

# MAGNAGLO<sup>®</sup> 14HF, 410HF



## Ready-to-use Fluorescent Magnetic Inks

### General Description

MAGNAGLO<sup>®</sup> 14HF and 410HF are oil-based, ready-to-use fluorescent inks for wet method magnetic particle testing. They give clear bright yellow/green indications when viewed in a darkened area under UV(A) of peak wavelength 365nm.

### Applications

Used in conjunction with suitable magnetising equipment, our MAGNAGLO inks will locate medium-fine surface and slightly sub-surface defects such as shrink cracks, welding defects, grinding cracks, quenching cracks, and fatigue cracks. 14HF is widely regarded as the material of choice for aerospace applications.

### Benefits

- Ready to use
- Good sensitivity
- Clear indications

### Composition

A suspension of magnetic particles in a high-flash, low-odour petroleum distillate.



Example of 410HF/14HF fluorescent indications on an ISO 9934 Type 1 reference block.

### Recommended Products

Product type	Product Name(s)
Magnetic powders	MAGNAGLO <sup>®</sup> 14A MAGNAGLO <sup>®</sup> MG 410
Cleaner	SPOTCHECK <sup>®</sup> SKC-S
Water bath additives	MAGNAFLUX <sup>®</sup> WA-1 water conditioner MAGNAFLUX <sup>®</sup> WA-2 antifoam
UV(A) lamps	MAGNAFLUX <sup>®</sup> EV6000 MAGNAFLUX <sup>®</sup> UV-LED miniSpot
Test blocks	MTU No.3 (EN ISO 9934-2)
Centrifuge Tube for fluorescent ink (part no. 044C005)	

### Typical Properties (not a specification)

Property	14HF	410HF
Form and colour	Brown liquid	Green liquid
Flash point	> 93°C (bulk product)	> 93°C (bulk product)
SAE sensitivity	8	7
Particle size range	5 - 12 µm	14 - 22 µm
Recommended concentration range	1.0 - 1.25 g/litre	0.75 - 1.5 g/litre
Settlement volume	0.15 - 0.25 ml (1 hour)	0.05 - 0.15 ml (1 hour)
Storage temperature	10°C to 30°C	10°C to 30°C
Usage temperature	-5°C to 48°C	-5°C to 48°C

Like all Magnaflux materials, our MAGNAGLO inks are closely controlled to ensure batch-to-batch consistency, optimum process control and inspection reliability.

# MAGNAGLO<sup>®</sup> 14HF, 410HF

## General Method of Use

**Clean the component** before testing to reduce the risk of contamination and provide a suitable test surface.

**Mix the ink** thoroughly and keep it agitated during testing.

**Apply the ink by spraying, flooding or immersion**, depending on your chosen method (see below):

### Wet continuous method

Apply the ink to all surfaces of the component and apply a magnetising current. Remember to stop the flow of ink **before** the current is switched off, otherwise there is a risk that the force of the ink flood may wash away indications.

### Wet residual method

This method is generally less sensitive than the continuous method and is more susceptible to rapid particle depletion and bath contamination.

- Pre-magnetise the part that needs to be tested.
- Immerse the part in a bath of the ink.
- Remove it and allow it to drain.
- Inspect the part.

During use, the magnetic content of any ink bath will become depleted so you will need to check your bath strength at least once each day. The most widely-used way of checking an ink's settlement volume is by using a graduated ASTM pear-shaped centrifuge tube.

When the settlement volume approaches the lower limit (see 'Typical Properties' table on previous page), check the bath: If it appears contaminated, or if it has been in use for a long time, replace the contents. If it is still clean and uncontaminated, choose one of the following options:

- If you're using 14HF, add some 14A powder
- If you're using 410HF, add some MG 410 powder



After inspection, remember to completely demagnetise your component before cleaning, to ensure easy removal of any residual powder particles.

## Specification Compliance

Specification	14HF	410HF
AMS2641	✓	✓
AMS3044	✓	
AMS3045	✓	
AMS3046 (Aerosols only)	✓	
ASME B & PV Code, Sec V	✓	✓
ASTM E709	✓	✓
ASTM E1444/E1444M	✓	
EN ISO 9934-2	✓	
GOST R ISO 9934-2-2011	✓	
MIL-STD-2132D	✓	✓
Rolls Royce RRP 58004 (CSS 231)	✓	
SAFRAN In 5300	✓	✓
SNECMA DMR70-520	✓	

## Availability and Part Numbers

14HF		
		
008A105 (x 10)	058C006 (x 4)	058C007

410HF	
	
008A106 (x 10)	058C016 (x 4)

## Health and Safety

Read the relevant Safety Data Sheet for this product before use. Safety Data Sheets are available on request from your Magnaflux distributor or via the Magnaflux website:

[www.eu.magnaflux.com](http://www.eu.magnaflux.com)