

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 magnetizing equipment for use in general wet method magnetic particle inspection.

It 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.

MG 410 may be suspended in either a petroleum-based vehicle (oil) such as MAGNAFLUX MG Carrier II, or in water. When water is used as a vehicle, conditioning agents such as WA-2B, or WA-4E are required. The conditioning agents improve 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.

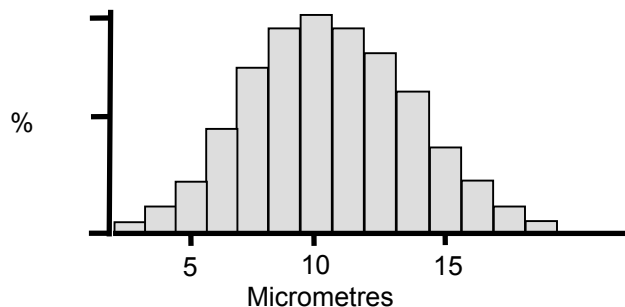
Composition

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

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 per litre
Settlement Volume	0.05 - 0.15 ml
Temperature Limit	48°C

Particle Size range



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

Bath Preparation

The recommended concentration is 0.75 to 1.50 g of MG 410 per litre of carrier.

Oil Based Ink

Mix the weighed out powder with the required quantity of a suitable oil carrier such as 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 dissolving 10 g of WA2B or WA4E 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 magnetization.

The indications will be formed during the application of magnetising current.

The flow of ink must stop before the magnetising current 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, it should be replaced.

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

Specification compliance

ASME B & PV Code, Sec V

MIL-STD-2132

NAVSEA T9074-AS-GIB-010/271

Rolls Royce CSS231

NAVSEA 250-1500-1

ASTM E-709

BS 4069

MAGNAGLO®

MG 410 is available in
1 Kg packs *Part No 057C036*

Safety

Safety data sheets for this product are available on request.

Avoid breathing product dust when handling.

Avoid contact with skin and eyes.

Wear suitable gloves and eye protection if there is a risk of skin or eye contact.

Magnaflux Division of I.T.W. Ltd.,
Faraday Road, South Dorcan Industrial Estate,
Swindon, Wiltshire, SN3 5HE.

Tel : (01793) 524566 Fax : (01793) 619498
Web www.magnaflux.co.uk



Issue Date : 01/09/05 TDS No : MG 410 Rev No 01