



ER-83C Method D Emulsifier

Technical Data Sheet

Description: ER-83C is a hydrophilic emulsifier used diluted with water to emulsify Sherwin's non-water washable penetrants. ER-83C removes surface, non-water washable penetrants by spray or immersion. It complies with low sulfur, low halogen, and low-sodium requirements.

Chemical Properties

Color:	Pinkish
Viscosity:	16.4St @ 100°F
Flash Point:	220°F (104°C)
Water Content:	0.3%

Companion Products

DP-40, FP-22B, RC-50, RC-55, RC-65, RC-77, RC-88

Packaging

One Gallon Cans 55 Gallon Drums
Five Gallon Cans

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

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Specifications

SAE AMS 2644 & QPL – Method D Remover

ASME Code NDT, Sec V

Pratt & Whitney FPM

Special Features

1. Low to near zero background for assured indication visibility.
2. Clean, odorless product, vapor free atmosphere.
3. Minimizes the risk of over – emulsification.
4. Large useable concentration range.

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 non-water washable penetrant, DP-40, FP-22B, RC-50, RC-55, RC-65, RC-77, 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) Immersion Method:

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



b) Immersion: Immerse and agitate the part in a 15 to 30% emulsifier solution. Immersion time and agitation will vary with part geometry and surface condition.

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

Use a refractometer to monitor the **ER-83C** solution for evaporative water loss, which can occur rapidly in hot, dry conditions. Water loss leads to an over-active emulsifier solution. Restore proper solution strength by simply adding water.

B) Spray Method:

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

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

4. **Drying:** A re-circulating oven set no higher than 160°F (71°C) 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 into the oven.

5. **Developing:** Apply the developer by cloud dusting, spray or dip using the appropriate developer. Flaw marks are visible under appropriate lighting almost immediately, but allow sufficient developing time to enhance the flaw visibility.

6. **Inspection:** Inspect parts under appropriate light.

Health & Safety

Undiluted **ER-83C** is a combustible liquid. Use with adequate ventilation and away from fire or open flames. Wear safety glasses and use good hygiene. Avoid prolonged or repeated contact with skin. Do not take internally. Consult the SDS for more safety and health information.