Fluorescent Powders for Wet Magnetic Particle Testing

Green Dust 88k :

This is free flowing green powder giving very bright Yellow Green Fluorescence .under Black Light of 3650 A wavelength. This product has high sensitivity coupled with excellent brightness and very fine particle size. The recommended concentration is 0.75 gm per ltr. of carrier liquid. This product can be directly suspended in petroleum oil carrier and When water is used as carrier, the water conditioners (Automag WA-29) need to be added @10 gm per liter. Water conditioners will help to improve particle mobility and suspension properties & also prevent general corrosion. Supplied in 1 Kg. 5Kg containers and in 15 gm convenient Pouch suitable for 20 ltr. of Ready Bath

Green Dust 88W

This is free flowing dry Green powder suitable to use with water as carrier Liquid and gives extremely bright Yellow Green Fluorescence under Black Light of 3650 A Wavelength. The wetting agents are pre blended and no additional water conditioners are required to be used with Green Dust 88W. The wetting agents will give good mobility & suspension properties to the particles in the Bath. Supplied in 1 kg, 5 Kg. containers & in 20 gm convenient Pouch suitable for 20 ltrs .of Ready Bath.

Automag 88 WG

This is a free flowing Green powder having bright Yellow Green Fluorescence under Black Light (3650 A Wavelength) and is suitable to use with water as carrier liquid. The composition is blend of 0.75 gm of Green Dust 88K and 10 gm of Water Conditioner Automag WA-29WG. The recommended addition is 10.75 gm per ltr. Of water. The water conditioner present help the particle mobility on the job and also improves suspension and give temporary protection from corrosion . Supplied in 1 Kg. Container

Typical Properties

Colour In Day Light ⟶ **Green**

Colour Under Black Light ⟶ **Bright Yellow Green**

Avg. Particle Size ⟶ **6 Micron**

SAE Sensitivity ⟶ **7 – 9**

Bath Preparation

Oil Bath :

It is recommended to add 0.75 gm per ltr. of Green Dust 88K to Carrier liquid i.e. petroleum Oil. Green Dust 88K Powder is weighed according to above recommended concentration & added to carrier liquid. Proper mixing is done in order to get the powder uniformly mixed with the carrier Liquid. After proper mixing, the concentration of bath is checked in centrifuge Tube which should be in the recommended range as per specification to be used and to be adjusted , if necessary. Centrifuge Tube is kept on vibration free stand for a period of 60 minutes in case of oil carrier and the volume of settlement is measured.

Water Bath :

1. If Green Dust 88K is to be used with water as carrier liquid then 10 gm per ltr. Of water conditioner (Automag WA-29) is first added to water and allowed to mix thoroughly by agitation. Green Dust 88k is then added @ 0.75 gm per litre of Water and mixed thoroughly.. Proper mixing is done in order to get the powder uniformly mixed with the carrier Liquid. After proper mixing, the concentration of bath is checked in centrifuge Tube by keeping the Centrifuge Tube on vibration free stand for a period of 30 minutes.

2. If Green Dust 88W is to be used with water, it is recommended that 1 gm to 1.5 gm powder is added to 1ltr. Of water and the allowed to get mixed for about 30 minutes. No separate addition of Water conditioner is required. The concentration is checked with Centrifuge tube in the same manner as mentioned above in case of Green Dust 88K when used with water

3. In case of Automag 88WG, 10.75 gm of powder is added to 1 ltr. Of Water and allowed to get mixed at least for a period of 30 minutes prior to used with good agitation

Note : Above recommended concentrations per litre of carrier liquid is expected to give 0.12 ml to 0.15 ml. concentration(Settled Volume) in Centrifuge Tube

Uses

Green Dust 88K and Automag 88WG are used to locate fine surface & immediate sub surface defects such as inclusions, Tears, Laps, Seams, Welding Defects and Cracks due to shrinkage, grinding, fatigue, Heat Treatment Etc

Typical Application of Green Dust 88W is inspection of large Castings, Billets, Tubes, Rounds of Steel for detection of surface & immediate sub surface defects. pH of this liquid is neutral

.

Application Method

1. The job is thoroughly cleaned in order to avoid subsequent contamination in the bath. Better surface will give better mobility to the particle & less of background effect which will enhance the visibility of defect and in turn the sensitivity.
2. It is always recommended to apply the liquid when the current is on. This will help the particles to move and settle on the defects, if present. Bath should never be applied when current is withdrawn particularly to the component which has very low retentively.
3. In case of component which can retain magnetism even after withdrawal of current, the residual magnetism can be used for Magnetic Particle Testing. In such case, the application of bath may be done after the withdrawal of current
4. Part under test must be demagnetized properly after the testing to carry out further operation or to put the job to use with intended efficiency.

Specification Compliance

Above products conform to the requirements of ASTM E-709, ASME Sec. V, Navsea 250-1500-1, AMS 3044, MIL-STD-271, MIL-STD-2132, BS-4069 / 6072, Cummins IS 16048-13, Boieng PS 21201, IS -6410, RDSO M&C/NDT/8/91/APPD for Magnetic Particle Testing

.