



Penetrant Professor Approved

Product Data Sheet D-70 Nonaqueous Developer



Met-L-Chek Company manufactures a complete line of developers used in the fluorescent (**Type 1**) and visible (**Type 2**) dye penetrant inspection process. All Met-L-Chek Company developers 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.

The use of a developer is required by most penetrant inspection specifications. The developer draws the penetrant from the flaw and creates a uniform surface on which to view the penetrant indication. **D-70** is used in Methods A, B, C, & D processing. **D-70** is used with fluorescent penetrants as form “**d**” and with visible penetrants as form “**e**”. It is applied after the surface penetrant has been removed and the inspection surface dried. **D-70** nonaqueous developer consists of absorbent powder suspended in a volatile solvent. The developer particles will settle out upon standing, requiring agitation prior to application. This type of developer is most commonly used in aerosol cans, but may also be bulk sprayed using a paint sprayer. The solvent action of this type of developer helps bring the penetrant to the surface enhancing the detectability of the finest flaws. This type of developer uses flammable solvents and should not be used in confined spaces or near open flames or sparks.

D-70 is approved by Boeing, Edf, GE, Pratt & Whitney, **ISO- 3452** and is the qualification standard for **AMS-2644**. It is low in Sulfur, Sodium, Chlorine, Fluorine and other Halogens, making it safe for use on Titanium and high Nickel alloys found in aerospace, medical and nuclear components.

D-70 finds wide use in weld inspection in ship building and weld repairs. It is used in heat exchanger inspection in what is called the through leak method where penetrant is applied to one side and the **D-70** to the other. After a prescribed penetration time the developer coating is inspected for penetrant indications which highlight a through leak.

D-70 has been used by automotive manufacturers to assist in locating oil and gas leaks in engine components and hydraulic lines. The area of interest is cleaned and the developer applied. The engine is run and the oil leak will appear as a dark spot on the white coating. Reminiscent of the old oil and whiting inspection used by railroads before the advent of modern penetrant inspection materials.

D-70 has been used in the 3-D laser scanning of automobiles and exotic components where it is used to reduce interference glare from shinier surfaces. It has been used to assist in the installation of aircraft doors as a marker for fit adjustments. All these applications require a low toxicity material that is readily removed with a water spray leaving a residue free surface.

Type 1, Form D Inspection



D-70 Spray

Type 2, Form D Inspection





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Typical Physical Properties

Form: milky liquid
 Density: 851 g/L
 Flash Point: 11.6°C (54°F)
 Fluorescence: none
 Dry Coating: smooth white
 Removability with water: complete
 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: 200 ppm (0.02%)
 Sulfur content: 100 ppm (0.01%)
 Mercury: none
 VOC's: 750 g/L
 Ozone layer depleting substances: none
 PCB's: none

NSN #'s

1 gallon can 6850-01-265-2742
 1 gallon can for **Type 2** 6850-01-265-2743
 5 gallon pail 6850-00-782-2728
 5 gallon pail for **Type 1** 6850-01-264-8679
 5 gallon pail for **Type 2** 6850-01-264-8680

Product Availability

12 x 16oz (400ml) vol. aerosol (net wt 300g or 10.5oz)
 1 gallon (3.7L) metal can
 5 gallon (18.9L) metal pail

Specifications

RCC-M **AMS 2647**
ISO 3452 **PMC-4357**
AMS 2644 **ASTM E 1417**
AMS 2647 **RR CSS-232**
ASTM E-165
ASME B & PV code sec V
Snecma DMC0010 rev J, sensibilité S2, S3, S4



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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