

Met-L-Chek Company manufactures a complete line of penetrants used in the fluorescent (Type 1) and visible (Type 2) dye penetrant inspection process. All Met-L-Chek Company penetrants 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.

**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 exchanges. Visible penetrants are not rated by sensitivity levels per AMS-2644 but are considered approximately equal to level 1 fluorescent penetrants.  $50\mu$  discontinuities are readily detected and under controlled conditions  $30\mu$  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 $4.4^{\circ}-52^{\circ}C$ (40°-125°F) before penetrant is applied.	1. Part must be clean, dry and at a temperature of $4.4^{\circ}-52^{\circ}C$ ( $40^{\circ}-125^{\circ}F$ ) before penetrant is applied.
2. Apply <b>VP-30</b> penetrant using spray, immersion, or wipe on.	2. Apply <b>VP-30</b> using spray, immersion, or wipe on.
3. Wait a minimum of 10 minutes; 20 minutes if temperature is $4.4^{\circ}$ -10°C (40-50°F).	3. Wait a minimum of 10 minutes; 20 minutes if temperature is $4.4^{\circ}$ -10°C (40-50°F).
4. Wash part; water temperature $10^{\circ}-38^{\circ}C$ ( $50^{\circ}-100^{\circ}F$ ). Water pressure < $275$ kPa (< 40 psi); if a hydro-air nozzleis used limit pressure to < $172$ kPa (< 25 psi). Distance > $30$ cm (> 1 2 inches). Wash time- only long enough to remove surface penetrant under white light.	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 <b>D-70</b> , by spraying.
5. Dry part, time - only long enough to dry surface.	6. Wait a minimum of 10 minutes before inspection.
6. Apply non-aqueous developer <b>D-70</b> by spraying. If water based developers <b>D-78B</b> is used it is applied by immersion or spray, <u>prior to step 5 drying</u> .	7. Use lighting of 1100 lux/m2 (100 footcandles) minimum.
	Through Leak Method
7. Wait a minimum of 10 minutes before inspection.	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
8. Use lighting of 1100 lux/m2 (100 footcandles) minimum.	which may range from 10 minutes to 2 hours.
Step 1 clean surface Step 2 apply penetrant Step 4 ren	nove penetrant Step 5 apply developer Step 7 inspect
Method	

"C"













# VP-30 Visible Penetrant



### **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

**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

# **Product Availability**

**Product Data Sheet** 

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



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