CGM CIGIEMME S.p.A.

Controlli Non Distruttivi - Non Destructive Testing

Italy ...since 1958

Product Code 01024050

Ref. no. K150

Product Data Sheet

MAGNETIC WET POWDER K 150

PRODUCT DESCRIPTION

K 150 is a fluorescent atomised magnetic powder used to prepare suspensions for wet magnetic particle testing.
K 150 powder can be suspended in a petroleum-based liquid vehicle (oil), such as Kerosenoil, or in water with the addition of a wetting agent (such as Ata Fluid A44 or Wetting Agent A38) to improve particle mobility, surface wettability and corrosion inhibition. Especially suitable for rough or unmachined or semi-machined surfaces. The powder is characterized by particularly fluorescent pigments which allow it to be used in environments not totally darkened.
K 150 is a product with low sulphur and halogen content, according to standards.

COMPOSITION

Iron oxides with high magnetic permeability and fluorescent pigments.

N.B.: As with all CGM products, the K 150 magnetic powder is tightly tested to ensure batch uniformity, optimal process verification and control reliability.

SPECIFICATIONS

- It can be suspended in oil or water.
- Excellent sensitivity.
- Good fluorescent contrast.
- Good particle mobility.
- Long-lasting particles.
- Easily dispersible.

PACKAGING TYPE

- 1 kg dosing containers

APPLICABILITY

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

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

In:

- Semi-machined parts.
- In-service inspections.
- Detection of small-medium discontinuities.

INSTRUCTIONS FOR USE

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

- Prepare the magnetic suspension in oil or water

CGM CIGIEMME S.p.A.
Via Adda, 21 - 20073 Opera (MI) Italy - Tel.: +39 02 57.600.400 - Fax: +39 02 57.603.618
Web: www.cgm-cigiemme.com - Mail: cgm@cgm-cigiemme.it
N. Registro Imprese, C.F. e P.I.: 05732470967 - N. REA: Mi -1843908 - Capitale Sociale: EURO 500.000.00 I.V.

with the addition of a wetting agent such as Ata Fluid A44 or Wetting Agent A38.

- Check, with the sedimentation glass tube, that the recommended concentration value is obtained.
- 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.

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 workpiece under ultra-violet light of the intensity required by standard/procedure.

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 apply the magnetic suspension.
- Leave to drain.
- Inspect the workpiece under ultra-violet light of the intensity required by standard/procedure.

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.

PROPERTIES AND PRODUCT COMPARISON

	K 35	K 40	K 150	K 755	K 31-73
Colour ASTM E709 EN ISO 9934-2	Black	Red	Dark green	Green	Green
Average particle size EN ISO 9934-2	1 µm	9 µm	12 µm	8 µm	3 µm
Solubility	8-10 g/L*	10 g/L*	1.2 – 1.5 g/L**	1.2% – 1.5 g/L**	1.0 – 1.2 g/L**
Colour under UV light ASTM E709 EN ISO 9934-2	NA	Bright orange	Emerald green	Yellow – Bright green	Yellow – Bright green

Typical values.

* The reported dilution guarantees that the bath complies with AMS 3042.

** The reported dilution guarantees that the bath complies with AMS 3044.

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
Suspension vehicle	Kerosenoil or water
Wetting agent for water baths	Ata Fluid A44 or Wetting Agent A38
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

- ASME V Art. 7
- ASTM E709
- ASTM E1444
- EN ISO 9934-2
- MIL-STD-271
- NAVSEA 250-1500-1
- AMS 3044
- 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.

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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