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Technical Bulletin 321
Mi-Glow® 601

Mi-Glow® 601 is a red particle for use in CircleSol M™, a refined petroleum distillate. It is designed to be used with visible light for detecting discontinuities found in structural fabrications and weldments. Higher particle concentration provides heavier indication buildup for easy detection. Mi-Glow® 601 can be further enhanced when used with a UV-A light or blue light.

Properties

Particle Color: Red

Specific Gravity: 0.4 g/ml

Particle Size: The typical range of particle sizes is from 6 to 80 µm, with an average particle size of 12 µm.

Particle Certification: Particles meet or exceed all relevant industry specifications See Certificate of Compliance for specific list of 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® 601 should be mixed at 16 oz per ten gallons (12.0 grams/liter) of CircleSol M™. For best results, add a small amount of CircleSol M™ to the powder and form a slurry prior to adding to the bath. Pour the slurry near the pump inlet.

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.
4. Allow particles to settle for a minimum of 30 minutes or until completely settled.
5. The recommended volume is 1.2 ml.
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.

Lighting:

Visible Light Inspection - White light providing at least 100 foot candles (1,000 lux) at the part surface is recommended.

UV Light Inspection - UV-A light providing at least 1000 microwatts/cm^2 at the part surface is recommended.