MAGNAFLUX

Product Data Sheet
产品数据表

MG-410

FLUORESCENT MAGNETIC PARTICLE
荧光磁粉

MG-410 is an ultra-bright fluorescent magnetic particle powder for locating small, medium, and large discontinuities. These particles provide clear, ultra-bright, fluorescent green indications under UV light with minimal background. MG-410 is designed for use in water or oil baths for wet method fluorescent magnetic particle testing.

MG-410 是一款高荧光亮度磁粉，适合检测各种大小的缺陷。在黑光灯下该荧光磁粉可以在产生较少荧光背景的条件下提供明亮清晰的荧光黄绿色缺陷显示。MG-410磁粉可以配制水浴或油浴进行湿法荧光磁粉检测。

MG-410 is fluorescent powder which can be mixed with either water or oil for a wet-method inspection of metal parts. It detects medium to fine surface and slightly subsurface discontinuities such as cracks, inclusions, seams, tears, laps, flakes and welding defects. Indications appear an intense yellow-green under UV lighting. Conditioners for water baths such as WA-2B powder or WC-1 liquid should be used for anti-foaming, corrosion inhibiting, as a wetting agent and to facilitate particle suspension.

MG-410是一款可以与水或者油配合进行湿法检测金属零件的荧光磁粉，可以检测到大中小型表面和近表面的裂纹，夹杂，接缝，应力裂纹，堆叠，白点以及焊接缺陷等，缺陷显示在黑光灯下呈明亮的黄绿色。配制水浴使用时时请务必配合WA-2B粉末或WC-1液体水质调节剂一起使用以提供消泡，防腐，润湿以及助分散等性能。

FEATURES 特性

- Clear, ultra-bright indications under UV light
  紫外光灯下缺陷显示明亮清晰
- Provides excellent discontinuity definition
  提供优秀的缺陷辨识性能
- Can be suspended in water or oil vehicle
  可以分散在水或油载液中
- Minimal background
  极少的荧光背景

SPECIFICATIONS 符合规范

- AMS 3044
- ASTM E709
- ASTM E1444
- ASME
- ISO 9934
- MIL-STD-2132
- NAVSEA 250-1500-1
- NAVSEA T9074-AS-GIB-010/271
- SAFRAN IN 5300

PROPERTIES 属性

Appearance 外观	Fine, dry powder 细小的干粉末
Color in UV Light 黑光下颜色	Fluorescent yellow-green 黄绿色荧光
Color in Visible Light 可见光下颜色	Forest green 绿色
Odor 气味	Odorless 无味
Mean Particle Size 平均粒径*	19 microns 19 微米
SAE Sensitivity SAE 灵敏度**	7

* As determined by industry-typical method for measuring particle size.
用工业上通用的方法测试颗粒度。

** Representative of the number of indications on a tool steel ring as defined in ASTM E1444.
ASTM E1444中定义的工具钢环形试块上能显示的孔数。

APPLICATIONS 应用

Defect location: surface and slightly subsurface
缺陷位置：表面及近表面缺陷

Ideal for 适用于

- Detecting small, medium, and gross discontinuities
  检测多种大小裂纹
- Raw products/materials 毛坯件产品
- After secondary processing 粗加工产品
- Textured/rough surface finishes 粗糙表面
- Unmachined parts 未处理工件
- Semi-dark environments 低亮度环境下检测
- Castings 铸造
- Forgings 锻造
- Welds 焊接

Defect examples 缺陷类型

- Inclusions 夹杂
- Seams 裂缝
- Shrink cracks 收缩裂纹
- Tears 撕裂
- Laps 折叠
- Flakes 白点
- Welding defects 焊接缺陷
- Grinding cracks 磨削裂纹
- Quenching cracks 淬火裂纹
- Fatigue cracks 疲劳裂纹

REMOVAL 清除

All components, parts, or inspection areas must be properly demagnetized before cleaning to ensure easy particle removal. Cleaned parts may be treated with a temporary film protective coating if longer corrosion protection is required.

检测结束后，为保证磁粉容易被去除，应该先对组件、工件或者被检区域进行退磁。如果有较长的防腐的要求，清洗后需要对工件进行防腐处理。

USE RECOMMENDATIONS 使用推荐

NDT Method 无损检测方法	Magnetic Particle Testing, Fluorescent or Mixed Light, Wet Method 荧光或混合光磁粉检测，湿法
Suspension Vehicle 载液	Water or petroleum distillate (oil) 水或石油馏分（油）
Required Equipment 设备要求	Magnetizing device, UV light source 磁化装置和紫外光源
Temperature range 温度范围†	0 - 49°C
Settling Volume 沉淀量	0.05 – 0.15 mL

† Particle integrity and mobility may decline beyond these temperature limits.
超出此温度范围，磁粉的完整性和流动性可能下降。

PREPARATION INSTRUCTIONS 配制指南

Oil Bath: Weigh out the appropriate amount of MG-410 and add to the appropriate amount of oil vehicle. Mix for a minimum of 15 minutes, until the particles are completely and evenly dispersed in the suspension. Check concentration before use.

油浴：称量适量MG-410磁粉并加入适量油载液。混合搅拌至少15分钟，直到磁粉充分均匀分散于磁悬液中。使用前检测浓度。

Water Bath: In water-based suspensions, conditioning agents are required to improve particle suspendibility, mobility, and surface wetting. Measure out the appropriate amount of water conditioner, add to water and mix for 5 minutes. Next, measure out the appropriate amount of MG-410 magnetic particles and add particles to the conditioned water. Add particles directly over the pump for more rapid dispersion. Mix for 15 minutes or until the particles are completely dispersed. Check particle concentration before use.

水浴：配制水基磁悬液需要水质调节剂来提高磁粉的悬浮性，移动性以及润湿性。称量适量的水质调节剂，加入水并搅拌5分钟。然后称量适量MG-410磁粉加入已调好的水中，直接用泵添加磁粉可以快速分散。搅拌15分钟或直到磁粉充分均匀分散于磁悬液中。使用前检测浓度。

Suspension vehicle 磁悬载液	**MG-410**
1 L	0.74 g

INSTRUCTIONS FOR USE 使用指南

Use MG-410 with appropriate magnetization procedure and equipment. All components, parts, or test areas should be cleaned prior to testing to provide a suitable test surface and reduce particle suspension contamination.

请配合适当的磁化设备和检测工艺来使用MG-410。为了得到最佳效果，检测前需要对待测零部件或区域进行清洁干燥以保证测试表面的最佳状态，减少磁悬液的污染。

Particle suspension can be applied by gently spraying or flooding the components, parts, or test areas. The suspension must be properly mixed and continuously agitated when in use to ensure uniformity and concentration. Particles will settle out of suspension very quickly on standing.

可以将磁悬液轻轻喷涂或倾倒于测试零部件及表面，在使用时磁悬液必需持续以适当的方式搅拌混合以保证磁粉浓度均匀性。磁粉颗粒如果不加搅拌会很快沉淀。

Maintenance Recommendations 维护建议

Magnetic particle suspensions need to be properly maintained to provide consistent results. Suspension concentration and contamination should be monitored at least once a day, or according to applicable specifications. Contaminated suspensions, or those in use for an extended length of time, should be replaced. Properly cleaning all components, parts, or inspection areas before testing helps to significantly reduce particle suspension contamination.

为了获得一致的检测结果，应采用正确的方法维护磁悬液。每天至少监测一次磁悬液的浓度和被污染程度，或根据合适的规范进行维护 。被污染的磁悬液，或者超出了使用期限的磁悬液，应及时更换。检测前对工件进行预清洗能有效减少磁悬液的污染。

Particle concentration should be determined after initial bath preparation and at least once a day, or according to applicable specifications, to maintain the proper level of particles in the suspension. The most widely used method of control is by settling volume measurement in a graduated ASTM pear-shaped centrifuge tube. For testing MG-410, Magnaflux centrifuge tube 507923 is recommended: 100 ml capacity, stem graduated from 0 to 0.2 mL in 0.01 mL increments.

测试磁悬液的初始浓度，然后每天至少再检测一次，或根据合适的规范，以保持磁悬液中磁粉处于合适的水平。用的最广泛的控制方法是：用ASTM中带刻度的梨形沉淀管测试磁粉沉淀量。推荐使用美国磁通离心管（件号：507923）检测MG-410，其规格为100毫升，测定管分级由0到0.2ml，最小刻度为0.01ml。

STORAGE 储存

Store in a well-ventilated area away from magnetizing equipment and heat sources. Product age, exposure to elevated temperatures, and/or exposure to a strong magnetic field may adversely affect particle redistribution.

通风良好处储存，远离磁化设备和热源。产品老化，暴露在高温下和/或暴露在强磁场下可能会不利于磁粉的再分散。

Protect from sunlight. Storage containers should be tightly sealed when not in use. Cool, dry storage location is preferred. Refer to Safety Data Sheet for additional storage instructions.

防止日光照射，在不使用时储存容器必需密封，适合阴凉干燥的储存环境。其他储存说明请参考安全技术表。

PACKAGING 包装形式

01-0191-10C	1 kg jar 塑料瓶

HEALTH AND SAFETY 健康与安全

Review all relevant health and safety information before using this product. For complete health and safety information, refer to the product Safety Data Sheet, which is available at **www.magnaflux.cn**.

产品使用前请阅读相关的健康和安全信息。完整的健康和安全信息参考**www.magnaflux.cn**上的SDS（安全数据表）。