

Color contrast magnetic ink

1 General Description

Supramor® 4 Black is a ready-to-use color contrast magnetic ink ideal for the inspection of ferromagnetic materials, structures and components by the magnetic particle inspection method. A typical application is the inspection of welds, pressure vessels and pipeline in the oil, gas and petrochemical industries as well as power plants.

Supramor® 4 Black consist of very finely divided black magnetic particles suspended in high flash point odourless kerosene designed to provide good particle mobility. The black particles have been selected for their high magnetic response, low coercivity (to avoid coagulation) and prolonged operational life.

Supramor® 4 Black and MPI Diluent HF use a hydrocarbon corresponding to the AMS 2641, Type 1 Magnetic Particle Inspection Vehicle with a flash point exceeding 93°C / 200°F.

Supramor® 4 Black is available as bulk material and as aerosol. It offers optimal performances when used together with the WCP 712 or 722 (peelable) contrast paint and their remover S80.

Conformances

✓ AREVA	TLV 9612 01
✓ ASME	Boiler & Vessel Code, Section V, Article 7
✓ ASTM	E-1444
✓ CEN	ISO 9934-2
✓ SAE	AMS 3043 & 2641 Type 1

Ask your Chemetall representative for a complete list of approvals

2 Physical and Chemical Properties

Property	Unit	Typical Value	Test Method
Appearance	-	suspension of black powder	-
Settlement	%	1.5 – 2.4	AMS 3041
Flash point	°C / °F	>93 / >200	ASTM D93
Density	g/cm³	0.82 at 20°C / 68°F	volumetric
Viscosity	mm²/s	2.2 at 40°C / 104°F	

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

3 Application

Supramor® 4 Black is used for the detection of grinding or heat treatment cracks as well as forging bursts, laps, porosity, inclusions and other discontinuities in Ferromagnetic materials.

Before pouring bulk Supramor® 4 Black, always shake the container vigorously in order to homogenize the powder concentration. Before use, the suspension of Supramor® 4 Black must be agitated to ensure that the magnetic particles are maintained in suspension.

3.1 Method of use

Care should be taken that the area to be inspected is clean and free from oil, grease, scale or rust or any contaminant which could mask any indications. Surface temperature should be between 0 and 75°C (30-165°F).

Components are magnetized and Supramor® 4 Black is applied to the test area, normally by spraying immediately prior to and during magnetization. Application of Supramor® 4 Black should cease before the magnetization is switched off. Defects will show up as well defined black indications and inspection should take place in good white light of at least 500 Lux (the controlling specification must be referred to for levels of ambient light acceptable for inspection).

3.2 White contrast paint

It is not practical to use Supramor® 4 Black on dark substrates as it would be difficult for the inspector to identify indications against the dark background. For this reason, the white contrast paint WCP 712 (or 722, peelable) is frequently used to provide a contrasting background against the black indications, thereby enabling the inspector see and interpret indications more easily (alternatively, fluorescent fluids such as the Lumor® inks may be used if a UV light is available). WCP712 can then be left on the surface or removed with the remover S80 (WCP 722 can also be peeled off).

4 Effects on materials

When Supramor® 4 Black is used in the prescribed manner, no significant corrosion will occur on ferrous materials. Equipment/tanks should be constructed of plastic or stainless steel.

5 Storage

Store in a cool place, protect from freezing conditions.

6 Safety guidance

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

7 Waste release

Any release shall respect all the applicable national and local regulation.

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 advice on specific problems and applications.

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