



Penetrant Professor Approved

Product Data Sheet R-504 Cleaner/Remover



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

R-504 is a class 2 (non-halogenated), Method C inspection penetrant remover. It is designed for use in the solvent wipe technique for penetrant inspection in general metalworking, welding, nuclear and aerospace applications. It is a flash dry rate material and as such is ideal for penetrant wipe removal, especially for the verification of indications. A cotton swab is moistened with **R-504** and suspected indications are lightly wiped from the surface. The inspector can evaluate the indication by the rate of penetrant bleed back. The rapid drying of **R-504** is ideal for this application as it does not blur the indication. The aerosol comes with a spray tube that facilitates pin point application which is ideal for cleaning the star indications on TAM panels. As a pre-cleaner it is sprayed directly on the test surface. As a penetrant remover it is sprayed onto wiping media and then the penetrant wiped from the surface. The remover should not be sprayed directly on to the test surface to remove the excess penetrant as the sensitivity will be impaired.

R-504 is listed on the Qualified Products List for **AMS-2644**. It meets the requirements of **AMS-2647**, **ASME Boiler and Pressure Vessel Code Section V**, **ASTM E-165**, **ASTM E-1417**, **ISO- 3452-2005**, and **Pratt & Whitney PMC #9008** for penetrant inspection materials. It is low in Sulfur, Chlorine, Fluorine and other Halogens, making it safe for use on Titanium and high Nickel alloys found in aerospace, medical and nuclear components.

R-504 is ideal for storing penetrant test panels in. The spray tube supplied with the aerosols is an effective way to clean out the star bust cracks on TAM panels.

R-504 is a phenol free solvent. **R-504** is flammable and should not be used in confined spaces or near open flames or sparks.

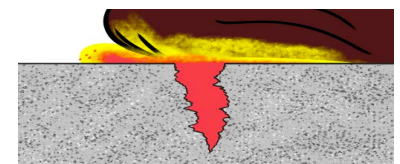
Guide to METHOD "C" wipe off Processing per **ASTM E-1417**

1. Part must be clean, dry and at a temperature of 4.4°-52°C (40°-125°F) before penetrant is applied.
2. Apply penetrant using spray, immersion, or wipe on.
3. Wait a minimum of 10 minutes; 20 minutes if temperature is 4.4°-10°C (40-50°F).
4. Moisten cloth with remover and wipe penetrant from surface. **Do not** spray remover on surface to remove penetrant, as sensitivity will be impaired.
5. Apply non aqueous developer **D-70**, by spraying.
6. Wait a minimum of 10 minutes before inspection.
7. For fluorescent **Type 1** penetrants use UV-A illumination of >1000 μw/cm² @ 15inches (38.1 cm) in a darkened area of <21 lux visible light (<2 footcandles). For visible **Type 2** penetrants use lighting of 1100 lux/m² (100 footcandles) minimum.



R-504 used as a pre-cleaner spray directly on test surface and wipe clean.

R-504 used as a penetrant remover. Spray on wiping media, and wipe remove penetrant.



Common Indication Types





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Typical Physical Properties

Form: clear liquid
Density: 791 g/L
Flash Point: >-20°C (>-4°F)
Fluorescence: none
Corrosion of aluminum: none
Corrosion of carbon steel: none
Corrosion of magnesium: none
Corrosion of stainless steel: none
Corrosion of titanium: none
Residue: < 0.005 g/100 ml
Chloride content: < 50 ppm (< 0.005%)
Fluoride content: < 50 ppm (< 0.005%)
Sulfur content: < 50 ppm (< 0.005%)
Mercury: none
Phenol: < 1 ppm (<0.0001%)
VOC's: 791 g/L Exempt from EPA limits
Ozone layer depleting substances: none
PCB's: none

Specifications

AMS2644 **AMS 2647**
ASTM E165 **ASTM E1417**
MIL-STD-2132 **P&W PMC 9008**
EN ISO 3452-1 **EN ISO 3452-2**
RCC-M rev 2000
ASME B&PV Code Sec V
NAVSEA-T9074-AS-GIB-010/271

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



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