

LUMOR® J 40(W)

WATER-BASED FLUORESCENT MAGNETIC INK

1 Description

Lumor® J 40(W) is a water suspendible, high sensitive, fluorescent magnetic ink concentrate. Correct dilution of Lumor® J 40(W) with water provides a fluorescent magnetic ink which is ideal for the inspection of ferromagnetic materials, structures and components by the magnetic particle inspection method.

Lumor® J 40(W) incorporates a water conditioning system which suspends the particles, enables the product to wet the surface and protects the tested material against corrosion.

Lumor® J 40(W) is used extensively in the automotive and oil & gas industries for the detection of grinding or heat treatment cracks as well as forging bursts, laps, porosity, inclusions and other discontinuities.

Lumor® J 40(W) is available as bulk material, in particular as a 500 ml bottle to be diluted in 19.5 L of water in order to match the typical capacity of most magnetic bench units.

Conformances

- ✓ ASME Boiler & Vessel Code, Section V Article 7
- ✓ ASTM E1444
- ✓ SAE AMS 3044

Ask your Chemetall representative for a complete list of approvals

2 Physical and chemical properties

Property	Typical Value	Unit
Appearance	Suspension, brown powder	-
Settlement	0.1 – 0.3 (prepared bath)	mL-
pH	Approx. 9.5 (undiluted)	-
Particle size (mean)	Approx. 5	µm

These are typical values only and do not constitute a specification.

3 Preparation

A mixture of 1 volume of Lumor® J 40(W) with 39 volumes of water provides a magnetic ink which meets the requirements of the appropriate specifications. When preparing magnetic inks from liquid concentrates, always shake the container vigorously before pouring into the water and rinse the container thoroughly to ensure that all the contents are used.

Lumor® J 40(W) may be used at different dilutions, but this will directly affect the level of magnetic particle and corrosion inhibitor in the final mix.

4 Method of Use

The working strength suspension of magnetic ink must be agitated before and during use to ensure that the magnetic particles are maintained in suspension. The prepared ink can be applied by spray or flooding and, when residual magnetic field method is used, by immersion. When the continuous magnetization method is used, the application of ink must be stopped before the magnetizing current is switched off.

Indications will appear brilliant yellow-green when viewed under UVA (black light) of peak wavelength of 365 nm. Individual specifications may vary, but normal minimum viewing intensity is 1200 $\mu\text{W}/\text{cm}^2$ at a distance of 38–46 cm (15-18 inches) from the component surface.

Note: Specification may vary. Check concentration and UVA/ambient light as per the applicable specification.

5 Effects on material

The diluted Lumor® J 40(W) is inhibited against corrosion on steel. When used in the recommended manner, no significant corrosion is likely to be encountered on the tested parts.

Equipment/tanks should be constructed of stainless steel.

6 Storage

Store in a cool dry place; avoid direct exposure to sunlight. Shelf life of Lumor® J 40(W) is 36 months.

7 Labor and environmental protection

Before operating the process described it is important that this complete document, together with any relevant Safety Data Sheets, be read and understood.

All local and national regulations on the transport, storage, use and waste treatment of chemicals in concentrated or diluted form and as working solutions must be obeyed.

8 General information

Chemetall supplies a wide range of chemical products and associated equipment for cleaning, descaling, paint and carbon removal, metal working and protection and non-destructive testing. Sales Executives are available to advise on specific problems and applications.

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