



CGM CIGIEMME S.p.A.

Controlli Non Distruttivi - Non Destructive Testing

**Product Code**

Spray: 03087310

Cans: 02087300

Ref. no.

LK3173S

LK31-73

**Product Data
Sheet**

READY-MADE SUSPENSION OF FLUORESCENT MAGNETIC PARTICLES – LK 31-73

PRODUCT DESCRIPTION

LK 31-73 is a ready-to-use suspension of fluorescent magnetic powder in hydrocarbons for wet magnetic particle testing. The fluorescent pigment used enables high contrast under UV light. Due to small size particles, this powder is very sensitive and particularly suitable for surfaces with low roughness. LK 31-73 is a product with low sulphur and halogen content, according to standards.

COMPOSITION

Iron oxides with high magnetic permeability and fluorescent pigments in hydro-refined and dearomatised petroleum distillate.

N.B.: Like all CGM products, the LK 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.
- Easily dispersible.

PACKAGING TYPE

- 400 ml spray cans

- 10 L cans

APPLICABILITY

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

- Inclusions.
- Straw.
- Withdrawal cracks.
- Tears.
- Recalcifications – 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 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.
- 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 regulations.

- Then (even after a certain time) apply the magnetic suspension.
- 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 sedimentation glass tube or the reference block, as stipulated in the inspection 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.

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.

PROPERTIES AND PRODUCT COMPARISON

| | LK 35 | LK 755 | LK 31-73 |
|--|--------------------------|--------------------------|--------------------------|
| Colour | Black | Green | Green |
| Flash point ASTM D 93 | >100°C | >100°C | >100°C |
| Average particle size EN ISO 9934-2 | <1 µm | 8 µm | 3 µm |
| Density at 20° EN ISO 12185 | 0.830 g/cm ³ | 0.830 g/cm ³ | 0.830 g/cm ³ |
| Viscosity at 40°C EN ISO 3104 | 2.687 mm ² /s | 2.687 mm ² /s | 2.687 mm ² /s |
| Sedimentation ASTM E1444 | 1.2 – 2.4 ml | 0.10 – 0.20 ml | 0.10 – 0.20 ml |
| Colour under UV light | NA | Yellow – Bright green | Yellow – Bright 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 |

* Complies with AMS 2641 up to a minimum temperature of 10°C.

COMPLIANCE WITH STANDARDS

- ASME V Art. 7
- ASTM E709
- ASTM E1444
- EN ISO 9934-2
- AMS 3044
- AMS 3045
- AMS 2641
- 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.

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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