



## I-319

### Technical Data Sheet

**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:**

1. It is a water-base penetrant.
2. It is compatible with liquid oxygen (LOX) applications.
3. It is non-flammable.
4. It is minimally polluting, is over 75% water and does not use petroleum solvents

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-90 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.

#### **Chemical Properties**

Color:	Yellow
Viscosity:	12.7 cSt @ 100°F
Fluorescence:	Yellow/Green
Water Tolerance:	Infinite
Flash Point:	>200°F (98°C)

#### **Companion Products**

D-90G Dry Powder Developer  
D-100 Non-Aqueous Developer  
D-106 Non-Aqueous Developer

#### **Packaging**

One Gallon Cans  
Five Gallon Cans  
55 Gallon Drums

#### **Storage /Shelf Life**

Keep away from moisture and sunlight.  
Temperature limit: 40°F to 125°F (0-50°C)



Keep the container closed when not in use.

Shelf life from invoice date: Bulk Container – 36 months

### **Instructions**

**Note:** These instructions describe the basic process, but they may need to be amended by the user to comply with applicable specification and/or inspection criteria provided by the contracting agency.

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.
3. 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.
4. 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.
5. 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 overheating.
6. 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.)

### **Health & Safety**

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 a physician. Read the MSDS and label on the container for additional precautionary information.