CGM CIGIEMME S.p.A.

Controlli Non Distruttivi - Non Destructive Testing

Italy
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Product Code	Ref. no.
02087400	LA3173

Product Data Sheet

Ready-made suspension of fluorescent magnetic particles – LA 31-73

PRODUCT DESCRIPTION

LA 31-73 is a ready-to-use suspension of fluorescent magnetic powder in water, for wet magnetic particle testing method. The suspension contains the anti-rust, surfactant, antifoam product Ata Fluid A44 and is totally nitrite-free. Due to small size particles, this powder is very sensitive and particularly suitable for surfaces with low roughness.
LA 31-73 is a product with low sulphur and halogen content, according to standards.

COMPOSITION

Iron oxides with high magnetic permeability and small particle size fluorescent pigments.

N.B.: Like all CGM products, the LA 31-73 magnetic powder is tightly controlled to ensure batch uniformity, optimal process ascertainment and control reliability.

SPECIFICATIONS

- Excellent sensitivity.
- Excellent fluorescent contrast.
- Excellent particle mobility.
- Long-lasting particles.

PACKAGING TYPE

- 10 L cans

APPLICABILITY

Ideal for the detection of very fine and sub-surface discontinuities such as:

- Inclusions.
- Straw.
- Withdrawal cracks.
- Tears.
- Recalculations – Folding.
- Flakes.
- Welding discontinuity.
- Grinding cracks.
- Hardening cracks.
- Fatigue cracks.

In:

- Machined and semi-machined parts.

INSTRUCTIONS FOR USE

TIP: always operate according to a procedure authorised by a 3rd level in Magnetic Particle Inspection.

- Ensure that the part to be inspected is clean to avoid false indications and contamination of the magnetic suspension.
- During use, keep the magnetic suspension stirring to ensure bath uniformity.
- Apply the magnetic suspension as required depending on the method chosen.

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Continuous wet method

This is the method normally required by standards.

- Apply the magnetic suspension by spraying, immersing or dropping, as required by the inspection standard, to all surfaces of the workpiece and simultaneously apply the magnetising current.
- Stop the application of the magnetic suspension before interrupting the current flow, so as not to wash away the indications.
- Leave to drain.

Residual magnetism wet method

This method is only allowed in certain cases. Refer to the standard to be applied.

- Apply the magnetising current to the part to be inspected.
- Then (even after a certain time) apply the magnetic suspension by spraying, immersing or dropping, as required by the inspection standard.
- Leave to drain.

Inspect the part under ultra-violet light and in a darkened environment, respecting the parameters of luminous intensity and white light leakage required by the applicable standard.

With use, the dust content of the magnetic suspension tends to decrease and it is therefore necessary to check the strength of the bath daily using the sendimentation glass tube or the reference block, as stipulated in the ispection procedure. The bath must be replaced when it appears contaminated.

After the inspection and before final cleaning, it is advisable to demagnetise the inspected part to the residual magnetisation value specified in the inspection procedure. This also ensures easier removal of residual magnetic powder particles.

PROPERTIES AND PRODUCT COMPARISON

	LA 31-73	LA 150	LA 755
Colour ASTM E709 EN ISO 9934-2	Green	Green	Green
Sensitivity SAE AMS 3044	8-9	8	8
Average particle size ISO 9934-2	3 µm	12 µm	8 µm
Sedimentation ASTM E1444	0,10-0,20 ml	0,10-0,15 ml	0,10-0,20 ml
pH ISO 4316	8 – 10	8 – 10	8 – 10
Colour under UV light ASTM E709 EN ISO 9934-2	Bright yellow green	Bright yellow green	Bright yellow green

Typical values.

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RECOMMENDATIONS FOR THE USER

NDT method	Fluorescent Magnetic Particle Inspection, wet method
Shelf life	3 years at a temperature between 5°C and 45°C, in a dry place out of direct sunlight
Usage temperature	< 48°C
Preliminary cleaning	Velnet/Solnet
UV lamp	Labino
Recommended accessories according to standards ASTM E1444 ASTM E709 EN ISO 9934-2	Sedimentation glass tube – Magnetic stripe card type 2000 – Reference block type 1 (MTU) – Reference block type 2 – Flexible laminated strips – Tool Steel Ring type AS 5282 and type Ketos 01 – Octagonal plate

COMPLIANCE WITH STANDARDS

- EN ISO 9934-2
- ASME V Art. 7
- ASTM E709
- ASTM E1444
- AMS 3044
- AS 4792
- PMUC (certificate of conformity on request)

BENEFITS

- It forms clear and bright indications with minimal background fluorescence.
- It maintains the performance of the magnetic suspension over long periods of time thanks to high-quality pigments with good particle adhesion.
- As it is ready-to-use, it does not require dilution, thus avoiding the risk of dosing errors and facilitates use where water is not available.

HEALTH AND SAFETY

Read all health and safety information before using this product. This information can be found in the Safety Data Sheet, available on request.

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