

TECHNICAL DATA SHEET

Electron Microscopy Sciences

FOR RESEARCH ONLY

LATEX SPHERES ON GRATING REPLICA

CAT # 80055

The addition of Latex Spheres to the Grating Replica provides a double check of the accuracy of magnification calibration. It is particularly useful at higher magnifications where only a few squares of the replica pattern can be photographed together.

Note: The latex particles in this specimen have a diameter of 0.261 micron.

To use both the Replica and Latex Spheres for Magnification Calibration:

- (1) Calculate the magnification using the diffraction grating replica pattern by the following formula:

$$\text{Magnification} = \frac{\text{Distance in mm between limiting lines} \times 2,160}{\text{Number of spaces between limiting lines}}$$

- (2) Calculate the magnification by measuring the diameter of the latex particles and applying the following formula:

$$\text{Magnification} = \text{Diameter (mm)} \times 3831.4$$

(Measure as many latex spheres as possible and calculate the average diameter. Ignore any latex spheres which are distorted.)

Care of Grating Replica Specimen:

When not in use the replica should be kept in a dust-free atmosphere (as the same vial in which it is supplied). NEVER TRY TO CLEAN IT. Avoid bending or touching the replica. When viewing a replica specimen in the TEM always begin at low magnification, with one square of the supporting copper grid filling the EM screen, slowly increase the illumination to near maximum intensity (but not to cross-over) then reduce the level of the illumination and go to the desired magnification. Repeat this procedure every time a new area of the replica is to be viewed.

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