



Penetrant Professor Approved

Product Data Sheet

FP-923

Fluorescent Penetrant



Met-L-Chek manufactures a complete line of penetrants used in the fluorescent (Type 1) and visible (Type 2) dye penetrant inspection process. All Met-L-Chek penetrants are qualified to AMS-2644 and are sold under the Met-L-Chek® and Pen-Chek® trademarks.

FP-923 is approved to AMS-2644 as a fluorescent (Type 1); Methods “A”, and “C”; sensitivity level 3 water washable inspection penetrant. For Method “C” applications it is used with E-59, E-59A, R-503, and R-504. FP-923 is applied by immersion, spray, or wipe on. It is approved for high sensitivity aerospace applications.

FP-923 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-923 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 μW/cm² @ 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-923 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-923 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 μW/cm² @ 15 inches (38.1 cm) in a darkened area of < 21 lux visible light (< 2 footcandles).

Fluorescent Penetrant Indication





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Typical Physical Properties

Form: clear yellow green liquid
 Density: 918 g/L
 Flash Point: > 93°C (> 200°F)
 Viscosity 11.3 mm²/s
 Water Tolerance:> 10 %
 Water Content: < 1 %
 Fluorescent Brightness: (AMS-2644 requirement > 90 %)
 117.7%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

Product Availability

12 x 400 mL (16oz) aerosol
 6 x 1 pint (0.4L) can with dauber
 1 gallon (3.7L) can
 5 gallon (18.9L) pail
 55 gallon (208L) drum

NSN

1 gallon 6850-01-263-8430
 5 gallon 6850-01-263-2263
 55 gallon 6850-01-263-4056

Specifications

AMS-2644
 ASTM E-165
 ISO-3452
 SPOP-82
 R-R CSS-232
 BAC 5423
 ASME B&PV code Sec. V

ASTM E-1417
 P & W PMC # 4360
 AMS 2647
 R-R RPS-702
 PMC Code 9
 HONEYWELL EMS 52309



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