

FlawGlo®

Product Data Sheet

WF 418

Water Based Fluorescent Powder

WF 418 is a dual response particle that easily detects discontinuities in UV-A or a combination of UV-A and visible light. WF 418 particles are premixed with Wetting agent for use in water based systems. WF 418 is capable of being used to inspect on surfaces upto 300°F (149°C) without additives using specific directions detailed below.

General Appearance:

- Aspect: Fluorescent yellow-green powder

Properties:

- Concentration: 6 g/ltr
- Temperature Limits: Dry Powder Storage: 32 - 120°F (0-49°C)
- Specific Gravity: 1.1 g/ml
- Application: 32 - 300°F (0-149°C)
- Particle Size: Not less than 98% passage through sieve as defined in AMS 3044. The typical range of particle sizes is from 2 to 18 µm, with an average particle size of 7.5 µm.
- Sensitivity: WF 418 shows a minimum of 8 lines on an AISI 01 Ketos tool steel ring (as defined in SAE AS 5282), set on a 1-inch diameter copper bar, magnetized with 2500 A of direct current.

Compliance & Specifications:

- AMS 3044
- API RP 5A5
- ASME B&PV
- ASTM E709
- ASTM 3024
- ASTM E1444
- MIL-STD-271
- MIL-STD-2132
- NAVSEA 250-1500-1

Shelf Life:

Four (4) years, when closed containers are stored in a clean, dry environment away from excessive heat and cold.

Pack Sizes: 1kg container

Application Specific Directions for use – UV-A Inspection

- Lighting: The inspection area should be darkened such that no more than 2 foot candles (20 lux) of white light is present. A UV-A light source capable of 1000 µW/cm² at the part surface is recommended.
- Preparation: WF 418 should be used at a concentration of 6.0 g/ltr. For best results, add a small amount of water to the powder to form a slurry prior to addition to the bath.
- Settling bulb volume: 0.15–0.25 ml

Application Specific Directions for use – Dual Response Inspection (UV-A & visible light)

Lighting	Preparation – per 10 gallons	Settling Bulb Volume
1000 μ W/cm ² + 0 – 100 lux	6.0 g/liter	0.15 – 0.25 ml
1000 μ W/cm ² + 101-250 lux	10 g/liter	0.25 – 0.35 ml
1000 μ W/cm ² + 251 - 400 lux	14 g/liter	0.35 – 0.45 ml
5000 μ W/cm ² + 0 – 100 lux	6.0 g/liter	0.15 – 0.25 ml
5000 μ W/cm ² + 101 - 250 lux	10 g/liter	0.25 – 0.35 ml
5000 μ W/cm ² + 251 - 400 lux	10 g/liter	0.25 – 0.35 ml
5000 μ W/cm ² + 401 - 500 lux	14 g/liter	0.35 – 0.45 ml

Additional Directions for use in Applications above 120°F

- Particle Application - WF 418, suspended in water, shall be applied by the wet continuous method – the medium is applied prior to magnetizing the part. Proper timing of part magnetization and application of particle suspension over the area to be examined are required to obtain the proper formation and retention of indications.
- Materials Performance Verification - The overall performance of this special high temperature application shall be verified, recorded and maintained daily. A reliable method for material performance verification is the MTU test block . If the correct magnetic particle indications are produced and identified on this test block, then the material and bath is verified for further use. The bath must be replaced if indications are not produced.

Note: These directions apply to both UV-A inspection areas and UV-A and visible inspection areas (dual response) as described above.

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