



CIRCLE SYSTEMS, INC.

Technical Bulletin #192 **Mi-Glow® 218X**

Mi-Glow® 218X is a combination of Mi-Glow® 800 and Mi-Glow® 900 fluorescent yellow-green particles premixed with powdered Wetting Agent 4X (minimal wetting characteristics) for use in water media. It is specially designed to be used with black light to detect small and medium sized discontinuities. This material is primarily used in the Steel Mills for Billet and Bar Inspection.

Properties

Particle Color: Fluorescent Yellow-Green

Specific Gravity: 1.1 g/ml

Particle Size: Not less than 98% passage through US Standard No. 150 (106 µm) sieve.

Sensitivity: Mi-Glow® 218X shows a minimum of 8 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: It meets or exceeds all applicable industry specifications.

Temperature Limits: 32-120°F (0-49°C)

Shelf Life: Four (4) years, when closed containers are stored in a clean dry environment, away from excessive heat or cold. A Certificate of Shelf Life is available upon request.

Directions for Use

Preparation: Mi-Glow® 218X should be used a concentration of 32 oz. av. (2.4 grams/liter) per 100 gallons of water. For best results, add a small amount of water to the mixture to form a slurry prior to addition to the bath.

Settling Test: The settling test, to check particle concentration and contamination, shall be performed upon startup, at each shift thereafter and whenever the bath is changed or adjusted.

Checking Bath Concentration - The settling test is essential to check the bath concentration and is accomplished by gravity settling in a graduated pear-shaped centrifuge tube as specified in Guide E709.

1. Run the pump for 30-60 minutes, to agitate the suspension thoroughly and to assure particle distribution.
2. Fill 100 ml sample from the delivery hose into the centrifuge tube.
3. Demagnetize the sample and stand, together.

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4. Allow particles to settle for a minimum of 30 minutes or until completely settled.
5. The recommended volume is between 0.15 and 0.25 ml and will vary from one specification to another. (Read the settled particles that are fluorescent using a black light.)
6. Adjust bath, either by adding particles or vehicle, if necessary.

Checking Bath Contamination - To determine bath contamination, use the same sample that was used for the concentration settling test, and examine the liquid above the settled particles with a black light. The liquid should be clear. If the bath is noticeably fluorescent, the bath must be changed. Next, examine the graduated portion of the tube where the particles have settled, with a black light and visible light for striations or bands of contamination that will be different in color and appearance than the settled particles. These striations or bands represent solid contamination, and if they exceed 30% of the settled particles, the bath should be changed.

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