

MAGNAGLO®

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

General Description:

14AM, 14A Aqua-Glo, 14A Redi-Bath and 20B each contain the MAGNAFLUX 14A powder as its main ingredient.

Composition:

| | |
|----------------------|---|
| 14AM | A prepared bath of 14A fluorescent powder and Carrier II (Oil Petroleum Vehicle). This product is ready to be used. |
| 14A Aqua-Glo | A prepared liquid solution 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. This product may be used right out of the aerosol can. |
| 14A Redi-Bath | A prepared <i>liquid</i> concentrate of 14A fluorescent powder, wetting agents, anti-foaming agents and long lasting rust inhibitors. This product is packaged as a liquid concentrate. The graduated plastic bottle holds 800 mL (27 fl. oz.), enough to make up 10 gallons of water bath. The contents of the one gallon container make up 47 gallons of water bath. This product is added directly to water. |
| 20B | A dry mix 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. |

Application:

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.

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A Division of Illinois Tool Works Inc.
Product Data Sheet

14AM, 14A Redi-Bath, 14A Aqua-Glo and 20B

revised 6/17/2004

PRODUCT DATA SHEET

MAGNAGLO®

Typical Properties

| 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 sensitivity | 8-9 | 7 | 8 | 7 |
| Settling Volume | 0.15-0.40 mL | 0.15-0.30 mL | 0.15 to 0.25 mL | 0.20 to 0.35 mL |
| Temperature Limit | 120°F Maximum | 120°F Maximum | 120° F Maximum | 120° F Maximum |

Bath Preparation:

14AM (oil based) & 14A Aqua-Glo (water based) – are 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 makes it easier and faster to attain uniform distribution of particles in the concentrate. To prepare a 10 gallon Magnaglo 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 will make up 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 as well. Allow the bath to agitate for 30 minutes before testing concentration.

Method of Application:

- **14AM:**
 1. Shake the can well to suspend the particles.
 2. Spray 14AM on properly magnetized test part; ensuring that entire surface to be inspected is covered.
 3. Inspect part. Indications will form immediately, and appear as fluorescent green lines under black light.

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- **14A Aqua-Glo**

1. Shake the can well to suspend the particles.
2. Spray 14A Aqua-Glo on properly magnetized test part; ensuring that entire surface to be inspected is covered.
3. Inspect part. Indications will form immediately, and appear as fluorescent green lines under black light.

- **14A Redi-Bath:** 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.

- **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 insure ease of particle removal.

The logo for MAGNAGLO, featuring the word "MAGNAGLO" in white, bold, sans-serif capital letters with a registered trademark symbol (®) to the upper right, set against a blue arrow-shaped background pointing to the left.

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
- **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

Container Size:

- **14AM Prepared Bath**
Case of 16 Ounce Aerosols; 5 Gallon
- **14A Aqua-Glo Prepared Bath**
Case of 12 – 265 gram net weight Aerosols
- **14A Redi-Bath**
6 -27 Ounce Containers; 1 gallon containers
- **20B:**
Six- One lb. Containers; 15 lb. Container; 30 lb. Container

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