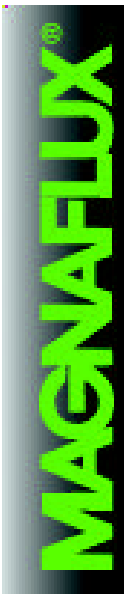


PRODUCT DATA SHEET



14A, 14AM Magnaglo Wet Method Fluorescent Magnetic Material

Effective November 4, 1997

Supersedes August 14, 1995

General Description

14A is a dry, free flowing, brown magnetic powder which fluoresces bright yellow-green under blacklight (wavelength of 365 nanometers). 14A is intended for use in high sensitivity wet method magnetic particle inspection. It is used to locate fine surface and slightly subsurface discontinuities such as: inclusions, seams, shrink cracks, tears, laps, flakes, welding defects, grinding cracks, quenching cracks, and fatigue cracks.

14A may be suspended in either a petroleum based vehicle (oil) such as Magnaflux/Magnaglo Carrier II, or in water. When water is used as a vehicle, conditioning agents such as WA-2B, or WA-4 are required. The conditioning agents improve particle suspendibility and mobility, part surface wetting, and nominal corrosion inhibition.

14A's fluorescent color contrasts sharply with the purple background of clean metal surfaces when viewed under black light in a darkened area.

The recommended use concentration of 14A is 1/6 oz. per gallon of vehicle (1.25 g/l).

Composition

14A is composed of compounded fluorescent pigment and magnetic powder.

14AM is a prepared bath of 14A in Carrier II.

Safety

1. 14A and 14AM are intended for industrial use by qualified personnel only.
2. Do not smoke or eat while using 14A or 14AM; wash hands thoroughly after use.
3. Wear protective hand wear to protect hands from drying out from contact with vehicle.
4. Store 14A or 14AM in closed containers in a dry location away from heat sources.
5. Material Safety Data Sheets available upon request.

Typical Properties (Not a Specification)

Color under white light:	Brown
Color under black light:	Yellow-green fluorescence
Mean Particle Size:	6 microns
SAE sensitivity:	8-9
Temperature limit:	120°F Maximum

Like all MAGNAFLUX materials, 14A is closely controlled to provide unique batch to batch consistency and uniformity to assure optimum process control and inspection reliability. Batch certification available upon request.

Bath Preparation

A measuring scoop is included with each 14A container. The scoop measures enough 14A particles for one gallon of Carrier II or water.

When Carrier II is used as the vehicle, the 14A is weighed out, 1/6 oz. per gallon of Carrier II and added to the Carrier II. The bath must be agitated for several minutes to distribute the particles uniformly. Once thoroughly mixed, the bath should be checked for proper concentration and adjusted if necessary.

When water is used as the vehicle, the conditioning agent is measured out and added to the agitated bath and allowed to mix for several minutes. Once mixed, the 14A is weighed out, 1/6 oz. per gallon vehicle, and added to the bath and again allowed to be mixed uniformly. The bath is tested for proper concentration and adjusted if necessary.

Recommended Conditioner Concentration

WA-2B	1-1/3 oz./gal. (10 g/liter)
WA-4	1% by volume

Concentration Control

The bath strength should be maintained constant at all times to insure consistent results. The concentration should be checked at make-up time and at least once each day. The most widely used method of control is by gravity settling in a graduated ASTM pear shaped centrifuge tube. MAGNAFLUX P/N 8493 is recommended for 14A with a 1.0 ml stem in 0.05 increments.

The tube is filled to the 100 ml line with well mixed bath. The tube is placed in the stand in a vibration-free location for 30 minutes for water (60 minutes for Carrier II). After 30 minutes for water, (60 minutes for Carrier II) the settling volume is taken. The settling volume indicates the amount of magnetic particles present in the bath.

	Settling Volume - Oil	Settling Volume - Water
14A Concentration - 1/6 oz./gal. (1.25 g/l)	0.15 - 0.25	0.18 - 0.28
14AM aerosol (60 minutes)	0.15 - 0.40 ml	—

Application

Parts should be cleaned prior to testing to reduce bath contamination and to insure a more desirable test surface. The bath must be continuously agitated when in use to insure uniformity, as particles will settle out of suspension on standing.

Using the wet continuous method, the bath is applied to all surfaces of the part. The instant the bath stream is removed from the part the magnetizing current is applied. The indications will be formed in the bath but background will be reduced during the drain. This method is generally less sensitive than the continuous method. The bath is also more susceptible to rapid particle depletion and contamination using this method.

Post Inspection Cleaning

The parts must be properly demagnetized before cleaning for easy particle removal.

Specification Compliance

ASTM E 1444	ASME B & PV Code, Sec. V
NAVSEA 250-1500-1 (14A)	ASTM E-709 (E-138)
MIL-STD-271 (14A)	AMS-3044 (14A)
Cummins IS-16048-13	AMS-3045 (14AM)
MIL-STD-2132	AMS-3046 (14AM aerosol package)
DOD-F-87935 (14AM)	McDonnell Douglas PS 21201
	British Std. B.S. 4069

Packaging

<u>14A</u>	<u>14AM</u>
1 lb. plastic jar	5 gal. pail
10 lb. plastic pail	Aerosol package
20 lb. plastic pail	