

20B

Fluorescent Magnetic Particle Premix

20B is a highly-sensitive magnetic particle premix powder for locating fine discontinuities in high volume applications, such as forging, casting, stamping and welding.

Combining Magnaflux's best-in-industry 14A magnetic particles, corrosion inhibitors and wetting agents, 20B is an easy-to-use premix for making magnetic particle water bath. The ultra-sensitive 14A particles provide clear, bright, fluorescent green indications under ultra-violet black light for unbeatable inspection quality and accuracy, and the water conditioners provide corrosion protection and complete surface wetting.

20B is a great choice for baths which need to be changed out frequently due to drag-in or heavy-use and is ideal for in-process testing to detect cracks, seams, inclusions, laps, tears and flakes.

20B meets all major industry and NDT specification requirements, including automotive, API and ASTM standards.



BENEFITS

Increases indication detection with 14A particles

- Find smaller, finer indications in critical applications using the highly sensitive, strong ferromagnetic 14A 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 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 particle bath prep with the easy-to-use premix of 14A magnetic particles, water conditioners and corrosion preventatives
- Designed to mix with water in low concentrations for an ideal balance of performance and economy

FEATURES

- Premix powder for quick, reliable bath prep
- High sensitivity
- Excellent fluorescent contrast
- Excellent particle mobility
- Optimized particle size and shape distribution
- Durable particles
- Easily dispersed
- Great concentration consistency
- Corrosion protection
- Non-foaming
- Easy post-testing clean up
- Good dispersion stability
- Good surface wetting

- Steel
- Iron alloys
- Nickel alloys

Defect examples:

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

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:

- Detecting fine discontinuities
- Smooth surface finish
- High volume testing
- After secondary processing
- In-service inspections
- Castings
- Forging
- Stamped parts
- Ferromagnetic metals

PRODUCT PROPERTIES

Appearance	Dry powder
Color in Visible Light	Brown
Color in UV Light	Fluorescent yellow-green
Odor	Mild
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.

PREPARATION INSTRUCTIONS

Mix 20B with water for use. Fill tank or container with water. Measure or weigh out 20B, add a small amount of water and mix to form a thick paste. Add the paste to water in the tank or container. Mix for a minimum of 15 minutes, until the particles are completely and evenly dispersed in the suspension. Check concentration before use. Using warm water (100°F / 38°C) to prepare the suspension will help the 20B mix faster.

Do not mix 20B with petroleum distillate (oil).

A measuring scoop is included with container of 20B. The scoop measures enough 20B powder for one gallon of water.

Water	20B
1 gallon	1.5 ounces
1 liter	11.2 grams

INSTRUCTIONS FOR USE

Use 20B 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. Particle suspension must be properly mixed and continuously agitated when in use to ensure uniformity and concentration.

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. Check particle concentration before use.

Maintenance Recommendations

Magnetic particle suspensions need to be properly maintained to provide consistent results. Suspension concentration and contamination should be monitored at least once a day, or according to applicable specifications. Contaminated suspensions, or those in use for an extended length of time, should be replaced. Properly cleaning all components,

parts, or inspection areas before testing helps to significantly reduce particle suspension contamination.

Particle concentration should be determined after initial bath preparation and at least once a day, or according to applicable specifications, to maintain the proper level of particles in the suspension. The most widely used method of control is by settling volume measurement in a graduated ASTM pear-shaped centrifuge tube. For testing 20B, Magnaflux centrifuge tube 8493 is recommended: 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. Product age, exposure to elevated temperatures, and/or exposure to a strong magnetic field may adversely affect particle redistribution.

Protect from sunlight. 20B is a hygroscopic (moisture absorbing) powder so storage containers should be tightly sealed when not in use. Cool, dry storage location is preferred. Refer to Safety Data Sheet for additional storage instructions.

PACKAGING

1 lb / 453 g jar (case of 6)	01-0179-71
15 lb / 6.8 kg pail	01-0179-70
30 lb / 13.6 kg pail	01-0179-84

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.