



Penetrant Professor Approved

## Product Data Sheet

# FP-923

## Fluorescent 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-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-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/cm<sup>2</sup> @ 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/cm<sup>2</sup> @ 15 inches (38.1 cm) in a darkened area of < 21 lux visible light (< 2 footcandles).

### Fluorescent Penetrant Indication





Penetrant Professor Approved

### Product Data Sheet

## FP-923

# Fluorescent Penetrant



### Typical Physical Properties

Form: clear yellow green liquid  
 Density: 918 g/L  
 Flash Point: > 93°C (> 200°F)  
 Viscosity 11.3 mm<sup>2</sup>/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



BEFORE USING ANY OF THESE PRODUCTS, YOU MUST BECOME COMPLETELY FAMILIAR WITH THE INFORMATION CONTAINED IN MCGEAN'S SAFETY DATA SHEETS. All information contained therein or in this document regarding handling, personal protection, and other safety measures must be followed during use. McGean presents the information herein without warranty and disclaims any liability, including any consequential, special, or indirect damages, arising from its use and misuse. Because the use, the conditions of use, product or product composition, and/or applicable laws may differ from one location to another and/or may change with time, the purchaser and/or user is solely responsible for determining whether the product is appropriate for use. McGean recommends use of this product solely in commercial processes which are specified by McGean and which do not violate any third-party patent rights or any laws or regulations or otherwise adversely impact human health and the environment. Users must make their own investigations and determine the suitability of the product for their particular purposes. McGean does not guarantee the accuracy of any data provided by its suppliers. MCGEAN MAKES NO WARRANTIES, EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE EXCEPT AS EXPRESSLY STATED IN THE SELLER'S SALES CONTRACT OR SALES ACKNOWLEDGEMENT FORM. USE OF ANY MCGEAN PRODUCT IS AT THE USER'S RISK.

### Contact Us

United States  
 McGean  
 Phone: +1-216-441-4900  
 Fax: +1-216-441-1377

United Kingdom  
 McGean UK  
 Phone: +44-1902-456563  
 Fax: +44-1902-457443

Singapore  
 McGean Singapore  
 Phone: +65-6863-2296  
 Fax: +65-6863-2297