MAGNAFLUX

PRODUCT DATA SHEET

MAGNAGLO® 14AM, 14A AQUA-GLO, 14A REDI-BATH and 20B FLUORESCENT MAGNETIC PARTICLE PREPARED BATH

GENERAL DESCRIPTION

Magnaglo® 14AM, 14A Aqua-Glo, 14A Redi-Bath and 20B each contain the Magnaflux® 14A powder as a main ingredient.

APPLICATIONS

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.

COMPOSITION

Magnaglo® 14AM is a prepared, ready to use bath composed of 14A fluorescent powder and Carrier II (Oil Petroleum Vehicle).

Magnaglo® 14A Aqua-Glo is a prepared liquid solution composed of 14A fluorescent powder, water, conditioning agents and carbon dioxide propellant. This product is designed to offer the benefits of water and the convenience of an aerosol and may be used right out of the aerosol can.

Magnaglo® 14A Redi-Bath is a prepared liquid concentrate composed of 14A fluorescent powder, wetting agents, antifoaming agents and long lasting rust inhibitors. This product is packaged as a liquid concentrate to be added to a water bath. The graduated plastic bottle holds 800 ml (27 fl. oz.), enough to make 10 gallons of water bath. The contents of the one gallon container make 47 gallons of water bath.

Magnaglo® 20B is a dry mix composed of 14A fluorescent powder and WA-2B water conditioner (contains wetting agents and corrosion inhibitors) in a dry mix formula. This product is added to a water bath.

TYPICAL PROPERTIES (Not a specification)

Typical Properties	14AM	14A Aqua-Glo	14A Redi-Bath	20B
Color Under White Light	Brown	Brown	Brown	Brown
Color Under Black Light	Yellow-Green	Yellow-Green	Yellow-Green	Yellow-Green
Mean Particle Size	6 Microns	6 Microns	6 Microns	6 Microns
SAE Relative Sensitivity	8 - 9	7	8	7
Temperature Limit[1]	55 - 120°F	32 - 120°F	32 -120°F	32-120°F

[1]Temperature limits are not intended to imply that the material will not form magnetic particle indications above the specified temperatures. However, particles at elevated temperatures for a period of time may be altered in color, sintered together or emit smoke. Particles heated to +900ºF or passed through a flame will smolder or spark.

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BATH PREPARATION

14AM (oil based) is ready to use from the container.

14A Aqua-Glo (water based) is ready to use from the container.

14A Redi-Bath: Caution: Do not mix this concentrate into carrier oil. *Use in Water Bath only!* When mixed according to instructions, the bath settling volume after 30 minutes is 0.15 to 0.25 ml. Shake the container well to suspend the settled 14A Magnaglo® particles. The bottle is purposely not quite filled when new, which make it easier and faster to attain uniform distribution of particles in the concentrate. To prepare 10 gallons of 14A Redi- Bath, simply pour the entire contents of the 27 oz. bottle into 10 gallons (38 L) of water while stirring or recirculating. The one gallon container of 14A Redi-Bath makes 47 gallons (178 L) of water bath. Rinse container with a little water and add to the bath. To prepare partial baths, refer to graduation marks on the side of containers. The recommended unit dose for one gallon of water is 80 ml. Mix continuously or allow the prepared bath to re-circulate for 5 minutes prior to use. Make sure that the suspension passes through the application nozzle in the final minute. Perform particle settling test.

20B: A measuring scoop is included with each 20B container. The scoop measures enough 20B particles for one gallon of water. Weigh out (1.5 oz. 20B /gallon of water), or measure out 20B using scoop, and add to water with agitation. Add directly over sump on Magnaflux® Magnetic Particle units for rapid dispersion. The use of warm water (100°F) will increase the rate of dispersion. Allow the bath to agitate for 30 minutes before testing concentration.

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METHOD OF APPLICATION

***14AM and 14A Aqua-Glo*:** Shake can well to suspend the particles. If using bulk 14AM, shake or stir material to ensure uniform particle dispersion and pour into tank or vessel. Spray or pour onto properly magnetized test part, making sure that the entire surface to be inspected is covered. Inspect part. Indications will form immediately and appear as fluorescent green lines under a UV Black Light of 365 nm.

Note: Exposing 14AM and 14A Aqua-Glo aerosol cans to a strong magnetic field may adversely affect particle redistribution. 14AM and 14A Aqua-Glo aerosol cans should always be stored away from magnetizing equipment. Age and/or exposure to elevated temperatures can adversely affect the particle dispersion properties of 14AM and 14A Aqua-Glo in aerosol cans. As such, we recommend verifying proper concentration of the product by performing a sensitivity check using a QQI or other known test standard prior to inspection.

***14A Redi-Bath and 20B*:** Parts should be cleaned prior to testing to reduce bath contamination and to ensure a more desirable test surface. The bath must be continuously agitated when in use to ensure 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 during the current shot. If the bath is applied after the magnetizing shot, the force of the bath application may wash away indications.

Using the wet residual method, the pre-magnetized part (must be of high retentivity) is immersed in the bath and then removed and allowed to drain. 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 to ensure ease of particle removal.

SPECIFICATION COMPLIANCE

14AM: DOD-F-87935, AMS-3045, AMS-3046 (aerosol package only), ASTM E 1444, Cummins IS-16048-13, MIL-STD-2132, ASTM E709(E-138), Boeing PS 21201, British Std. B.S. 4069.

14A Aqua-Glo: ASTM E1444, ASME, ASTM E709, NAVSEA 250-1500-1, MIL-STD-2132.

14A Redi-Bath: NAVSEA 250-1500-1, MIL-STD-271, MIL-STD-2132, ASME B & PV Code, Section V, ASTM E709, ASTM E1444.

20B: ASTM E 1444, ASME B & PV Code, Sec. V, NAVSEA 250-1500-1, ASTM E-709 (E-138), MIL-STD-271, AMS-3044, MIL-STD-2132.

PACKAGING

14AM Prepared Bath: 16 fl. oz. aerosols (case of 12), 5 gal. pail.

14A Aqua-Glo Prepared Bath: 265 gram aerosols (case of 12).

14A Redi Bath: 27 fl. oz. container (case of 6), 1 gal container.

20B: 1 lb. container (case of 6), 15 lb. container, 30 lb. container.