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Non-Destructive Test (NDT) Equipment
تامین تجهیزات و مواد مصرفی تست های غیر مخرب ایران
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Centrifuge Tubes

Centrifuge tubes and stand to measure settling volume

Centrifuge Tubes are used to monitor the concentration of magnetic particles and the level of contamination in Magnaglo® fluorescent and Magnavis® visible baths.

Part No.	Product	Measurements Printed on Tubes
2461	7C/9C Visible	1.5 ml in .10 ml graduations
8493	14A, 14AM and 20B Fluorescent	1.0 ml in .05 ml graduations
507923	MG410 and MG3410	0.2 ml in .01 ml graduations

BATH STRENGTH

The amount of magnetic particles per gallon of fluid in the inspection bath is called its strength or concentration. If the bath concentration is below recommended strength, weak particle indications will be produced or possibly no indication will appear; therefore, defects will not be detected. If there are too many particles in the bath, indications may be masked by heavy background buildup. The usable limits of bath strength are quite broad, but for consistent results the bath strength should be maintained constant at all times.

A light bath strength usually forms good indications on deep cracks, but a heavier particle concentration will show fine defects better. The bath concentration, which will best detect all defects, should be determined and held constant. Bath strength should be checked at least once each day.

After the entire bath has been thoroughly mixed and agitated, it is essential to check it for strength. The most widely used method is by gravity settling in a graduated ASTM pear shaped centrifuge tube.

DAILY INSTRUCTIONS (INCLUDING NEW BATH)

1. Let pump motor run for up to 30 minutes to agitate the suspension
2. Flow the bath mixture through hose and nozzle for a few moments to clear hose.
3. Fill the centrifuge tube to the 100 ml line.
4. Place the tube in the stand. If required by written procedure, demag the tube (note that the stand is non-ferrous and will not interfere with particle settling). Let the tube stand in a vibration-free area to allow particles to settle. Settling time is 30 minutes for a water bath or 60 minutes for an oil bath.

The gravity settling method applies to either oil or water suspension. In hot weather the water bath should be checked more often as is it more volatile than oil.

Therefore, as water is lost by evaporation, it must be replaced.

The settled particles (measured in ml) in the bottom of the tube indicate the amount of magnetic particles in suspension. A UV lamp, such as the Magnaflux EV6000 LED UV-A Lamp, must be used for fluorescent particles.

Do not include dirt particles in your centrifuge tube readings. They usually settle on the top of the magnetic particles. Dirt will not fluoresce under UV-A irradiation.

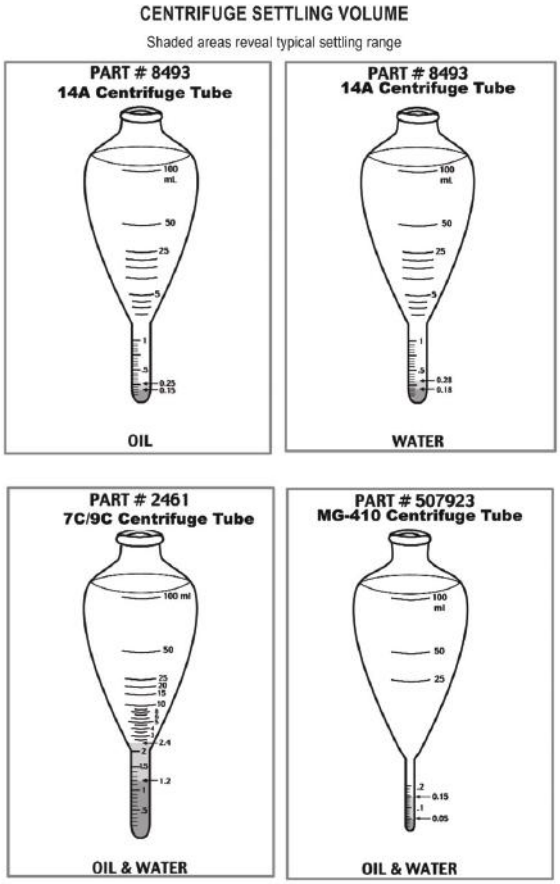
In visible particles, the appearance of dirt is very different than that of the particles. Dirt will be coarser and irregular in shape. See illustrations for recommended settling volume.

BATH MAINTENANCE TIPS

To maintain proper bath suspension during inspection requires that it be agitated prior to and while the bath is in use. The agitator pipe should be removed and thoroughly cleaned monthly or more often, if needed. Also, check area where sump screen connects to tank, clean and remove any foreign material that may restrict flow.

Constant use of the bath requires a daily check for evaporation of oil or water, loss of particles due to carry off and contamination. Eventually the bath will become so contaminated by dirt, lint, oil or other foreign material that efficient formation of indications will become impossible.

Contamination can be checked by noting the amount of foreign material that settles out with the particles in the centrifuge tube. Covering equipment, when not in use, will reduce contamination and evaporation.



SPECIFICATIONS COMPLIANCE

ASTM E709-08 (Sections 20.6.1 & X5)

ASTM E1444/E1444M-12 (Section 7.2.1)

ASME (Section V, Article 7: T-765)