

ZL-15B, ZL-19, ZL-60C, ZL-60D, ZL-67B, ZL-56

Water-washable Fluorescent Penetrants

ZYGLO® ZL-15B, ZL-19, ZL-60C, ZL-60D, ZL-67B and ZL-56 are fluorescent water-washable penetrants with excellent controlled washability over a wide temperature range. With a UV-A light source, indications will appear as a bright green-yellow fluorescence.



Our water-washable fluorescent penetrants are used in a wide range of sensitivity applications, from ultra-low to ultra-high. They exhibit outstanding penetrating characteristics, giving you maximum reliability in locating surface-open flaws and defects.

BENEFITS

Increase indication detection

- Increase detection of defects in cast parts, such as hot tears, laps, or cold shuts
- Indications stand out more because of reduced background fluorescence, even on rough cast surfaces
- Makes indications stand out more by easily washing excess penetrant off with water

Speed up your inspection process

- Quickly apply and remove penetrant due to high surface wetting and easy washability
- Spray-friendly and will not clog nozzles in automated lines, for less maintenance downtime

Affordable performance

- Quickly apply penetrant with high surface wetting
- Easily wash off with water
- Use less penetrant over time because of lower drag-out and slower evaporation
- Penetrant can be reused from the dwell cycle, so more of it stays in your tank instead of getting carried away on parts

FEATURES

- Bright indications
- Excellent washability
- Wide range of sensitivity applications

APPLICATIONS

Defect location: open to surface

Ideal for:

- Castings
- Forgings
- Rough surface finish
- Seams
- Laps
- Cold shuts
- Laminations
- Cracks
- Delamination
- Porosity

COMPOSITION

A blend of non-ionic surfactants, petroleum distillate and fluorescent dyes.

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USER RECOMMENDATIONS

NDT Method	Penetrant Testing, Fluorescent
Storage temperature	10°C to 30°C
Usage temperature	5°C to 55°C (bulk); -5°C to 50°C (aerosol)
Coverage	20 - 30m ² per litre; 10 - 15m ² per aerosol
Cleaner/remover	SKC-S
Dry developer	ZP-4B
Solvent-based developers	SKD-S2, ZP-9F
Water-based developers	ZP-14A, ZP-5B
UV lamp	EV6000, ST700

PRODUCT PROPERTIES

Form and colour	Green-yellow liquid
Flash point	> 93°C
Sulphur content	< 300 ppm
Chloride content	< 300 ppm
Fluoride content	< 50 ppm
Sodium content	< 100 ppm

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AMS 2644 class	Type 1, Method A	Type 1, Methods A & C	Type 1, Methods A & C	Type 1, Methods A & C	Type 1, Methods A & C	Type 1, Methods A & C
Density	0.86 g/cm ³	0.86 g/cm ³	0.88 g/cm ³	0.92 g/cm ³	0.95 g/cm ³	1.01 g/cm ³
Viscosity at 38°C	5.2 mm ² /s	5.6 mm ² /s	7.0 mm ² /s	10.6 mm ² /s	20.0 mm ² /s	19.0 mm ² /s
AMS 2644 sensitivity	Level 0.5 Ultra-low	Level 1 Low	Level 2 Medium	Level 2 Medium	Level 3 High	Level 4 Ultra-high
EN-ISO 3452 sensitivity	-	Level 1 Low	Level 2 Medium	-	Level 3 High	-

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

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SPECIFICATION COMPLIANCE

	ZL-15B	ZL-19	ZL-60C	ZL-60D	ZL-67B	ZL-56
AMS2644	✓	✓	✓	✓	✓	✓
ASME BPVC-V	✓	✓	✓	✓	✓	✓
ASTM E1135			✓			
ASTM E165/E165M-18	✓	✓	✓	✓	✓	✓
ASTM E1417/E1417M	✓	✓	✓	✓	✓	✓
EN ISO 3452-2		✓*	✓		✓	
MIL-STD-2132D	✓	✓	✓	✓	✓	✓
Pratt & Whitney PMC		4350-2	4351-8	4351-2	4360-10	
Rolls Royce RRP 58003 (CSS 232)			✓	✓	✓	✓
SAFRAN Pr 5000/In 5000			✓	✓		

* water absorbency 6.10, requirement of >5% not met

PACKAGING AND PART NUMBERS

ZL-15B  25 L 056C061	ZL-19  25 L 056C185	ZL-60C  25 L 056C205	ZL-60D  25 L 056C010	ZL-67B  25 L 056C034	ZL-56  25 L 056C201
 200 L 056C062	 200 L 056C186	 200 L 056C206	 200 L 056C011	 200 L 056C035	 200 L 056C202
 008A008 (x 10)					

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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).

Remove excess penetrant by thoroughly spraying the test part with clean water at 10°C - 40°C. This should be carried out under a UV(A) source so you can monitor the penetrant removal.

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

Quick-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 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.

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