



Penetrant Professor Approved

Product Data Sheet
R-504
Cleaner/Remover

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10/2015



Met-L-Chek Company 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 Company cleaner/removers 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.

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.

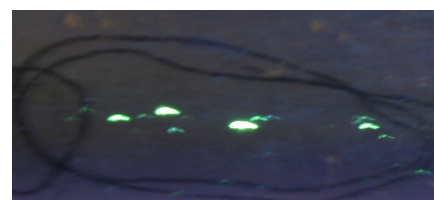
R-504 is a phenol free solvent. **R-504** is flammable and should not be used in confined spaces or near open flames or sparks.

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 $>1000 \mu\text{w}/\text{cm}^2$ @ 15 inches (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 being sprayed on cotton swab, which is used to wipe fluorescent indications. Inspector will evaluate severity of flaw indication by rate of fluorescent bleed back.





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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

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

Specifications

AMS-2644	AMS-2647
ASME B & PV code Sec V	ASTM E-165
ASTM E-1417	ISO-3452
NAVSEA-T9074-AS-GIB-010/271	
P & W PMC #9008	RCC-M rev 2000

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



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 - UN1090, Acetone, class 3, packing group II, .
 Aerosol:DOT- Limited Quantity.
 Aerosol:IATA- UN 1950 ,Aerosol, flammable, class 2.1,

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