# ZP-14A

## Water-soluble Developer

ZYGLO® ZP-14A is a free-flowing powder developer which dissolves in water to form a clear, biodegradable solution. It forms an uniform white coating on the test part surface, providing a contrasting background around penetrant indications.

ZP-14A is recommended for use with our post-emulsifiable penetrants (ZL-2C, ZL-27A, ZL-37).

### FEATURES

- Bright, highly-defined indications
- Can be cleaned off with water
- Even, uniform coverage
- Chromate and nitrite free

### SPECIFICATION COMPLIANCE

- AMS2644
- ASME BPVC-V
- ASTM E165/E165M-18
- ASTM E1417/E1417M
- MIL-STD-2132D

### APPLICATIONS

**Defect location: open to surface**

**Ideal for:**

- Use with our post-emulsifiable penetrants
- Castings
- Forgings

**Defect examples:**

- Cracks
- Porosity

### COMPOSITION

A blend of organic salts, surface active agents and corrosion inhibitors.

### PRODUCT PROPERTIES

| | |
|---|---|
| **Form and colour** | White powder |
| **AMS 2644 class** | Form b - Type 1 |
| **Density** | 0.6 g/cm$^3$ |
| **Sulphur content** | < 1,000 ppm |
| **Halogen content** | < 1,000 ppm |
| **Corrosion** | Meets AMS 2644 |

Like all Magnaflux materials, ZP-14A is closely controlled to ensure batch-to-batch consistency, optimum process control and inspection reliability.

### USER RECOMMENDATIONS

| | |
|---|---|
| **NDT Method** | Penetrant Testing |
| **Storage temperature** | 10°C to 30°C |
| **Usage temperature** | 5°C to 55°C |
| **Cleaner/remover** | SKC-S, ZE-4B, ZR-10C |
| **Post-emulsifiable penetrants** | ZL-2C, ZL-27A, ZL-37 |

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## INSTRUCTIONS FOR USE

Before using any developer, ensure the test surface is clean, free from excess penetrant, and dry. Residue from water-based penetrants can be removed with a water spray; solvent-based penetrants by wiping with a solvent cleaner.

With **visible penetrants**, cracks will appear as red lines and porosity as spots. If you see a general reddish colour or pink film, that means the penetrant was not completely removed.

With **fluorescent penetrants**, indications will fluoresce bright yellow/green under UV light (we recommend our EV6000 UV-LED lamp). If you see a general greenish film, that means the penetrant was not completely removed.

Apply by immersion dip, spray or flow on techniques (see below) for just long enough to completely cover the part.

Dry the part thoroughly. For best results, use forced warm air drying at around 60ºC. Remove from the dryer as soon as the developer is dry or it could bake on and be difficult to remove.

Allow a minimum of 10 minutes development time before inspecting the component.

After inspection, wash off the developer film with a water spray and, if necessary, a brush.

### Spray or flow-on application

Avoid foaming as foam bubbles in the developer film can cause voids in the dried coating.

### Immersion dip application

Make up a developer bath:

- Ensure that the developer tank and the part to be tested are clean. Excess penetrant will contaminate the bath and shorten its life.
- Fill the tank with the appropriate amount of water (see table below) that is no hotter than 50°C. We recommend using soft water or de-ionised water where possible. ZP-14A baths may show traces of fluffy sediment in hard water; this will not interfere with the developer or its removability.
- Wearing a suitable filter face mask, slowly add the required amount of powder (see table below) while agitating the water.
- Continue mixing until the powder is fully dispersed.
- Don't leave the component in the bath for too long - this will reduce the sensitivity of the process by removing penetrant from shallow discontinuities.

We recommend the following concentrations for the make-up of your developer bath:

| Penetrant type | Concentration of powder per litre of water |
|---|---|
| ZYGLO | 120 - 200 g |

The concentration should be monitored on a regular basis to maintain the correct working strength is maintained. To do this, take a known volume of the bath, evaporate off the water and weigh the residue. The concentration can be calculated as follows:

For a 50 ml sample volume: **Weight of residue (g) x 20 = Concentration (g per litre)**

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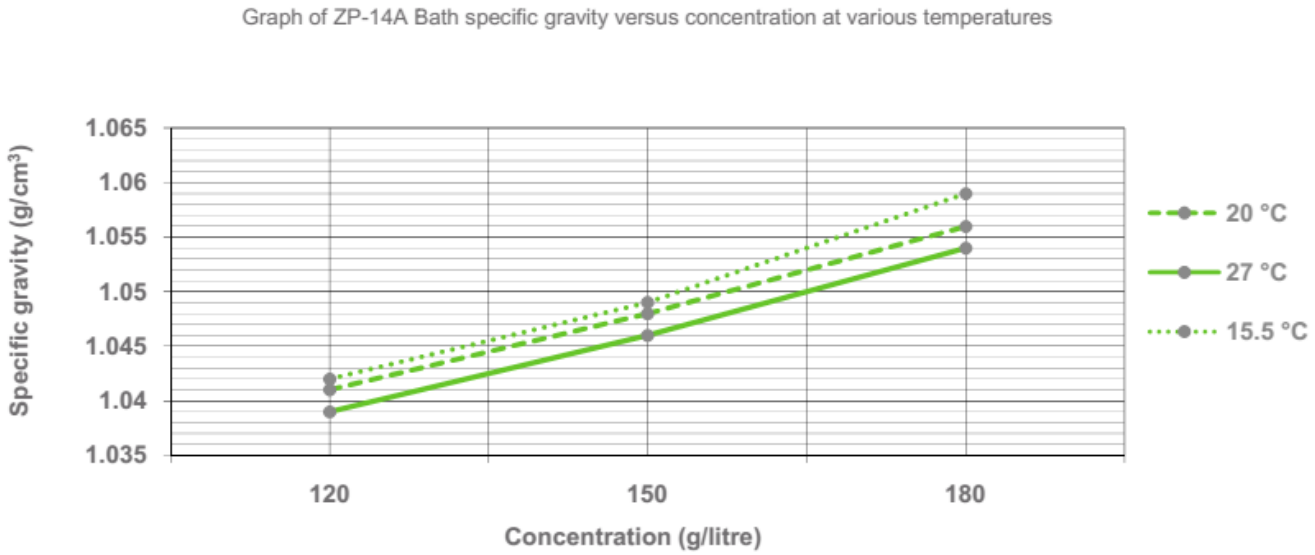
A less accurate method is to measure the specific gravity of the bath and cross-reference with the graphs below:




## PACKAGING AND PART NUMBERS


055C010

## HEALTH AND SAFETY

Review all relevant health and safety information before using this product. For complete health and safety information, refer to the Safety Data Sheets, which are available at **www.magnaflux.eu**