



Penetrant Professor Approved

Product Data Sheet

## D-702 High Temperature Developer



Met-L-Chek manufactures a complete line of developers used in the fluorescent (**Type 1**) and vis-ible (**Type 2**) dye penetrant inspection process. Met-L-Chek high temperature developer, **D-702**, is qualified to **MIL-I-25135** as a special application developer and is sold under the **Met-L-Chek®** and **Pen-Chek®** trademarks.

**D-702** is a special application high temperature inspection developer, form “F”, used with high temperature vis-ible penetrant **VP-302** to enhance detection of surface cracks and porosity on hot surfaces. The use range is **51.6 °C - 176.6 °C (125° F -350° F)**. **D-702** is applied after the surface penetrant has been removed. **D-702** is applied by spraying, either from a portable compressed gas spray pack or by conventional spray gun. The developer consists of absorbent powder suspended in a volatile solvent blend. **D-702** dries quickly and produces a thin white film, which is easily removed with water after inspection. This type of developer contains flammable solvents and should not be used in confined spaces or near open flames or sparks. The use on hot surfaces does not pose a significant fire hazard in the open air.

**D-702** is listed on the approved products list for **MIL-I-25135C** It is low in Sulfur, Chlorine, Fluorine and other Halogens, making it safe for use on Titanium and high Nickel alloys found in nuclear components.

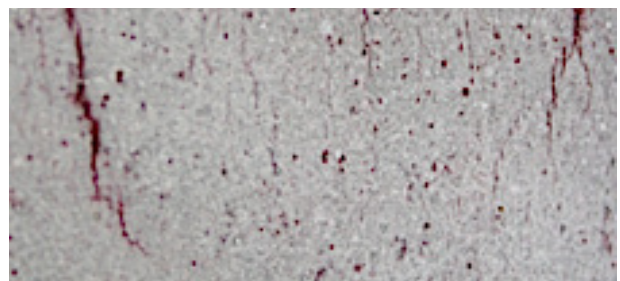
**D-702** finds wide use in field weld and weld repair inspection. It is used in the inspection of refinery processing equipment that is at elevated temperatures, speeding up the inspection process time by eliminating the total cool down required for standard penetrant.

Operator must take precautions when working on hot surface to prevent burns. Protective gloves are recommended.

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### Guide to METHOD “C” wipe off processing

1. Part must be clean, dry and at a temperature of **52° -177°C (125° - 350°F)** before penetrant is applied. Test surface temperature by applying a small drop of penetrant on the part surface. If the color turns brown to black in a minute the surface is too hot to inspect. Allow to cool until red color persists.
2. Apply **VP-302** penetrant using spray or wipe on.
3. Wait a minimum of 1-5 minutes for penetrant to thin and enter flaws.
4. Using **R-502** high temperature remover on wiping media, wipe off surface penetrant.
5. Spray on thin even film of **D-702** high temperature developer.
6. Wait a minimum of 1-5 minutes before inspection. On higher temperature surfaces color may begin to fade with prolonged time. Use illumination of **>1100 lux/m<sup>2</sup> (>100 foot candles)** to inspect.



High temperature penetrant **VP-302** crack indication on **D-702** developer film.



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### Typical Physical Properties

Form: hazy liquid  
 Density: 950g/L  
 Flash Point: > 11.6°C (>54°F)  
 Fluorescence: none  
 Dry Coating: thin white film  
 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%)  
 Sulfur content: < 200 ppm (0.02%)  
 Mercury: none  
 VOC's: 0 g/L  
 Ozone layer depleting substances: none  
 PCB's: none

### Specifications

**ISO-3452**  
**ASTM E-165**      **ASTM E-1417**  
**ASME B & PV Code Sec V**  
**Mil-I-25135C, Interim AM-4**  
**NAVSEA-250-1500-1, Rev17, ACN-5**

### Product Availability

1 pint (0.473L) metal can  
 1 gallon (3.7L) metal can  
 5 gallon (18.9L) metal pail



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