MAGNAGLO®

MAGNAGLO MG 410

WET METHOD FLUORESCENT PARTICLES

General Description

Magnaglo MG 410 is a powder concentrate used to prepare fluorescent ink for wet method magnetic particle testing. The ink is used in conjunction with suitable magnetising equipment for use in general wet method magnetic particle inspection.

MG 410 may be suspended in either a petroleum-based vehicle (oil) such as Magnaglo-Magnavis MG-MX Carrier II, or in water. When water is used as a vehicle a conditioning agent such as Magnaflux WA-4E is required. The conditioning agent improves particle suspendibility, mobility and surface wetting together with nominal corrosion inhibition.

Inks made from MG 410 give clear bright fluorescent green indications when viewed in a darkened area under UV(A) of peak wavelength 365nm. A totally darkened inspection area is not required due to the intense brightness of MG 410.

Applications

MG 410 is used to locate medium/fine surface and slightly subsurface discontinuities such as: inclusions, seams, shrink cracks, tears, laps, flakes, welding defects, grinding cracks, quenching cracks, and fatigue cracks.

Composition

MG 410 is composed of compounded fluorescent pigment and magnetic powder.

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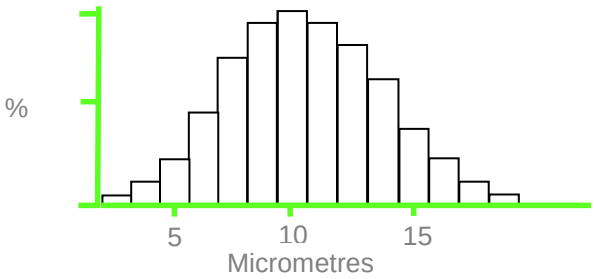
Typical Properties (not a specification)

Property	MG 410
Form	Green powder
Colour under UV (365 nm)	Bright green
SAE sensitivity	7
Recommended concentration range	0.75-1.50 g/litre
Settlement volume	0.1-0.4 ml (at 20 ml/litre) Manufactured to ca 0.2 ml (at 20 ml/litre)
Temperature limit	48 ℃

Particle Size Range



Like all Magnaflux materials Magnaglo MG 410 is closely controlled to provide unique batch to batch consistency and uniformity to assure optimum process control and inspection reliability.

Benefits

- ✓ Clear bright indications
- ✓ Can be suspended in oil or water

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Bath Preparation

The recommended concentration is 0.75 to 1.50 g of MG 410 per litre of carrier (oil or water).

- **Oil Based Ink**

  Mix the weighed out powder with the required quantity of a suitable oil carrier such as MG-MX Carrier II, and allow to mix for approximately 15 minutes or until fully dispersed. Before use check for correct settlement volume.

- **Water Based Ink**

  Prepare the water carrier by mixing 10 g of Magnaflux WA-4E wetting agent per litre of water.

  Weigh out the appropriate amount of MG 410 powder then add to the prepared water carrier and allow to mix for approximately 15 minutes or until fully dispersed. Before use check for correct settlement volume.

Method of Use

Components should be cleaned prior to testing to reduce the risk of bath contamination and to provide a suitable test surface.

The ink can be applied by spraying, immersion or flooding.

The ink must be mixed thoroughly prior to use and must be kept agitated during testing.

- Using the wet continuous method, the ink is applied to all surfaces of the component during magnetisation. The indications will be formed during the application of magnetising current. The flow of ink must be stopped before the magnetising current is switched off, otherwise there is a risk that the force of the ink application may wash away indications.

- Using the wet residual method, the premagnetised part is immersed in the bath, removed, allowed to drain and then inspected. This method is generally less sensitive than the continuous method and is more susceptible to rapid particle depletion and bath contamination.

Bath Replenishment/Concentration Control

In use the magnetic content of any ink will become depleted. To guard against this the bath strength should be checked at make-up and at least once each day. The most widely used method of control is by settlement volume using a graduated ASTM pear shaped centrifuge tube.

When the settlement volume approaches the lower limit then additions of Magnaglo MG 410 particles can be made to the bath providing the bath liquid is still clean and uncontaminated.

If the bath appears contaminated or has been in use for any length of time, the contents should be replaced.

After inspection the components should be properly demagnetised before cleaning to insure ease of particle removal.

Specification Compliance

Specification	MG 410
ASME B & PV Code, Sec V	✓
ASTM E-709	✓
MIL-STD-2132	✓
NAVSEA 250-1500-1	✓
NAVSEA T9074-AS-GIB-010/271	✓
Rolls Royce CSS231	✓
SAFRAN In-5300	✓

Availability

MG 410 is available in 1 Kg containers, part number 057C036.

Health and Safety

- Safety Data Sheets for this product are available on request from your Magnaflux distributor or via the Magnaflux website (www.eu.magnaflux.com).
- Read the relevant Safety Data Sheets before use.

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