MAGNAGLO®

WET METHOD
FLUORESCENT PARTICLES

MAGNAGLO®
MG-3410

General Description

Magnaglo MG-3410 is a dry, free flowing, green magnetic powder which fluoresces bright green under UV black light (wavelength of 365 nanometers). Its bright fluorescent color contrasts with the background of clean metal surfaces when viewed under black light in a darkened area.

MG-3410 is used with water as the suspension vehicle. The powder contains conditioners which improve the magnetic particle suspendibility, mobility and wetting of test part surface.

No additional wetting or conditioning agents are required when MG-3410 is used.

Benefits

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

Applications

MG-3410 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.

Typical applications include magnetic particle inspection of steel billets, tube rounds and large castings for the detection of small to large defects.

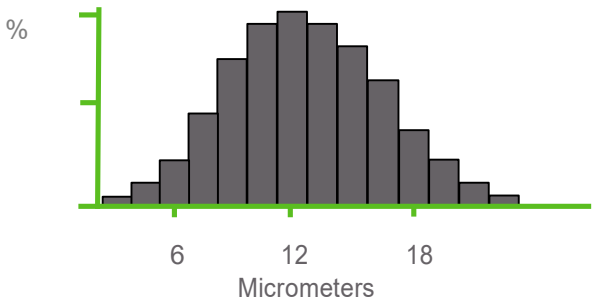
Composition

MG-3410 is composed of compounded fluorescent pigment and magnetic powder with non – ionic surfactants, corrosion inhibitors and anti-foaming agents

Typical Properties (not specification)

Property	MG-3410
Form	Green powder
Colour under UV (365 nm)	Bright green
SAE sensitivity	6-7
Recommended concentration range	1.0 – 1.85 g/litre
Settling volume (0.75 g/L of water – 30 min)	0.04 ml – 0.1 ml
Temperature limit	48 °C

Particle Size Range



Like all Magnaflux materials Magnaglo MG-3410 is closely controlled to provide unique batch to batch consistency and uniformity to assure optimum process control and inspection reliability.

Bath Preparation

Weigh out appropriate amount of MG-3410, add enough water to form a thick slurry and mix material.
Add the slurry to the agitated bath.
Run pump for 30 minutes, before testing commences.

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 bath can be applied by spraying, immersion or flooding.

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

- Using the wet continuous method, the bath is applied to all surfaces of the component during magnetization. The indications will be formed during the application of magnetizing current. The flow of bath must be stopped before the magnetizing current is switched off, otherwise there is a risk that the force of the bath 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 bath 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 settling volume using a graduated ASTM pear shaped centrifuge tube.

MAGNAFLUX P/N T03002 is recommended for MG-3410 with a 0.3 ml stem. The tube is filled to the 100 ml line with well mixed bath. The tube is placed in the stand in a vibration-free location for 30 minutes. After 30 minutes, the settling volume is taken. The settling volume indicates the number of magnetic particles present in the bath.

In billet units the settling tube should be examined under black light to determine the amount of non-fluorescent scale present in the bath. Scale will reduce the brightness of the fluorescent indications and may completely overwhelm the fluorescent particles preventing flaw detection.

When the settling volume approaches the lower limit then additions of Magnaglo MG 3410 particles can be made to the bath providing the bath liquid is still clean and uncontaminated. If the reading is too high, add water.

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 demagnetized before cleaning to ensure ease of particle removal.

Specification Compliance

Specification	MG -3410
ASME B & PV Code, Sec V	✓
ASTM E-1444	✓
AMS 3044	✓
IS0 9934	✓

Availability

MG-2410 is available as follows:

- 1 kg containers, part number F03018

MAGNAGLO®

Health and Safety

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

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MANAGEMENT SYSTEM CERTIFICATION
DNV
ISO 9001 · ISO 14001
ISO 45001