



PRODUCT DATA SHEET

14A Redi-Bath Magnaglo Concentrate

Effective March 5, 1997
Supercedes July 31, 1992

General Description

14A Redi-Bath is a brown, viscous, water based concentrate. It contains 14A Magnaglo powder together with wetting agents, anti-foaming agents, and long lasting rust inhibitors. The graduated plastic bottle holds 800 mL (27 fl. oz.), enough to make up 10 gallons of water bath.

Caution: Do not mix this concentrate into carrier oil.

14A Redi-Bath Magnaglo fluoresces a bright yellow-green when irradiated by black light at a wavelength of 365 nm. When mixed according to instructions, it provides a 14A Magnaglo particle concentration of 1/7 ounce per gallon (1.07 gm/L). Its settling volume after 30 minutes is 0.15 to 0.25 mL.

Bath Preparation

1. Shake the container well to suspend the settled 14A Magnaglo particles. The bottle is purposely not quite filled when new, which makes it easier and faster to attain uniform distribution of particles in the concentrate.
2. To prepare a 10 gallon Magnaglo bath, simply pour the entire contents of the bottle into 10 gallons of water while stirring or recirculating. Rinse container with a little water and add to the bath.
3. To prepare partial baths, refer to graduation marks on the side of containers. The recommended unit dose for one gallon of water is 80 mL. Hence, the multiples of 80 mL should be used while making Magnaglo baths with volumes less than 10 gallons. Example:

A 5 gallon bath of 14A requires 400 mL (5 x 80 mL) of the Redi-Bath Concentrate. Starting with a full container, the level of liquid, after addition, should be at the 400 mL mark.

4. Mix continuously or allow the prepared bath to recirculate for 5 minutes prior to use. Make sure that the suspension passes through the application nozzle in the final minute.
5. Perform particle settling test.

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. The MAGNAFLUX centrifuge tube, part number 8493, is recommended for Magnaglo with a stem measure of 1.0 mL in 0.05 mL graduations.

The tube is filled to the 100 mL line with well mixed bath. The tube is placed in the stand in a vibration-free location for 30 minutes. After 30 minutes, the settling volume is taken which indicates the amount of magnetic particles present in the bath.

At a 14A concentration of 1/7 ounce/gallon, settling volume is 0.15 to 0.25 mL.
If the reading is high, add water, if low, add 14A Redi-Bath Concentrate.

Constant use of the bath requires a daily check for evaporation of water, loss of particles due to carry off, particle breakdown, and contamination. Eventually the bath will become so contaminated by dirt, lint, chips, 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. The particle breakdown can be observed by viewing the bath on a ketos ring and evaluating the efficient formation of indications. If the background of the bath is such that indications cannot be readily observed, the bath should be changed.

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.

Safety

1. 14A Redi-Bath Concentrate is intended for industrial use by qualified personnel only.
2. Wash off hands with soap and water after handling 14A Redi-Bath.
3. Use nitrile rubber gloves if frequent or prolonged skin exposure to the Concentrate is unavoidable.
4. Material Safety Data Sheet available upon request.

Typical Properties (Not a Specification)

SAE Sensitivity:	8 indications
Settling volume:	0.15 to 0.25 mL
pH	9 to 10
Color under visible light:	Brown
Color under black light:	Yellow-green
14A Magnaglo particle diameter:	6 microns (.0002 inch)

Specification Compliance of Made-Up Bath

NAVSEA 250-1500-1
MIL-STD-271
MIL-STD-2132
ASME B & PV Code, Sec. V
ASTM E 709
ASTM E 1444

Packaging

Plastic bottles, net contents 800 mL or 27 fluid ounces