MAGNAFLUX

Product Data Sheet

پترو فرهان گستر جنوب

MAGNAGLO® WB-12, WB-655

Water-suspendible Fluorescent Magnetic Particles

General Description

Our MAGNAGLO® liquid concentrates are used to prepare water-based fluorescent inks for wet method magnetic particle testing. The 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.

Applications

When used in conjunction with suitable magnetising equipment and a UV(A) source, MAGNAGLO inks will locate fine surface and slightly subsurface defects such as: shrink cracks, welding defects, grinding cracks, quenching cracks, and fatigue cracks.

Composition

WB-12 and WB-655 are made of a mixture of fluorescent magnetic particles, a corrosion inhibitor, wetting agents and foam control additives.

Benefits

- Easy to use
- Enhanced corrosion protection (WB-655 meets Corrosion Level 0 according to DIN 51360)
- Chromate and nitrate free. WB-655 is also silicone-free.

Specification Compliance

Specification	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	✓	✓

Recommended Products

Product type	Product Name(s)
Fluorescent magnetic powders	MAGNAGLO® 14A, MAGNAGLO® MG 601
Water bath additives	MAGNAFLUX® WA-1 MAGNAFLUX® WA-2
Cleaner/remover	SPOTCHECK® SKC-S
UV(A) lamps	MAGNAFLUX® EV6000 MAGNAFLUX® UV-LED miniSpot
Centrifuge Tube for fluorescent ink (part no. 044C005)	

Typical Properties (not a specification)

Property	WB-12	WB-655
SAE sensitivity	7 - 8	7 - 8
Density	1.2 g/ml	1.1 g/ml
Settlement volume (after 1 hour)	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)
Particle size range	5 - 12 µm	3 - 5 µm
pH (2% solution)	9.0	9.1
Storage temperature	10°C to 30°C	10°C to 30°C
Usage temperature	5°C to 48°C	5°C to 55°C

Like all Magnaflux materials, WB-12 and WB-655 are closely controlled to ensure batch-to-batch consistency, optimum process control and inspection reliability.

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General Method of 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)	19.5 litres	29.5 litres
0.75 litres (750 ml)	29.25 litres	44.25 litres
1 litre (1,000 ml)	39 litres	59 litres

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 (see the 'Typical Properties' table overleaf).

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 that needs 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 (see the 'Typical Properties' table on the 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, add the following to the bath:

- **WB-12:** more WB-12 **OR** some MAGNAGLO® 14A
- **WB-655:** more WB-655 **OR** some MAGNAGLO® 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.

Availability and Part Numbers

WB-12	WB-655	
		
058C033 (x 6)	058C041 (x 6)	058C042 (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

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