

# Met-L-Chek®

Penetrant Professor Approved

## Product Data Sheet D-70 Nonaqueous Developer



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

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





Penetrant Professor Approved

# Product Data Sheet D-70 Nonaqueous Developer



### 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



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