

# ZL-37

## Level 4 Post Emulsifiable Fluorescent Penetrant

Essential for critical component applications, ultra-high sensitivity ZL-37 post-emulsifiable penetrant is designed for detecting fine, tight discontinuities in safety-critical components, such as titanium turbine components, and in high-stress parts, such as investment castings.

This Type 1 penetrant is non-water-soluble so there is minimal risk of washing ZL-37 penetrant from a fine or shallow defect which makes this penetrant inspection the most reliable, dependable form of PT testing.

ZL-37 has a high flash point and provides long tank life when used in

open dip tanks, but this penetrant can also be applied in a variety of other ways, including electrostatic spray.

ZL-37 can be removed with ZE-4E Method B lipophilic emulsifier or ZR-10E Method D hydrophilic emulsifier.

ZL-37 is listed on the QPL SAE AMS 2644 Qualified Product List and is approved for use by Pratt & Whitney.



### BENEFITS

#### Improve indication detection in the most critical applications

- Creates the clearest, brightest indications for even the finest flaws due to very strong UV and thermal stability
- Highest fluorescent brightness of any Level 4 penetrant for high-contrast indications that are easy for inspectors to see – even when the indications are very small
- Indications stand out more since background fluorescence is minimized; emulsifiers only remove surface penetrant without the risk of over-washing

#### Wide range of inspections

- Inspect a wide range of high-value components without fear of corrosion or specification non-conformance
- Meets all major industry and NDT specification requirements, including Aerospace Prime and OEM specs, AMS 2644 and ISO 3452

#### Maximize penetrant inspection process control

- Prevents over-washing since ZL-37 cannot be removed with water (unless combined with an emulsifier)
- PE penetrant system is less susceptible to human error since only surface penetrant is removed in the final rinse stage

#### Maximize operator comfort and safety

- Promotes better inspection quality by providing the operator with a more comfortable work environment
- Reduces discomfort from strong odors
- Exceeds all EHS requirements

## FEATURES

- Level 4 ultra-high sensitivity
- Post emulsifiable
- Bright, high-contrast indications
- Resists over-washing or over-removal
- High flash point
- Wide range of application methods
- Low odor
- Very low toxicity
- Alloy compatibility
- Very high thermal resistance
- Very high UV stability
- High dye content
- QPL SAE AMS 2644 Qualified Product List
- Approved for use by Pratt & Whitney

## SPECIFICATION COMPLIANCE

- AECL
- AMS 2644
- ASME BPVC
- ASTM E1417
- ASTM E165
- Boeing BAC 5423 PSD 6-46 or 8-4
- Boeing PS-21202
- ISO 3452
- MIL-STD-2132
- MIL-STD-271
- Navsea T9074-AS-GIB-010/271
- Pratt & Whitney PMC 4354
- QPL SAE AMS 2644

## PACKAGING

Aerosol can, case of 12	01-3188-78
1 gal / 3.78 L, case of 4	01-3188-35
5 gal / 18.9 L pail	01-3188-40
20 gal / 75.7 L drum	01-3188-30
55 gal / 208 L drum	01-3188-45

## APPLICATIONS

**Defect location:** open to surface

**Ideal for:**

- Detecting fine to very-fine discontinuities
- Precision components
- Safety-critical components
- Investment castings
- High-stress parts
- Smooth, machined surface finish
- Non-porous surfaces

**Defect examples:**

- Finished surface cracks
- Seams
- Porosity
- Scratches

## PROPERTIES

<b>Flash Point</b>	> 200°F / 93°C
<b>Density</b>	0.98 g/cc / 8.15 lb/gal
<b>Viscosity (at 100°F/38°C)</b>	13.71 cs
<b>NPE-Free</b>	Yes

## USE RECOMMENDATIONS

<b>NDT Method</b>	Penetrant Testing, Fluorescent
<b>Type</b>	1
<b>Method(s)</b>	B / C / D
<b>Sensitivity Level</b>	4, ultrahigh sensitivity
<b>Required Equipment</b>	UV light source
<b>Usage Temperature</b>	40 to 125°F / 5 to 52°C
<b>Storage Temperature</b>	50 to 86°F / 10 to 30°C

## HEALTH AND SAFETY

Review all relevant health and safety information before using this product. For complete health and safety information, refer to the product Safety Data Sheet, which is available at [www.magnaflux.com](http://www.magnaflux.com).