



Penetrant Professor Approved

Product Data Sheet R-503 Cleaner/Remover

1
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-503 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 moderate dry rate material and is ideal for penetrant wipe removal and pre-inspection surface cleaning. 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-503 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**, and **Pratt & Whitney PMC #9094** 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-503 is ideal for storing penetrant test panels in. The spray tube supplied with the aerosols is an effective way to clean out the star burst cracks on TAM panels.

R-503 is free of petroleum solvents. **R-503** 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.



Cleaning Star Burst test panel

Visible penetrant indications using Method C



Fluorescent penetrant indications using Method C



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R-503

Cleaner/Remover

Typical Physical Properties

Form: clear liquid
 Density: 786 g/L
 Flash Point: >11.6°C (>53°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
 VOC's: 786 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.

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 #9094 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 - 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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