

14HF, 410HF

Oil-based Fluorescent Magnetic Inks

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.



Used in conjunction with suitable magnetising equipment, our fluorescent magnetic inks will locate medium-fine surface and slightly sub-surface defects. 14HF is widely regarded as the material of choice for aerospace applications.

FEATURES

- Ready-to-use
- Clear, bright indications under UV light
- Low maintenance, oil-based suspension
- High sensitivity
- Excellent fluorescent contrast for quick identification and better inspection quality
- Excellent particle mobility
- Good dispersion stability
- Protects parts and equipment against corrosion
- Great concentration consistency
- Superior surface wetting
- Even surface coverage for better detection

SPECIFICATION COMPLIANCE

| | 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 | ✓ | |

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APPLICATIONS

Defect location: surface and slightly subsurface

Ideal for:

- Detecting very fine to fine discontinuities
- Critical applications
- After secondary processing
- In-service inspections
- High strength alloys

Ideal for:

- Inclusions
- Seams
- Shrink cracks
- Tears
- Laps
- Flakes
- Welding defects
- Grinding cracks
- Quenching cracks
- Fatigue cracks

COMPOSITION

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

PRODUCT PROPERTIES

| | 14HF | 410HF |
|----------------------------|--------------|--------------|
| Form and colour | Brown liquid | Green liquid |
| Flash point | > 93°C | > 93°C |
| SAE sensitivity | 8 | 7 |
| Particle size range | 5 - 12 µm | 14 - 22 µm |

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

USER RECOMMENDATIONS

| | |
|----------------------------|--|
| NDT Method | Magnetic Particle Testing, Fluorescent, Wet Method |
| Storage temperature | 10°C to 30°C |
| Usage temperature | -5°C to 48°C |
| Suspension Vehicle | MG/MX Carrier II |
| Magnetic Particles | 14A, MG 410 |
| Cleaner | SKC-S |
| Equipment | UV lamps: EV6000, UV-LED miniSPot |
| Accessories | Centrifuge Tube, MTU No.3 Test Block (EN ISO 9934-2) |

PACKAGING AND PART NUMBERS

14HF



008A105 (x 10)



058C006 (x 4)



058C007

410HF



008A106 (x 10)



058C016 (x 4)

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INSTRUCTIONS FOR 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 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 table below), check the bath.

Settlement volumes:

| 14HF | 410HF |
|----------------|----------------|
| 0.15 - 0.25 ml | 0.05 - 0.15 ml |

If the bath 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.

HEALTH AND SAFETY

Review all relevant health and safety information before using this product. For complete health and safety information, refer to the Safety Data Sheets, which are available at eu.magnaflux.com.