ZL-2C, ZL-27A, ZL-37

Post-Emulsifiable Fluorescent Penetrants

ZYGLO® ZL-2C, ZL-27A and ZL-37 are fluorescent post-emulsifiable penetrants designed to be removed from the test part surface by emulsifiers or solvent. Both Method B lipophilic emulsifier ZE-4B and Method D hydrophilic emulsifier ZR-10E can be used to remove these penetrants. With a UV-A light source, indications will appear as a bright green-yellow fluorescence.

Our post-emulsifiable fluorescent penetrants have a high flash point, and are designed to be used in open dip tanks.

FEATURES

- Bright indications
- Minimal background fluorescence
- High flash point
- Available in medium, high and ultra-high sensitivity
- Immiscible with water, which protects against over-washing and allows the penetrants to separate easily from water.

APPLICATIONS

Defect location: open to surface

Ideal for:

- Castings
- Forgings
- Extrusions
- Welds
- Rough surface finish

Ideal for:

- Cracks
- Laps
- Seams
- Delamination
- Porosity

COMPOSITION

A blend of petroleum distillates, oils, alkyl aryl phosphate and fluorescent dyes.

PRODUCT PROPERTIES

Form and colour	Green-yellow liquid
Corrosion	Meets AMS 2644
Sulphur content	< 300 ppm
Chloride content	< 300 ppm
Fluoride content	< 50 ppm

	ZL-2C	ZL-27A	ZL-37
Density (g/cm^3)	0.89	0.93	0.95
Viscosity at 38°C (mm^2/s)	6.0	9.2	13.5
AMS 644 sensitivity	Level 2 - Medium	Level 3 - High	Level 4 - Ultra-high

Like all Magnaflux materials, our post-emulsifiable fluorescent penetrants are closely controlled to ensure batch-to-batch consistency, optimum process control and inspection reliability.

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SPECIFICATION COMPLIANCE

	ZL-2C	ZL-27A	ZL-37
AMS2644	✓	✓	✓
ASME B & PV Code, Sec V	✓	✓	✓
ASTM E1135		✓	
ASTM E165/E165M	✓	✓	✓
ASTM E1417/E1417M	✓	✓	✓
EN ISO 3452-2		✓	
MIL-STD-2132D	✓	✓	✓
MIL-STD-271F	✓	✓	✓
Pratt & Whitney PMC	4352-2	4353-2	4354-2
Rolls Royce RRP 58003 (CSS 232)	✓	✓	✓
SAFRAN Pr 5000/In 5000	✓	✓	✓

USER RECOMMENDATIONS

NDT Method	Penetrant Testing, Fluorescent
Storage temperature	10°C to 30°C
Usage temperature	5°C to 55°C (aerosol -5°C to 50°C)
Flash point	> 93°C
AMS 2644 class	Type 1, Method B/C/D
Coverage	20 - 30m² per litre (bulk product) 10 - 15m² per aerosol
Pre-cleaner	SPOTCHECK® SKC-S
Hydrophilic emulsifier	ZYGLO® ZR-10C
Lipophilic emulsifier	ZYGLO® ZE-4B
Dry developer	ZYGLO® ZP-4B
Solvent-based developers	SPOTCHECK® SKD-S2 ZYGLO® ZP-9F
Water-based developers	ZYGLO® ZP-14A ZYGLO® ZP-5B
UV lamp	EV6000

INSTRUCTIONS FOR USE

Pre-clean the test part and allow to dry. The surface must be free from oil, grease and any other contaminant.

Apply the penetrant by immersion dip, brush, flow on, conventional or electrostatic spray. The test area must be completely covered with penetrant.

Allow contact time of 2 - 5 minutes minimum. 10 minutes should be adequate for most situations, although specific process specifications may require longer - check the controlling process specification (where applicable).

If you're using a hydrophilic emulsifier, pre-rinse the test part with plain water before appying the emulsifier by spray (hydrophilic) or immersion (lipophilic). Leave for the required length of time then wash with a water spray.

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INSTRUCTIONS FOR USE continued

The run-off from a pre-rinse can be treated to separate out the water, which can then be re-used for other pre-rinses. Dye penetrant process rinse waters should not be discharged to local authority waterways or sewers without some form of effluent treatment. We can advise on suitable equipment for this purpose; for more information, please contact us.

Dry the test part by placing in a controlled recirculating warm air dryer at a temperature of 50°C - 70°C.

Apply a developer to maximise the sensitivity of the penetrant and to provide a white contrasting background. There are three types of suitable developer:

Dry powder
Free-flowing, lightweight powders which are applied to the dry component by powder storm, dusting, electrostatic spray or puffer.

Solvent-based
Qick-drying materials which are applied to the dry component by spraying.

Aqueous or water-based
Apply before drying by dipping or spraying. NB: To maximise penetrant sensitivity, do NOT leave parts in aqueous developers for any length of time.

Inspect your test part using a suitable UV source. Any defect indications will fluoresce a bright green-yellow when exposed to UV(A) light at a peak wavelength of 365 nm.

If required, you can clean your test part after inspection. Developer residues can be removed either by wiping with a cloth or by a water and detergent wash. Penetrant residues can be removed by vapour degreasing or solvent soak.

PACKAGING AND PART NUMBERS

ZL-2C	ZL-27A	ZL-37
 056C079	 066C017	 066C020
 056C080	 066C016	 066C019
	 008A002 (x 10)	

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 eu.magnaflux.com.