



Penetrant Professor Approved

Product Data Sheet
VBP-300
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.

VBP-300 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 detection. VBP-300 has found wide use in the inspection of food and dairy processing equipment. Visible penetrants are not rated by sensitivity levels per AMS-2644 but are considered approximately 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. VBP-300 is a level 2 per this specifications requirements.

VBP-300 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 medical and nuclear components.

VBP-300 is an oil and solvent, VOC free, biodegradable penetrant

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 VBP-300 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.

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2. Apply VBP-300 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 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.



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Typical Physical Properties

Form: red liquid
Density: 958 g/L
Flash Point: >62.2°C (>144°F)
Viscosity: 25.6 mm²/s
Water Tolerance: > 5%
Water Content: < 1 %
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%)
Sodium content: < 100 ppm (0.01%)
Sulfur content: < 100 ppm (0.01%)
Mercury: none
VOC's: 0 g/L
Ozone layer depleting substances: none
PCB's: none

Specifications

ISO 3452
AMS2644
ASTM E165 ASTM E1417
MIL-STD-2132 MIL-STD-271
ASME B&PV Code Section V
NAVSEA T9074-AS-GIB-010/271

Product Availability

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

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



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