

# ZL-19

## Level 1 Water Washable Fluorescent Penetrant

A water-removeable Level 1 penetrant, ZL-19 is designed for use on rough or unmachined surfaces such as castings and forgings to find larger discontinuities in non-safety critical components. It is ideal for inspecting automotive and general industrial components such as engine cylinder blocks, power train components, rocker arms, pistons, steering knuckles, etc.

ZL-19 washes off parts with ease, leaving less background for clearer indications – even on rough surfaces. The quick rinsing reduces water usage in the inspection process which helps users reduce their over-all cost per part by reducing penetrant loss through drag-out, speeding up the washing and inspection process, and cutting rinse water costs.

ZL-19 can be used with ZP-4B dry powder developer, with ZP-5B water suspendible developer in an agitated tank or with ZP-9F non-aqueous developer. With a UV-A light source, indications will appear as a bright green-yellow fluorescence.

ZL-19 is listed on the QPL SAE AMS 2644 Qualified Product List.



### BENEFITS

#### Increase indication detection on cast parts & rough surfaces

- 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

#### Speed up your inspection process

- Quickly apply and remove penetrant due to high surface wetting and easy washability
- ZL-19 is spray-friendly and will not clog nozzles in automated lines, for less maintenance downtime

#### Performance value

- Use less penetrant per part, thanks to lower drag out
- Penetrant can be reused from the dwell cycle, so more of it stays in your tank instead of getting carried away on parts

#### 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 1 sensitivity
- Water washable
- Excellent rough surface washability
- Bright, high contrast indications
- Clean rinsing on cast parts
- Won't clog spray nozzles in automated systems
- Good surface wetting
- High flash point
- Easy washability
- Less time to rinse
- Use less penetrant per part

## APPLICATIONS

**Defect location:** open to surface

**Ideal for:**

- Castings
- Forgings
- Rough surface finish
- Unmachined parts
- Engine cylinder blocks
- Power train components
- Rocker arms
- Pistons
- Steering knuckles
- Automated penetrant lines

**Defect examples:**

- Cracks
- Seams
- Cold shuts
- Delamination
- Porosity
- Hot tears
- Laps

## PROPERTIES

|  |                         |
|--|-------------------------|
| <b>Flash Point</b>                     | > 200°F / 93°C          |
| <b>Density</b>                         | 0.85 g/cc / 7.08 lb/gal |
| <b>Viscosity<br/>(at 100°F / 38°C)</b> | 5.62 cs                 |
| <b>NPE-Free</b>                        | Yes                     |

## SPECIFICATION COMPLIANCE

- AECL
- AMS 2644
- ASME
- ASTM E1417
- ASTM E165
- Boeing BAC 5423 PSD 6-46 or 8-4
- Boeing PS-21202
- MIL-STD-2132
- MIL-STD-271
- NAVSEA T9074-AS-GIB-010/271
- QPL SAE AMS 2644

## USE RECOMMENDATIONS

|                            |                                   |
|----------------------------|-----------------------------------|
| <b>NDT Method</b>          | Penetrant Testing,<br>Fluorescent |
| <b>Type</b>                | 1                                 |
| <b>Method(s)</b>           | A / C                             |
| <b>Sensitivity Level</b>   | 1, low 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           |

## PACKAGING

|                     |            |
|---------------------|------------|
| 5 gal / 18.9 L pail | 01-3263-40 |
| 55 gal / 208 L drum | 01-3263-45 |

## 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).