

MAGNAGLO 14HF 410HF



READY-TO-USE FLUORESCENT MPI INKS

General Description

Magnaglo 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

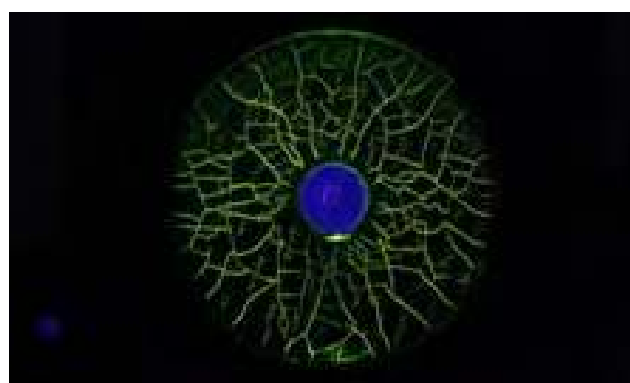
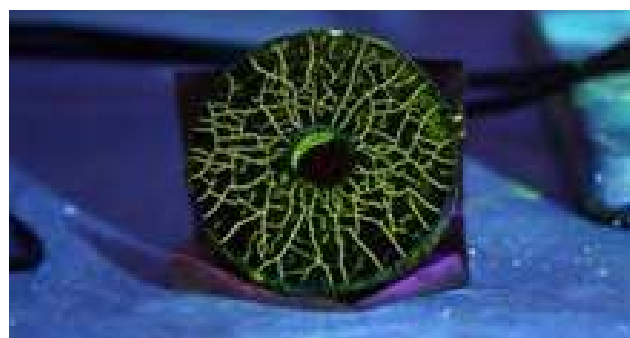
Used in conjunction with suitable magnetising equipment, our Magnaglo inks will locate medium-fine surface and slightly sub-surface defects such as shrink cracks, welding defects, grinding cracks, quenching cracks, and fatigue cracks. 14HF is widely regarded as the material of choice for aerospace applications.

Benefits

- Ready to use
- Good sensitivity
- Clear indications

Composition

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



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

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)
Colour under UV (365 nm)	Yellow/green	Bright yellow/green
SAE sensitivity	8	7
Particle size range	7 - 9	10 - 16
Recommended concentration range	1.0 - 1.25 g/litre	0.75 - 1.5 g/litre
Settlement volume	0.15 - 0.25 ml	0.05 - 0.15 ml
Storage temperature	10°C - 30°C	10°C - 30°C
Usage temperature	< 48°C	< 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 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 the '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.

Recommended Products

Product type	Product Name(s)
Magnetic powders	14A, MG 410
Water bath additives	WA-1 water conditioner WA-2 antifoam
Cleaner	SKC-S
UV(A) lamps	ZB-100F, ZB-100-LED
Test blocks	MTU No.3 (EN ISO 9934-2)
Centrifuge Tube for fluorescent ink (part no. 044C005)	

Specification Compliance

Specification	14HF	410HF
AMS2641B	✓	✓
AMS3044F	✓	
AMS3045E	✓	
AMS3046E (Aerosols only)	✓	
ASME B & PV Code, Sec V	✓	✓
ASTM E709	✓	✓
ASTM E1444/E1444M	✓	
EN ISO 9934-2	✓	
MIL-STD-2132D		✓
Rolls Royce RRP 58004 (CSS 231)	✓	
SAFRAN In 5300	✓	✓
SNECMA DMR70-520	✓	

Availability

	14HF	410HF
Unit	Part number	
10 x 400 ml aerosols	008A105	008A106
4 x 5 litre containers	058C006	N/A
25 litre containers	058C007	058C016

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: