



Penetrant Professor Approved



Met-L-Chek Company manufactures a complete line of penetrants used in the fluorescent (**Type 1**), visible (**Type 2**), and dual response (**Type 3**) dye penetrant inspection process. All Met-L-Chek Company penetrants are sold under the **Met-L-Chek**® and **Pen-Chek**® trademarks. Met-L-Chek Company products are manufactured under license in The Netherlands by NDT Europa.

RLP-1 is a water based, dual light response visible and fluorescent (**Type 3**) penetrant. It is designed for through leak testing and general metal working surface flaw detection. It is a biodegradable penetrant being free of solvents and oils. **RLP-1** is used on plastics that may be attacked by more traditional inspection penetrants.

RLP-1 gives visible red indications under white light and fluorescent orange indications under UV-A illumination. In the fluorescent mode of inspection smaller discontinuities may be detected than in the visible mode. Being a water based penetrant it may be diluted with water to fit the inspection needs. The most common dilutions are 1:1 and 3:1 water to **RLP-1**. The use of developer **D-70** will enhance flaw detection. It is low in Sulfur, Chlorine, Fluorine and other Halogens, making it safe for use on Titanium and high Nickel alloys.

Guide to METHOD “A” processing

Guide to METHOD “C” wipe off processing

1. Part must be clean, dry and at a temperature of 4.4°-52°C (40°- 125°F) before penetrant is applied.
2. Apply **RLP-1** penetrant using spray, immersion, or wipe on.
3. Wait a minimum of 10 minutes; 20 minutes if temperature is 4.4°-10°C (40-50°F).
4. Gently wash part; water temperature 10°-38°C (50°-100 °F). Water pressure low, Distance > 30cm (> 12 inches). Wash time- only long enough to remove surface penetrant under white light.
5. Dry part; temperature not to exceed 71°C (160°F), time - only long enough to dry surface.
6. Apply non-aqueous developer **D-70** by spraying.
7. Wait a minimum of 10 minutes before inspection. Maximum time is 1 hour.
- 8 For fluorescent inspection use UV-A illumination of >1000 μw/cm² @ 15inches (38.1 cm) in a darkened area of <21 lux visible light (<2 footcandles). For visible inspection use lighting of 1100 lux/m² (100 footcandles) minimum.

1. Part must be clean, dry and at a temperature of 4.4°-52°C (40°- 125°F) before penetrant is applied.
2. Apply penetrant using spray, immersion, or wipe on.
3. Wait a minimum of 10 minutes; 20 minutes if temperature is 4.4°-10°C (40-50°F).
4. Moisten cloth with remover or water and wipe penetrant from the surface. **Do not** spray remover on surface to remove penetrant, as sensitivity will be impaired.
5. Apply nonaqueous developer **D-70**, by spraying.
6. Wait a minimum of 10 minutes before inspection.
7. For fluorescent inspection use UV-A illumination of >1000 μw/cm² @ 15inches (38.1 cm) in a darkened area of <21 lux visible light (<2 footcandles). For visible inspection use lighting of 1100 lux/m² (100 footcandles) minimum.

Through Leak Method

For through leak testing the penetrant is applied to one side of the component and then developer is applied to the opposite side. Thickness of the component will effect the dwell time which may range from 10 minutes to 2 hours.



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RLP-1

Fluorescent & Visible Penetrant

Typical Physical Properties

Form: red liquid
 Density: 1.02 Kg/L
 Flash Point: none
 Viscosity: 7.8 mm²/s, concentrate
 Viscosity: 1.6 mm²/s, 3:1 dilution
 Corrosion of aluminum: none
 Corrosion of carbon steel: none
 Corrosion of magnesium: none
 Corrosion of stainless steel: none
 Corrosion of titanium: none
 Chloride content: < 1000 ppm (< 0.1%)
 Fluoride content: < 1000 ppm (< 0.1%)
 Sulfur content: < 1000 ppm (< 0.1%)
 Mercury: none
 VOC's: 0 g/L
 Ozone layer depleting substances: none
 PCB's: none

Product Availability

1 gallon (3.7L) plastic bottle
 5 gallon (18.9L) plastic jug with our spout
 55 gallon (208L) plastic drum

The warranty shelf life of the product is 3β years from date of batch approval.

Specifications

ASTM E-165

ASTM E-1417

GHS Information



Danger

GHS Hazard Statements:

- H302** Harmful if swallowed.
- H315** Causes skin irritation.
- H318** Causes serious eye damage.
- H373** May cause damage to organs (kidney) through prolonged or repeated exposure if swallowed.
- H412:** Harmful to aquatic life with long lasting effects.

GHS Precautionary statements:

- P102:** Keep out of reach of children.
- P261:** Avoid breathing dust/fumes/gas/mist/vapors/spray.
- P264:** Wash skin thoroughly after handling.
- P273:** Avoid release to the environment.
- P280:** Wear protective glove/clothing/eye protection/face protection.
- P284:** In case of inadequate ventilation wear respiratory protection.



GHS response statements:

- IF INHALED:** Remove person to fresh air and keep comfortable for breathing, get medical advice/attention if you feel unwell.
- IF ON SKIN:** Wash with plenty of water. If skin irritation occurs, get medical advice/attention.
- IF IN EYES:** Rinse cautiously with water for several minutes. Remove contact lenses, if present and easily to do. Continue rinsing, get medical attention.
- IF SWALLOWED:** Immediately call a poison center/doctor/physician. Do Not induce vomiting.
- IF ON CLOTHING:** Take off contaminated clothing and wash before reuse.

Transport:

- DOT- not regulated
- IATA- not regulated
- IMDG- not regulated

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