



Penetrant Professor Approved

Product Data Sheet

FBP-914

Fluorescent Penetrant

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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.

**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  $\mu\text{W}/\text{cm}^2$  @ 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  $\mu\text{W}/\text{cm}^2$  @ 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 mm<sup>2</sup>/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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