



Penetrant Professor Approved



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.

FBP-914 is approved to AMS-2644 as a fluorescent (Type 1); Methods “A”, and “C”; sensitivity level 4 water washable inspection penetrant. For Method “C” applications it is used with E-59, E-59A, R-503, and R-504. FBP-914 is applied by immersion, spray, or wipe on. It is approved for ultra high sensitivity aerospace applications.

FBP-914 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.

FBP-914 is a special oil and solvent free formulation which utilizes biodegradable components, and is VOC free.

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

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 FBP-914 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).

1. Part must be clean, dry and at a temperature of 4.4°-52°C (40°- 125°F) before penetrant is applied.
2. Apply FBP-914 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 FBP-914 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).

FBP-914
fluorescent penetrant indications





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FBP-914

Fluorescent Penetrant

Typical Physical Properties

Form: clear yellow green viscous liquid
 Density: 977 g/L
 Flash Point: > 93°C (> 200°F)
 Viscosity 26.7 mm²/s
 Water Tolerance:> 20 %
 Water Content: < 1 %
 Fluorescent Brightness: (AMS-2644 requirement > 95 %) 124.4%
 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 (0.4L) can with dauber
 1 gallon (3.7L) plastic bottle
 5 gallon (18.9L) plastic jug with our spout
 55 gallon (208L) plastic drum

NSN

5 gallon 6850-01-263-2264
 55 gallon 6850-01-263-4057



GHS Information



Danger

GHS Hazard Statements:

- H315 Causes skin irritation.
- H318 Causes serious eye damage.
- 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:** Rinse mouth Do Not induce vomiting. Get medical attention if feeling unwell.
- IF ON CLOTHING:** Take off contaminated clothing and wash before reuse.

Transport:

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

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