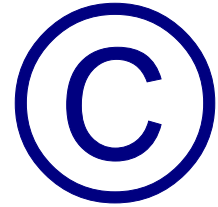


## **CIRCLE SYSTEMS, INC.**

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## **TECHNICAL BULLETIN #273**

### **MI-GLOW 850**

MI-GLOW 850 is a red magnetic powder used for visible and fluorescent magnetic particle inspection. This product is a premix of dual-light particles and WETTING AGENT for use in a water system. MI-GLOW 850 is designed to be used in visible light for revealing defects found in structural fabrications. Ultra-violet light may be used to further highlight defect indications in either a well-lit or darkened area.

Due to its dual light capability, the recommended concentration varies from 3.0 grams/liter to 24.0 grams/liter. The respective settling bulb readings range from 0.3 ml to 3.0 ml. The lower values are appropriate for strict UV applications for minimal background fluorescence. The higher values are appropriate for visible light applications where greater particle build up is helpful.

### **PROPERTIES**

Particle Color: Fluorescent orange-red under black light and visible red under white light.

Particle Size: Not less than 98% passage through US Standard No. 325 (45  $\mu\text{m}$ ) sieve. The typical range of particle sizes is from 5 to 20  $\mu\text{m}$ , with an average particle size of 9  $\mu\text{m}$ .

Sensitivity: MI-GLOW 850 shows a minimum of 6 lines on an AISI 01 Ketos tool steel ring (as defined in SAE AS5282) set on a 1-inch diameter copper bar, magnetized with 2500 A of direct current.

Particle Certification: Particles meet all relevant specifications including but not limited to MIL-STD-1949, ASTM E 1444, AMS 3042, MIL-STD-271(SH), NAVSEA 250-1500-1, NTR-1E. Certification is included with each shipment.

Preparation: MI-GLOW 850 should be used at a concentration of 0.4 to 3.2 oz. av. per one gallon (3.0 to 24.0 grams/liter) of water. For best results, add a small amount of water to the powder and form a slurry prior to addition to the bath.

Concentration Test: The suspension as delivered on the part or weld surface should be tested for magnetic substance content by the following method at 8-hour intervals or shorter intervals if required by the user. The method should be as follows:

1. Run the circulating pump on the test equipment for at least 30 minutes.
2. Fill a 100 ml graduated centrifuge tube as specified in ASTM D96, or equivalent, to the 100 ml mark with suspension directly from the hose or other device used for applying it to the part. Demagnetize the suspension if considered necessary and let it stand undisturbed for 30 minutes in a UV system and 60 minutes in a visible light system.
3. Read the volume of the precipitate in the graduate.

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