

I-319 FLUORESCENT PENETRANT

Approved To Group VI, Revision C of MIL-I-25135



PRODUCT INFORMATION

Description: I-319 is a water-miscible, water-base fluorescent penetrant. Virtually "sulfur and halogen free." Flash point over 200°F. OSHA Class IIIB material.

Special Features: As a water-base penetrant, I-319 has special advantages: it is compatible with liquid oxygen (LOX) applications under special mixing and processing conditions; it contains virtually no halogens or sulfur; it is non-flammable; and it does not contain petroleum oils or distillates.

I-319 is an approved Group VI equivalent under MIL-I-25135. It meets NASA MSFC-SPEC-106B when diluted with equal parts of distilled water and used with D-90G Developer (dry powder). It also meets Rockwell International Rocketdyne Division RA0115-116, Amend. No. 1 of 17 December 1974, as well as Martin Marietta standards.

Companion Materials:

Developers-	Sherwin D-90G Dry Powder (form a)
	Sherwin D-100 Nonaqueous (form d)
	Sherwin D-104A Nonaqueous (form d)
	Sherwin D-106 Nonaqueous (form d)
	equivalent QPL-25135/AMS-2644 developers

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 a thin coat of I-319 only to clean, dry surfaces by spraying, flowing, brushing or dipping.
2. **Dwell-Time:** A 10 minute, or longer, dwell time is suggested. Penetrant dwell must be a drain to permit water constituent to evaporate.

Look for a color shift. As water evaporates from the draining part, the penetrant's color will shift. Do not remove excess penetrant until the color shift is complete.

3. **Removal:** Use a quick, ambient temperature water wash at 30-40 pounds pressure to rinse I-319 from the part surface. To avoid washing entrapped penetrant from surface flaws, do not use high water pressures and temperatures, or prolonged wash and scrubbing. Wash under black light.
4. **Drying:** Remove excess surface water by using pressurized air to disperse and remove as much excess water as possible before placing part in oven. Place part in a recirculating oven set no higher than 160°F (71°C) just long enough to evaporate surface moisture. Use a heat gun to dry parts too large to fit in oven; avoid over heating.
5. **Developing:** I-319 is self-developing. To amplify flaw marks, or in critical inspection situations, use a developer such as the Sherwin developers listed above. (ASTM E-1417 specifies the use of a developer.)

PRECAUTIONARY INFORMATION

I-319 is nonflammable as supplied; however, if water component is allowed to evaporate, material becomes combustible. 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. DANGER! Causes eye burns. First Aid: flush eyes with water; call physician. Read the label on the container and the MSDS form for additional precautionary information.

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