



Penetrant Professor Approved

Product Data Sheet

FP-921

Fluorescent Penetrant

1
11/2015



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-2644** 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.

FP-921 is approved to **AMS-2644** as a fluorescent (**Type 1**); Methods “A”, and “C”; sensitivity level **1** water washable inspection penetrant. For Method “C” applications it is used with **E-59**, **E-59A**, **R-503**, and **R-504**.

FP-921 is applied by immersion, spray, or wipe on. It is approved for low sensitivity aerospace applications.

FP-921 is listed on the Qualified Products List for **AMS-2644**. It meets the requirements of **AMS-2647**, **ASME Boiler and Pressure Vessel Code Section V**, **ASTM E-165**, and **ASTM E-1417**, for penetrant inspection materials. It is low in sulfur and halogens and is safe for use on all metal surfaces.

Guide to METHOD “A” processing per
ASTM E-1417

1. Part must be clean, dry and at a temperature of 4.4°-52°C (40°- 125°F) before penetrant is applied.
2. Apply **FP-921** 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. Wash part; water temperature 10°-38°C (50°-100 °F). Water pressure < 275kPa (< 40 psi); if a hydro-air nozzle is used, limit pressure to < 172kPa (< 25 psi). Distance > 30cm (> 12 inches). Wash time- only long enough to remove surface fluorescence under UV-A (black light) .
- 5*. Dry part; temperature not to exceed 71°C (160°F), time - only long enough to dry surface.
6. Apply dry powder developer, form “a” (**D-72A**), by dusting, or non aqueous developer, form “d”(**D-70**), by spraying.
- 6A*. If water based developer form “c”(**D-78B**) is used it is applied by immersion or spray, prior to step 5 drying.
7. Wait a minimum of 10 minutes before inspection. Maximum time is 1 hour for form “d ” (non aqueous) and maximum 4 hours for form “a” (dry powder). If times are exceeded, clean part and reprocess.
8. Use UV-A illumination of >1000 $\mu\text{W}/\text{cm}^2$ @ 15 inches (38.1 cm) in a darkened area of < 21 lux visible light (< 2 foot candles).

Guide to METHOD “C” (wipe off) processing per
ASTM E-1417

1. Part must be clean, dry and at a temperature of 4.4°-52°C (40°- 125°F) before penetrant is applied.
2. Apply **FP-921** 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 **E-59**, **E-59A**, **R-503** or **R-504** and wipe penetrant from surface. **Do not** spray remover on surface to remove penetrant, as sensitivity will be impaired. Water may be used to wipe **FP-921** from the surface, but the surface must be dried before developer is applied.
5. Apply dry powder developer **D-72A** by dusting, or non aqueous developer **D-70** by spraying.
6. Wait a minimum of 10 minutes before inspection.
7. Inspect under UV-A illumination of >1000 $\mu\text{W}/\text{cm}^2$ @ 15 inches (38.1 cm) in a darkened area of < 21 lux visible light (< 2 footcandles).



Fluorescent Penetrant Indication
on
Aluminum Extrusion



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FP-921

Fluorescent Penetrant

Typical Physical Properties

Form: clear yellow green viscous liquid
 Density: 969 g/L
 Flash Point: > 93°C (> 200°F)
 Viscosity 25.7 mm²/s
 Water Tolerance:> 20 %
 Water Content: < 1 %
 Fluorescent Brightness: (AMS-2644 requirement > 65 %) 80.0%
 Corrosion of aluminum: none
 Corrosion of carbon steel: none
 Corrosion of magnesium: none
 Corrosion of stainless steel: none
 Corrosion of titanium: none
 Chloride content: < 100 ppm (0.01%)
 Fluoride content: < 50 ppm (0.005%)
 Sodium content: < 100 ppm (0.01%)
 Sulfur content: < 100 ppm (0.01%)
 Mercury: none
 VOC's: 0 g/L
 Ozone layer depleting substances: none
 PCB's: none

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

Specifications

AMS -2644
 ASME B & PV code Sec. V
 ASTM E-165
 ISO 3452

AMS-2647
 ASTM E-1417

Product Availability

1 pint (0.4mL) can with dauber
 1 gallon (3.7L) can
 5 gallon (18.9L) pail
 55 gallon (208L) drum

NSN

1 gallon 6850-01-263-6490
 55 gallon 6850-01-263-4055

GHS Information



Danger

GHS Hazard Statements:

H315 Causes skin irritation.
H318 Causes serious eye damage.

GHS Precautionary statements:

P102: Keep out of reach of children.
P210: Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P261: Avoid breathing fumes/gas/mist/vapors/spray.
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 it before reuse.

Transport:

DOT- not regulated < 450 L or 119 Gal containers
 IATA- not regulated
 IMDG- not regulated

