



Penetrant Professor Approved

Product Data Sheet
VP-30
Visible Penetrant



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

VP-30 is a visible (Type 2), water washable (Method A) and solvent removable (Method C) inspection penetrant. It is designed for use in general metalworking, welding, nuclear and automotive applications for surface flaw and through leak detection. VP-30 has found wide use in the inspection of food and dairy processing equipment such as heat exchangers. Visible penetrants are not rated by sensitivity levels per AMS-2644 but are considered approximately equal to level 1 fluorescent penetrants. 50µ discontinuities are readily detected and under controlled conditions 30µ size defects may be highlighted by visible penetrants. ISO-3452 does rate visible penetrants by sensitivity level with #2 being the most sensitive. VP-30 is a level 2 per this specifications requirements.

VP-30 is listed on the Qualified Products List for AMS-2644. It meets the requirements of ASME Boiler and Pressure Vessel Code Section V, ASTM E-165, ASTM E-1417, and ISO-3452 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.

Guide to METHOD "A" processing per ASTM E-1417

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 VP-30 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. Wash part; water temperature 10°-38°C (50°-100 °F). Water pressure < 275kPa (< 40 psi); if a hydro-air nozzle is used limit pressure to < 172kPa (< 25 psi). Distance > 30cm (> 12 inches). Wash time- only long enough to remove surface penetrant under white light.
5. Dry part, time - only long enough to dry surface.
6. Apply non-aqueous developer D-70 by spraying. If water based developers D-78B is used it is applied by immersion or spray, prior to step 5 drying.
7. Wait a minimum of 10 minutes before inspection.
8. Use lighting of 1100 lux/m2 (100 footcandles) minimum.

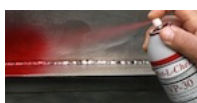
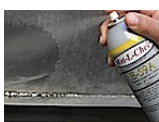
- 1. Part must be clean, dry and at a temperature of 4.4°-52°C (40°-125°F) before penetrant is applied.
2. Apply VP-30 using spray, immersion, or wipe on.
3. Wait a minimum of 10 minutes; 20 minutes if temperature is 4.4°-10°C (40-50°F).
4. Moisten cloth with remover E-59, E-59A, R-503 or R-504 and wipe penetrant from surface. Do not spray remover on surface to remove penetrant, as sensitivity will be impaired.
5. Apply nonaqueous developer D-70, by spraying.
6. Wait a minimum of 10 minutes before inspection.
7. Use lighting of 1100 lux/m2 (100 footcandles) minimum.

Through Leak Method

For through leak testing the penetrant is applied to one side of the component and then developer is applied to the opposite side. Thickness of the component will effect the dwell time which may range from 10 minutes to 2 hours.

Step 1 clean surface Step 2 apply penetrant Step 4 remove penetrant Step 5 apply developer Step 7 inspect

Method "C"





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### Typical Physical Properties

Form: red liquid  
 Density: 801 g/L  
 Flash Point: >62.2°C (>144°F)  
 Viscosity: 2.5 mm<sup>2</sup>/s  
 Water Tolerance: > 5%  
 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: < 150 ppm (< 0.015%)  
 Mercury: none  
 VOC's: 533 g/L  
 Ozone layer depleting substances: none  
 PCB's: none

### Product Availability

12 x 400mL(16oz) vol. aerosol net wt 310g (10.9oz)  
 6 x 1 pint(0.4L) can with dauber  
 1 gallon (3.7L) metal can  
 5 gallon (18.9L) metal pail  
 55 gallon (208L) metal drum

### NSN's

1 gallon 6850-01-267-7989  
 5 gallon 6850-01-223-2867

### Specifications

- ISO 3452
- AMS 2644
- ASTM E-165
- ASTM E-1417
- MIL-STD-271
- MIL-STD-2132
- RCC-M rev 2000
- Dassault IQ-1-0-1-20
- ASME B&PV Code Section V
- NAVSEA-T9074-AS-GIB-010/271



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