

## MAGNAVIS<sup>®</sup> 7C BLACK VISIBLE WET METHOD DRY POWDER CONCENTRATE

### GENERAL DESCRIPTION

Magnavis<sup>®</sup> 7C is a black dry powder concentrate ideally suited for use on light colored surfaces for optimum color contrast. 7C may be suspended in either Carrier II Oil Vehicle or in water. When water is used as a vehicle, conditioning agents such as WA-2B (1-1/3 oz./gal.) or WC-1 (2% by volume) are required. The conditioning agents improve particle suspendibility and mobility as well as part surface wetting and nominal corrosion inhibition.

Magnavis<sup>®</sup> 7C Black powder is generally used at a concentration of 1-1/4 oz./gal. (9.4 g/l).

### APPLICATIONS

Magnavis<sup>®</sup> wet method magnetic particle inspection materials are used to locate surface and slightly subsurface discontinuities in ferrous structures. Wet method materials are typically used to find inclusions, seams, shrink cracks, tears, laps, flakes, welding defects, grinding cracks, quenching cracks and fatigue cracks.

### COMPOSITION

Magnavis<sup>®</sup> 7C is composed of compounded magnetic powder.

### TYPICAL PROPERTIES (Not a specification)

Typical Properties	7C Black
Color	Black
Particle Size	< 20 Microns
SAE Sensitivity	6 Minimum
Temperature Limit	40° - 165°F

### BATH PREPARATION

**Oil Bath:** When oil is used as the vehicle, the 7C is weighed out, 1.25 oz. per gallon of vehicle, and added to the vehicle. The bath must be agitated for several minutes to distribute the particles uniformly. Once thoroughly mixed, the bath should be checked for proper concentration and adjusted if necessary.

**Water Bath:** When water is used as the vehicle, the conditioning agent is measured out and added to the agitated bath and allowed to mix for several minutes. Once mixed, the 7C is weighed out, 1.25 oz. per gallon vehicle, and added to the bath and again allowed to be mixed uniformly. The bath is tested for proper concentration and adjusted if necessary.

**CONCENTRATION CONTROL**

The bath strength should be maintained constant at all times to ensure consistent results. The concentration should be checked at make-up time and at least once each day. The most widely used method of control is by gravity settling in a graduated ASTM pear shaped centrifuge tube. Magnaflux<sup>®</sup> part number 2461 is recommended for 7C with a stem measure of 1.5 ml. in 0.1 ml. graduations. The tube is filled to the 100 ml. line with well mixed bath. It is then placed in the stand in a vibration-free location for 30 minutes for water baths and 60 minutes for oil baths. The settling volume is then taken which indicates the amount of magnetic particles present in the bath. *Note! If the reading is high, add vehicle; if low, add particles.*

Product	Typical Settling Oil	Typical Settling Water
7C Black Concentration 1.25 oz/gal (9.4 g/l)	1.30	1.70

**METHOD OF APPLICATION**

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:** ASTM E1444, ASME B & PV Code, Sec. V, NAVSEA 250-1500-1, ASTM E-709 (E-138), MIL-STD-271, AMS-3042, MIL-STD-2132.

**PACKAGING**

8 Lb. Jar.