WB-12, WB-655

Water-based Fluorescent Magnetic Inks

MAGNAGLO® WB-12 and WB-655 are liquid concentrates used to prepare water-based fluorescent inks for wet method magnetic particle testing. These easy-to-use inks give clear bright yellow/green indications when viewed in a darkened area under UV(A) of peak wavelength 365 nm, and offer enhanced corrosion protection.

When used in conjunction with suitable magnetising equipment and a UV(A) source, MAGNAGLO inks will locate fine surface and slightly subsurface defects.

FEATURES

- Clear, bright indications under UV light
- High sensitivity
- Easy post-testing clean up
- Excellent fluorescent contrast for quick identification
- Excellent particle mobility
- Good dispersion stability
- Great concentration consistency
- Superior surface wetting
- Non-foaming
- Even surface coverage for better detection
- Good corrosion protection

SPECIFICATION COMPLIANCE

	WB-12	WB-655
AFNOR NF A 029-125		✓
AMS3044	✓	✓
ASME B & PV Code, Sec V	✓	✓
ASTM E709		✓
ASTM E1444/E1444M	✓	✓
DIN 54132		✓
EN ISO 9934-2	✓	✓
GOST R ISO 9934-2-2011	✓	✓
MIL-STD-271F		✓
MIL-STD-2132D		✓
NAVSEA 250-1500-1		✓
Rolls Royce RRP 58004 (CSS 231)	✓	
SAE AS4792	✓	✓

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APPLICATIONS

Defect location: surface and slightly subsurface

Ideal for:

- Detecting very fine to fine discontinuities
- Machined parts
- Smooth surface finish
- Critical applications
- High volume testing
- After secondary processing
- Mixing with hard-water

Ideal for:

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

COMPOSITION

A mixture of fluorescent magnetic particles, a corrosion inhibitor, wetting agents and foam control additives.

PRODUCT PROPERTIES

	WB-12	WB-655
Form and colour	Brown liquid	Brown liquid
Density	1.2 g/ml	1.1 g/ml
SAE sensitivity	7 - 8	7 - 8
Particle size range	5 - 12 µm	3 - 5 µm
pH (2% solution)	9.0	9.1
Usage temperature	-5°C to 48°C	-5°C to 55°C

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
Suspension Vehicle	Water
Water Bath Additive	WA-1 water conditioner WA-2 antifoam
Magnetic Particles	14A, MG 601
Cleaner	SKC-S
Equipment	UV lamps: EV6000, UV-LED 365/30
Accessories	Centrifuge Tube

INSTRUCTIONS FOR USE

Clean the component before testing to provide a suitable test surface.

Use an appropriate measuring device to make up the ink bath based on the following guide volumes:

Quantity of WB-12	Quantity of water
0.5 litres (500 ml)	25 litres
0.75 litres (750 ml)	37.5 litres
1 litre (1,000 ml)	50 litres

Quantity of WB-655	Quantity of water	
	Ratio 1:40	Ratio 1:60
0.5 litres (500 ml)	20 litres	30 litres
0.75 litres (750 ml)	30 litres	45 litres
1 litre (1,000 ml)	40 litres	60 litres

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Once the bottle is empty, rinse it with water to capture any remaining product and add this to the bath. Mix thoroughly and check that the bath has the correct settlement volume before use.

Settlement volumes (after 1 hour):

WB-12	WB-655
0.1 - 0.4 ml, manufactured to ca 0.2 ml (at 20 ml/litre)	0.21 ml (1:40 ratio) 0.13 ml (1:60 ratio)

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 the force of the ink flood can 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.
- Imerse the part in a bath of the ink.
- Remove it and allow it to drain.
- Inspect the part.

Be sure to agitate the ink before and regularly during use to ensure uniformity of mix. During use, the magnetic content of any ink 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, 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, add the following to the bath:

- **WB-12:** more WB-12 OR some 14A particles
- **WB-655:** more WB-655 OR some MG 601

As before, make sure that the ink is agitated immediately prior to use to ensure complete mixing of the contents.

After inspection, remember to completely demagnetise your components before cleaning, to ensure easy removal of any residual powder particles. Cleaned components can be treated with a temporary film protective coating if you need longer-lasting corrosion protection.

PACKAGING AND PART NUMBERS

WB-12

058C033 (x 6)

WB-655

058C041 (x 6)

058C042 (x 4)

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**.