

ZYGLO ZL-15B ZL-60D

ZL-19 ZL-67B

ZL-60C ZL-56



WATER-WASHABLE FLUORESCENT PENETRANTS

General Description

Our Zyglo water-washable fluorescent penetrants are used for 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.

Applications

These Zyglo penetrants are safe to use on most engineering and aerospace alloys including aluminium, steel, nickel and titanium. They are typically used to find cracks, seams, laps, laminations and porosity on castings, turbine components, welds, forgings, and rough and machined surfaces.

Benefits

- Wide range of sensitivity applications
- Excellent controlled washability over a wide temperature range and variable dwell times
- Produce stable fluorescent indications under normal drying conditions.

Composition

The penetrants consist of a blend of non ionic surfactants, petroleum distillate and fluorescent dyes.

Typical Properties (not a specification)

Property	ZL-15B	ZL-19	ZL-60C	ZL-60D	ZL-67B	ZL-56
Colour	Bright green-yellow					
Odour	Bland					
Flash point	> 93°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
Corrosion	Meets AMS 2644					
Sulphur content	< 300 ppm					
Chloride content	< 300 ppm					
Fluoride content	< 50 ppm					
Sodium content	-	< 100 ppm	-	< 100 ppm	< 100 ppm	-
AMS 2644 class	Type 1, Method A					
AMS 2644 sensitivity	Level 0.5 Ultra-low	Level 1 Low	Level 2 Medium	Level 2 Medium	Level 3 High	Level 4 Ultra-high
Storage temperature	10°C - 30°C					
Usage temperature	10°C - 55°C (aerosols < 50°C)					
Coverage	1 litre covers approx. 20 - 28 m ²					

Like all Magnaflux materials, our Zyglo products are closely controlled to ensure batch-to-batch consistency, optimum process control and inspection reliability.

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General Method of 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 (see opposite for our recommendations):

- 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: applied before drying by dipping or spraying.

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.

Recommended Products

Product type	Product Name(s)	Description
Cleaner/remover	SKC-S	Solvent-based
Emulsifiers	ZR-10C	Hydrophilic
	ZE-4B	Lipophilic
Developers	ZP-4B	Dry
	SKD-S2 or ZP-9F	Solvent-based
	ZP-14A or ZP-5B	Aqueous/ water-based *
UV lamps	ZB-100F or ZB-100-LED	

* Note: To maximise penetrant sensitivity, parts should not remain in aqueous developers for any length of time.

Specification Compliance

Specification	ZL-15B	ZL-19	ZL-60C	ZL-60D	ZL-67B	ZL-56
AMS2644F	✓	✓	✓	✓	✓	✓
ASME B & PV Code, Sec V	✓	✓	✓	✓	✓	✓
ASTM E1135	✓	✓	✓	✓	✓	✓
ASTM E165	✓	✓	✓	✓	✓	✓
ASTM E165M	✓	✓	✓	✓	✓	
ASTM E1417	✓	✓	✓	✓	✓	✓
ASTM E1417M	✓	✓	✓	✓	✓	
EN ISO 3452-2		✓	✓		✓	
MIL-STD-2132D	✓	✓	✓	✓	✓	✓
MIL-STD-271F	✓	✓	✓	✓	✓	✓
Pratt & Whitney		PMC 4350-2	PMC 4351-8	PMC 4351-2	PMC 4360-10	
Rolls Royce RRP 58003 (CSS 232)			✓	✓	✓	✓
SAFRAN Pr 5000/In 5000			✓	✓		

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Availability

	ZL-15B	ZL-19	ZL-60C	ZL-60D	ZL-67B	ZL-56
Unit	Part numbers (if applicable)					
10 x 400ml aerosol	N/A	N/A	008A008	N/A	N/A	N/A
25 litre container	056C061	056C185	056C205	056C010	056C034	056C201
200 litre drum	056C062	056C186	056C206	056C011	056C035	056C202

Health and Safety

Read the relevant Safety Data Sheet for this product before use. Safety Data Sheets are available on request from your Magnaflux distributor or via the Magnaflux website: www.eu.magnaflux.com