RC-88 FLUORESCENT PENETRANT

Technical Data Sheet

Description: RC-88 is a level 4, Method B & D non-water washable fluorescent penetrant formulated for super critical inspections. **RC-88** is primarily used for evaluating the critical components of turbine engines such as discs, compressor blades, and fan blades.

Chemical Properties

Color: Green
Viscosity: 9.9 cSt @ 100^{0}F
Fluorescence: Yellow/Green
Flash Point: 230^{0}F (110^{0}C)

Companion Products

D-90G Dry Powder Developer
D-100 Non-Aqueous Developer
D-106 Non-Aqueous Developer
D-113G Water Soluble Developer
ER-85 Lipophilic Emulsifier
D-110A Water Suspendable Developer
DR-60 Solvent Remover
DR-62 Solvent Remover
ER-83A Hydrophilic Emulsifier

Packaging

One Gallon Cans
Five Gallon Cans
55 Gallon Drums

Storage /Shelf Life

Keep away from moisture and sunlight.
Temperature limit: 40^{0}F to 125^{0}F (0-50^{0}C)
Keep the container closed when not in use.
Shelf life from invoice date: Bulk Container – 5 Years

Specifications

SAE AMS 2644 & QPL – Type 1, Method B & D, Level 4
MIL-I-25135 Revisions D & E
Lockheed Martin
Rolls Royce
Turbomeca
General Electric
MTU
ASME Code NDT, Sec V
Boeing
Honeywell
Airbus
Northrop Grumman

Special Features

1. Low to near zero background for assured indication visibility.
2. Sharp, precise flaw indication for rapid interpretation.
3. Excellent electrostatic spray capability.
4. Long material tank life due to formula stability and non-volatility.

5. Low material consumption (low drag out) due to low viscosity.
6. Clean, odorless product, vapor free atmosphere.

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.

1. **Application:** Apply **RC-88** 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 five 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. Allow the penetrant to drain from the part surface back into the penetrant tank to conserve material.
3. **Removal**:

A) Hydrophilic Dip Method

a) Pre wash: Following the dwell, use a plain water rinse to remove most of the undrained penetrant from the surface. Use a coarse spray of ambient temperature water.

b) Immersion: Immerse and agitate the part in 20-30% hydrophilic emulsifier solution. Immersion time and agitation time will vary with part geometry and surface condition.

c) Rinse: Remove the part from the tank; clean with a coarse, plain water spray.

B) Hydrophilic Spray Method

a) Wash: Following the dwell, use an inject of 0.1 to 5.0% emulsifier solution to wash the excess penetrant from the part surface. Time and solution concentrations will vary with part geometry and surface conditions.

b) Rinse: Use a coarse plain water spray to remove all traces the emulsified penetrant.

C) Lipophilic Method

a) Emulsification: Following the dwell, dip the part into undiluted lipophilic emulsifier. Remove the part and allow the excess emulsifier to drain back into the tank. Parts with rough surfaces require longer drain times.

b) Rinse: Use a coarse plain water spray to remove all traces of the emulsified penetrant.

D) Solvent Wipe Method - Remove as much excess penetrant as possible using clean dry rag or toweling. Remove remaining penetrant film by wiping with a rag or toweling that has been slightly moistened with solvent. Use a minimum of solvent; avoid flushing penetrant from flaws. Do not spray solvent directly on the part surface when removing excess penetrant. Rough surfaces require more generous application of solvent.

4. **Drying**: A re-circulating oven set no higher than 160^0F (71^0C) is suggested. Leave the part in the 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 the part in to the oven.

5. **Developing**: Apply the developer by cloud, dusting, spray or dip using the appropriate developer. Flaw marks are visible under black light almost immediately, but allow sufficient developing time to enhance the flaw visibility.
6. **Inspection:** Inspect parts under appropriate UV-A light intensity and minimal visible light.

Health & Safety

RC-88 is a combustible liquid. Use with adequate ventilation and away from sparks, fire or open flames. Avoid prolonged or repeated contact with skin. Do not take internally. Consult the MSDS for more safety and health information.