



Penetrant Professor Approved

Product Data Sheet
**D-70 Nonaqueous
Developer**

1
10/2015



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 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.

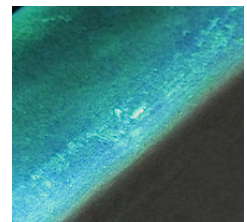
D-70 has been used in the 3-D laser scanning of automobiles and exotic components where it is used to reduce interference glare from shinier surfaces. It has been used to assist in the installation of aircraft doors as a marker for fit adjustments. All these applications require a low toxicity material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

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



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

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





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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

Specifications

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

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



The warranty shelf life of the product is 5 years from date of batch approval.

GHS Information



Danger

GHS: Hazard Statements:
H225: Highly flammable liquid and vapor.
H229: Pressurized container: may burst if heated.
H319: Causes serious eye irritation.
H336: May cause drowsiness or dizziness

GHS Precautionary Statements:

P102: Keep out of reach of children.
P210: Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P233: Keep container tightly closed.
P261: Avoid breathing fumes/gas/mist/vapors/spray.
P280: Wear protective glove/clothing/eye protection/face protection.
P284: In case of inadequate ventilation wear respiratory protection
P410: Protect from sunlight.
P412: Do not expose to temperatures exceeding 50°C/122°F
* Specific to aerosol cans



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:

Bulk - UN 1219, Isopropanol, class 3, packing group II, .
Aerosol: DOT- Limited Quantity.
Aerosol: IATA- UN 1950 ,Aerosol, flammable, class 2.1,

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