14A Aqua-Glo™

Water-Based Fluorescent Magnetic Particle Suspension

14A Aqua-Glo is a highly sensitive water-based magnetic particle suspension for locating very fine discontinuities in critical applications and difficult to reach areas. 14A Aqua-Glo offers the benefits of a water bath and the convenience of portable packaging. It is ideal for spot inspections and difficult to process situations where bulk processing is impractical.

This water-based, non-flammable formula contains high-sensitivity 14A fluorescent magnetic particles and is primarily used for field testing with a portable magnetic field generator. 14A Aqua-Glo is ready-to-use, and creates a bright yellow-green fluorescent indication when viewed with ultraviolet light. The ultra-sensitive particles provide clear, bright, fluorescent green indications under ultra-violet light for unbeatable inspection quality and accuracy.

14A Aqua-Glo is applied to magnetized parts prior to inspection. It is used to detect cracks and seams, as well as inclusions, laps, tears and flakes. 14A Aqua-Glo can detect flaws that are open to the surface of the part, or slightly sub-surface. Parts tested can be forgings, welds, castings, and stamped or machined ferromagnetic materials, such as steel and other alloys of iron, nickel, and cobalt.

BENEFITS

Increases indication detection with 14A particles

- Find smaller, finer indications in critical applications using the highly sensitive, strong ferromagnetic 14A fluorescent particles
- Optimized particle size and shape help particles move freely to stick to a wide variety of discontinuities with less particle clumping

Minimizes inspection time

- Clear, bright fluorescent indications form quickly due to the highly fluorescent, highly mobile 14A magnetic particles
- Minimal background fluorescence help indications stand out more so inspectors need to spend less time examining each part

Improve inspection consistency and reliability

- Maintain magnetic particle system performance over greater periods of time thanks to the highly-durable, easily-dispersed 14A particles
- Reduced particle clumping helps maintain particle concentration in the suspension bath for dependable inspections

Convenient to use

- Fast, reliable solution with immediately ready-to-use mixture of 14A magnetic particles, water conditioners and corrosion preventatives – no measuring or dilution required
- Aerosol format provides portable, convenient solution that can be used in a variety of environments and application

FEATURES

- Clear, bright indications under ultra-violet light
- Ready-to-use
- High sensitivity
- Easy post-testing clean up
- Excellent fluorescent contrast for quick identification
- Excellent particle mobility
- Good corrosion protection
- Good dispersion stability
- Great concentration consistency
- Superior surface wetting
- Even surface coverage for higher probability of detection

SPECIFICATION COMPLIANCE

- AMS 3044
- ASTM E709
- ASTM E1444
- ASME
- MIL-STD-2132
- MIL-STD-271
- NAVSEA 250-1500-1
- NAVSEA T9074-AS-GIB-010/271

APPLICATIONS

Defect location: Surface and slightly subsurface

Ideal for:

- Field testing
- Difficult to reach areas
- Machined parts
- Smooth surface finish
- Critical applications
- Spot inspections
- In-service inspections

Defect examples:

- Inclusions
- Seams
- Shrink cracks
- Tears
- Laps
- Flakes
- Welding defects
- Grinding cracks
- Quenching cracks
- Fatigue cracks

PRODUCT PROPERTIES

Appearance	Liquid and fine particle solution
Color in Visible Light	Brown
Color in UV Light	Fluorescent yellow-green
Odor	Subtle amine
Particle Size Range*	5 - 12 µm
SAE Sensitivity**	8 - 9

* As determined by industry-typical method for measuring particle size

** Representative of the number of indications on a tool steel ring as defined in ASTM E1444.

USE RECOMMENDATIONS

NDT Method	Magnetic Particle Testing, Fluorescent, Wet Method
Suspension Vehicle	Water
Required Equipment	Magnetizing device, UV light source
Usage Temperature†	42 to 120°F / 6 to 48°C
Storage Temperature	50 to 86°F / 10 to 30°C
Settling Volume	0.10 – 0.40 mL

† Particle integrity and mobility may decline beyond these temperature limits.

INSTRUCTIONS FOR USE

Use 14A Aqua-Glo with appropriate magnetization procedure and equipment. For best results, all components, parts, or areas to be tested should be clean and dry prior to testing to provide an optimal test surface and reduce particle suspension contamination. Aerosol can should be shaken sufficiently to ensure uniformity of concentration prior to applying material to the part.

The suspension can be applied by gently spraying or flooding the area to be tested using the continuous or residual application method. Inspect under ultra-violet black light. If specifications require, particle concentration can be checked using a settling volume test with a Magnaflux centrifuge tube 8493 with 100 mL capacity, stem graduated from 0 to 1 mL in 0.05 mL increments.

REMOVAL

All components, parts, or inspection areas must be properly demagnetized before cleaning to ensure easy particle removal. Cleaned parts may be treated with a temporary film protective coating if longer corrosion protection is required.

STORAGE

Store in a well-ventilated area away from magnetizing equipment and heat sources. Protect from sunlight. Product age, exposure to elevated temperatures, and/or exposure to a strong magnetic field may adversely affect particle redistribution. Refer to Safety Data Sheet for additional storage instructions.

PACKAGING

Aerosol can, case of 12 01-1725-78

HEALTH AND SAFETY

Review all relevant health and safety information before using this product. For complete health and safety information, refer to the product Safety Data Sheet, which is available at www.magnaflux.com.