

AERONAUTICAL MATERIAL SPECIFICATIONS

AMS 3156

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Revised

OIL, FLUORESCENT PENETRANT Water Soluble

1. **ACKNOWLEDGMENT:** A vendor shall mention this specification number in all quotations and when acknowledging purchase orders.
2. **APPLICATION:** Primarily for use in fluorescent penetrant inspection of parts and assemblies for detection of surface discontinuities and imperfections.
3. **COMPOSITION:** Material shall be composed of suitable oil or oil-like components together with a dye or such additives necessary to provide a stable, water-soluble, highly penetrating, fluorescent solution.
4. **TECHNICAL REQUIREMENTS:** Material shall conform to the following requirements; tests shall be performed in accordance with listed ASTM methods, insofar as practicable.

4.1 Physical Properties:

Color	5 max	ASTM D155-45T
Gravity, deg API	30 - 35	ASTM D287-55
Viscosity, Kinematic at 100 F, Centistokes	3.5 - 5.5	ASTM D445-53T
Flash Point, deg Fahr	180 min	ASTM D92-57
Precipitation Number	0.05 max	ASTM D91-52
Water Content, %	1.0 max	ASTM D95-56T
Corrosion at 212 F	1 max	ASTM D130-56

- 4.2 **Color:** Shall be predominantly green with a greenish-blue or greenish-yellow cast.
- 4.3 **Toxicity:** The oil shall contain no materials of known toxicity. The vapor shall not cause discomfort or injury to persons using the oil.
- 4.4 **Water Solubility:** Shall be such that the droplets produced when 1 or 2 drops of the material are dropped into a beaker of water maintained at $160\text{ F} \pm 5$ shall disperse immediately leaving a smoky appearance in the water. There shall be no separated oil on the surface of the water.
- 4.5 **Fluorescence:** Shall be not less than 6 when tested as follows:

4.5.1 Test Apparatus:

- 4.5.1.1 **Viewer:** A box-like device approximately $3.5 \times 3.5 \times 3$ in., having 1 in. diameter viewing holes top and bottom. Seven slots 0.375 in. apart, having access through one side of the box, to permit aligning 14 cobalt glass filters arranged singly or in pairs per slot between the viewing holes. The box should be supported vertically over a suitable platform so that the lowest filter slot shall be 8.5 in. from, and parallel to, the platform.