complete coverage of the part is essential to quality inspection. The application time is only long enough to cover the part completely. Additional contact with the developer bath may result in reduced sensitivity due to removal of penetrant from shallow discontinuities by detergent action. For best results, forced warm air drying (140°F/60°C) is recommended after the application of developer. Once the developer is dry, the part should be removed from the dryer to prevent degrading the penetrant's fluorescence.

## **DEVELOPER BATH MAKE-UP**

ZP-14A's recommended use concentration range is 1.0 - 2.0 lbs/gal of water. The developer tank should be cleaned before the developer bath is made up. Fill the tank with the appropriate amount of water and slowly add ZP-14A powder to the water while stirring bath until powder is dissolved. ZP-14A powder is dusty and use of a simple filter mask may be desirable when handling it. To speed up bath preparation, warm water can be used. Developer bath temperature should not exceed 120°F. Once the powder is dissolved, agitation is no longer required.

## **TEMPERATURE**

Water washable penetrants are generally used between 40°F - 125°F.

## **CONCENTRATION CONTROL**

The concentration can be monitored using a hydrometer or by taking a known volume of the bath, evaporating off the water and then weighing the residue. When using a hydrometer, refer to the density concentration chart provided.

**SPECIFICATION COMPLIANCE:** AMS 2644, MIL-STD-271, ASTM E 1417, MIL-STD-2132, Boeing BAC-5423 PSD 6-46 or 8-4, AMS-2647, Garrett EMS 52309, ASME B & PV Code, Sec. V, General Electric P3TF2, ASTM E165, AECL.

## **PACKAGING**

20 Lb. Container.

ZP-14A DEVELOPER  
Density Vs. Concentration Chart

