



MG-410 WET METHOD FLUORESCENT MAGNETIC POWDER

General Description

- MG-410 is a dry, free flowing, green magnetic powder which fluoresces bright green under black light (wavelength of 365 nanometers).
- MG-410 is used for general purpose wet method magnetic particle inspection of inclusions, seams, shrink cracks, tears, laps, flakes, welding defects, grinding cracks, and fatigue cracks.
- MG-410 may be suspended in water. Conditioning agents such as WA-2B or WA-4 are required to improve particle suspendibility, mobility and wetting of test part surface.
- MG-410's bright fluorescent color contrasts with the purple background of metal surfaces when viewed under black light in a darkened area. A totally darkened inspection area is not required due to the intense brightness of MG-410.
- The recommended use concentration of MG-410 is 1/10 ounce per gallon of oil or water (0.75 grams/liter). Higher concentrations may be required for specific applications.

Composition

- MG-410 is composed of compounded fluorescent pigment and magnetic particles.

Typical Properties (Not a Specification)

Color under white light:	Green
Color under black light:	Yellow-green fluorescence
Mean Particle Size:	10 microns
SAE sensitivity:	7
Settling Volume (1/10 ounce/gallon water (30 min.))	0.05 ml to 0.15 ml
Temperature limit:	120 °F Maximum

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

Bath Preparation

MG-410 can be used with oil vehicles. However, it is generally used in water. For more rapid and uniform dispersion, it is best to pre-slurry the MG-410 and the conditioning agent. Weigh out the appropriate amount of magnetic powder and WA-2B or WA-4. Add enough water to form a thick slurry and mix material. Add the slurry to the agitated bath tank.

If the materials are added to the bath tank dry, the conditioner should be added first and allowed to mix uniformly through the bath before adding the MG-410.



Recommended Conditioner Concentration

MG-410	1/10 ounce/gallon water
WA-2B	1-1/3 ounce/gallon (10 g/liter)
WA-4	1% by volume

Concentration Control

The bath strength should be maintained constant at all times to ensure consistent results. The concentration should be checked at make-up time and at least once each day. The most widely used method of control is by gravity settling in a graduated ASTM pear shaped centrifuge tube. MAGNAFLUX P/N 507923 is recommended for MG-410 with a 0.2 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 for water (60 minutes for Carrier II oil). After 30 minutes for water, (60 minutes for Carrier II) the settling volume is taken. The settling volume indicates the amount 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.

A concentration of 1/10 ounce/gallon of MG-410 will have a settling volume of 0.05 to 0.15 ml. If the reading is too high, add vehicle. If the reading is too low, add MG-410 magnetic powder.

Application

Parts should be cleaned prior to testing to reduce bath contamination and to ensure a more desirable test surface. The bath must be continuously agitated when in use to ensure uniformity, as particles will settle out of suspension on standing.

Using the wet continuous method, the bath is applied to all surfaces of the part. The instant the bath stream is removed from the part the magnetizing current is applied. The indication will be formed during the current shot. If the bath is applied after the magnetizing shot, the force of the bath application may wash away indications.

Post Inspection Cleaning

The parts must be properly demagnetized before cleaning for easy particle removal.

Specification Compliance

ASME B & PV Code, Sec. V
NAVSEA 250-1500-1
MIL-STD-2132
ASTM E-709
NAVSEA T9074-AS-GIB-010/271

The logo for MAGNAGLO is displayed in white, bold, uppercase letters within a blue arrow-shaped banner pointing to the left. The registered trademark symbol (®) is located to the upper right of the 'O'.**Packaging:**

1 lb. container
10 lb. container
25 lb. container

Safety:

1. MG-410 is intended for industrial use by qualified personnel only.
2. Do not smoke or eat while using MG-410. Wash hands thoroughly after use.
3. Wear protective hand wear to protect hands from drying out from contact with vehicle.
4. Store MG-410 in closed containers in a dry location away from heat sources.
5. Material Safety Data Sheets available at www.magnaflux.com.