

HM-430 FLUORESCENT PENETRANT

*Approved Type I, Methods A & C, Level 3, MIL-I-25135 Rev. D & E,
and AMS-2644*



PRODUCT INFORMATION

Description: HM-430 is a medium-high sensitivity, water-washable fluorescent penetrant for inspecting castings, extrusions, and similar parts. Designed for dip tank use with good self-developing properties. HM-430 is a versatile, general purpose penetrant for use on a variety of materials, including aluminum and magnesium castings. Complies with low-sulfur and low-halogen requirements. OSHA Class IIIB material. Flash point over 200°F.

Special Features: HM-430 is fully approved and proven. It is formulated to give low background fluorescence on rough surfaces. Has been called "the four wheel drive penetrant for rough terrain".

HM-430 qualifies under the strict requirements of MIL-I-25135 Revisions D & E as well as AMS-2644. The Sherwin laboratory was the first to recognize the need for high flash point, stable, nonvolatile, low toxicity penetrants.

HM-430 is a proven production material.

1. Low to near zero background for assured indication visibility.
2. Sharp, precise flaw indications for rapid interpretation.
3. Excellent electrostatic spray capability.
4. Long material tank life due to formula stability and nonvolatility.
5. Low material consumption (low drag out) due to low viscosity.
6. Clean, relatively odorless product; vapor free atmosphere.
7. Recognized and accepted as a low toxicity material by health authorities.
8. Use without developers where specifications permit.

HM-430 meets all military and applicable commercial specifications. Full conformance certification complying with MIL-STD-6866 and other applicable governmental and commercial documentation specifications are provided with each shipment.

Companion Materials:

Developers- Sherwin **D-90G** Dry Powder (form a)
Sherwin **D-100** Nonaqueous (form d)
Sherwin **D-106** Nonaqueous (form d)
Sherwin **D-110A.1** Nonaqueous (form c)
equivalent QPL-25135 developers

Removers- Sherwin **DR-60** (Class 2)
Sherwin **DR-62** (Class 2)
equivalent QPL-25135 removers

Container Sizes: one-gallon cans
case of 4 one-gallon cans
five-gallon pail
55-gallon drum

Basic Instructions: (These instructions describe the basic process, but they may need to be amended by the user to comply with applicable specifications and/or inspection criteria provided by the contracting agency.)

1. **Application:** Apply HM-430 only to clean, dry surfaces by spraying, flowing, brushing or dipping.
2. **Dwell-Time:** A 10 minute dwell time is suggested, although in many cases 5 minutes will suffice. When particularly tight cracks are suspected, or the part is especially critical, the dwell time may be extended to 30 minutes, or longer.

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Do not soak the part. To increase sensitivity, as well as conserve material, allow the penetrant to drain from the part surface back into the penetrant tank.

3. **Removal:** Use a quick, ambient temperature water wash at tap pressure to rinse **HM-430** from the part surface. To avoid washing entrapped penetrant from surface flaws, do not use high water pressures and temperatures, or prolonged washing and scrubbing.
4. **Drying:** A recirculating oven set no higher than 160°F (71°C) is suggested. Leave part in oven just long enough to evaporate surface moisture. Drying is improved by using pressurized air to disperse and remove as much excess water as possible before placing part in oven.
5. **Developing:** **HM-430** is self-developing. Flaw marks are visible under black light almost immediately after the part is free of moisture. However, two or more minutes should elapse before final inspection.

Flaw marks may be amplified using a developer such as **D-90G** (dry) or **D-100** (nonaqueous). Whether a developer is used to enhance visibility on the criticalness of the part, governing specifications, type of defect suspected, black light intensity, etc. (MIL-STD-6866 mandates using a developer.)

Applicable Specifications:

MIL-I-25135 Rev. D & E
MIL-STD-271 E
AMS-2647
MIL-STD-2132

AECL
MIL-STD 6866
ASTM-E-165
RDT-F3-6T

ASME Code NDT, Sec. V
Navships 250-1500
AMS-3156
AMS-2644

PRECAUTIONARY INFORMATION

HM-430 is a combustible liquid. Use with adequate ventilation and away from sparks, fire or open flame. Avoid prolonged or repeated contact with skin. Do not take internally. Avoid prolonged or repeated breathing of vapors.

