Product Code 01036410

Ref. no. PKD3173/50

Product Data Sheet

DOSE OF MAGNETIC POWDER PKD 31-73/50

PRODUCT DESCRIPTION

PKD 31-73/50 is a concentrated fluorescent magnetic powder in Kerosenoil used to prepare suspensions for wet magnetic particle testing. PKD 31-73/50 concentrate must be suspended in a liquid vehicle based on petroleum distillates, such as Kerosenoil. Due to small size particles, this powder is very sensitive and particularly suitable for surfaces with low roughness.
PKD 31-73/50 is a product with low sulphur and halogen content, according to standards.

COMPOSITION

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

N.B.: As with all CGM products, the PKD 31-73/50 magnetic powder is tightly tested to ensure batch uniformity, optimal process verification and control reliability.

SPECIFICATIONS

- It must be suspended in oil (Kerosenoil).
- Virtually odourless.
- Extra sensitivity.
- Excellent fluorescent contrast.
- Excellent particle mobility.
- Long-lasting particles.
- Easily dispersible.

PACKAGING TYPE

- 0.5 L container

APPLICABILITY

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

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

In:

- Machined and semi-machined parts.
- In-service inspection.
- Detection of small discontinuities.
- Very critical applications.
- Aeronautical applications.

INSTRUCTIONS FOR USE

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

- Dilute the magnetic powder concentrate in the proportion of 0.5 dose in 50 L of kerosenoil and check, with the sedimentation glass tube, that

it has the recommended concentration value.
- 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 regulations.
- 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 (even after a certain time) apply the magnetic suspension.
- Leave to drain.
- Inspect the workpiece under ultra-violet light of the intensity required by standard/procedure.

With use, the powder content of the magnetic suspension tends to decrease and it is therefore necessary to check the strength of the bath daily using the centrifuge tube or the reference block, as stipulated in the control 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

	PKD 35/50	PKD 755/50	PKD 31-73/50
Colour ASTM E709 EN ISO 9934-2	Black	Green	Green
Flash point ASTM D93	>100°C	>100°C	>100°C
Average particle size EN ISO 9934-2	1 µm	8 µm	3 µm
Sedimentation ASTM E1444	1.2 – 2.4 ml	0.10 – 0.20 ml	0.10 – 0.20 ml
Solubility	1 L in 50 L of kerosenoil	0.5 L in 50 L of kerosenoil	0.5 L in 50 L of kerosenoil
Colour under UV light ASTM E709 EN ISO 9934-2	NA	Bright yellow-green	Bright yellow-green

Typical values.

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 K 41 or K 42
Preliminary cleaning	Velnet/Solnet
UV lamp	Labino
Recommended accessories according to regulations 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
- 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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