

PRODUCT DATA SHEET

1
3/09



PENETRANT PROFESSOR APPROVED

RLP-1
Visible Penetrant



Met-L-Chek Company manufactures a complete line of penetrants used in the fluorescent (**Type 1**) and visible (**Type 2**) dye penetrant inspection process. All Met-L-Chek Company penetrants are qualified to **AMS-2644E** and 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 used 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 "C" wipe off processing per ASTM E-1417-05

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 $\mu\text{w}/\text{cm}^2$ @ 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.



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 jug
5 gallon (18.9L) plastic jug

Specifications

ASTM E-165
ASTM E-1417

The warranty shelf life of the product is 5 years
from date of batch approval.

Transport: DOT: Bulk - Stain, not regulated in containers less than 119 gallons (450L).

Hazards Unknown

See MSDS for detailed health, safety, and disposal information.

Classification: **NFPA Health-1, Flammability-0, Reactivity-0.**

EU- unknown

WHMIS(Canada) D2B (bulk)

Human health hazards: Eye irritant.

First aid measures

Eyes: Check for contact lenses and remove. Flush eyes with clean water holding eyelids open. Seek medical attention.

Skin: Remove contaminated clothing. Wash exposed area with soap and water. Apply moisturizing lotion. Launder clothing and clean shoes.

Swallowing: Do not induce vomiting. Small amounts are not expected to cause significant harm, call a physician.

Inhalation: Remove to fresh air.
