



PENETRANT PROFESSOR APPROVED

## PRODUCT DATA SHEET

# D-70 Nonaqueous Developer

1  
3/09



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-2644E** 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 testing 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 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- 3452-2005** and is the qualification standard for **AMS-2644E**. 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.

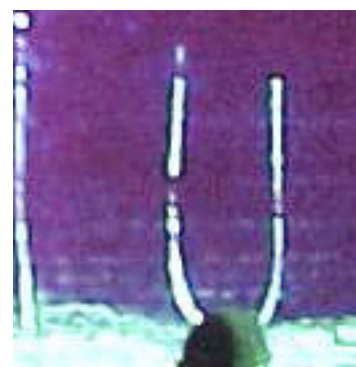
**D-70** finds wide use in weld inspection in ship building and weld repairs. It is used in heat exchanger inspection in what is called the through leak method where penetrant is applied to one side and the **D-70** to the other. After a prescribed penetration time the developer coating is inspected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



**Visible penetrant crack indication on D-70**



**Typical aerosol application of D-70 during a weld inspection.**



**Fluorescent penetrant crack indication on D-70**

**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.

**Met-L-Chek Company, 1639 Euclid Street, Santa Monica, California, 90404, U.S.A.**

**Phone: 310-450-1111, Fax: 310-452-4046, Email: info@met-l-chek.com, Web: www.met-l-chel.com**



PENETRANT PROFESSOR APPROVED

PRODUCT DATA SHEET
D-70 Nonaqueous Developer

2
3/09



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: < 150 ppm (0.015%)
Fluoride content: < 50 ppm (0.005%)
Sodium content: < 350 ppm (0.035%)
Sulfur content: < 200 ppm (0.02%)
Mercury: none
VOC's: 710 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.

Product Availability

12 x 12oz (300ml) vol. aerosol (net wt 230g or 8oz)
12 x 16oz (400ml) vol. aerosol (net wt 300g or 10.5oz)
1 gallon (3.7L) metal can
5 gallon (18.9L) metal pail

NSN #'s

12 oz aerosol for Type 2 6850-00-160-9480
12 oz aerosol 6850-00-963-5408
12 oz aerosol for Type 1 6850-01-265-7234
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

Specifications

AMS-2644E AMS-2647C
ASME B & PV code 07 sec V
ASTM E-165 ASTM E-1417
ISO-3452-2005 PMC-4357-7
RR CSS-232 RCC-M rev 2000
Snecma DMC0010 rev J

Transport: DOT: Bulk - isopropanol, class 3, UN 1219, packaging group II, flammable liquid.

DOT: Aerosol - Consumer Commodity ORM-D

IATA: Aerosol - Aerosol flammable, Flammable gas, class 2.1, UN 1950

Hazards Flammable liquid & vapor

See MSDS for detailed health, safety, and disposal information.

Classification: NFPA Health-1, Flammability-3, Reactivity-0.

EU- F+; R12, Xi: R-36; R67

WHMIS(Canada) B2,D2B (bulk) A, B2,D2B(aerosol)

Human health hazards: Eye irritant. Vapors may cause drowsiness or dizziness.

First aid measures

Eyes: Check for contact lenses and remove. Flush eyes with clean water holding eyelids open. Seek medical attention.

Skin: Remove contaminated clothing. Wash exposed area with soap and water. Apply moisturizing lotion. Launder clothing before reuse. Clean shoes before reuse.

Swallowing: Do not induce vomiting. Small amounts are not expected to cause significant harm, call a physician.

Inhalation: Remove to fresh air.

Met-L-Chek Company, 1639 Euclid Street, Santa Monica, California, 90404, U.S.A.

Phone: 310-450-1111, Fax: 310-452-4046, Email: info@met-l-chek.com, Web: www.met-l-chel.com