

# 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

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

