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Preparation of Fluorescent Screens AGG341

Clean off all old fluorescent material from the screen base and wash carefully in acetone to remove all traces of grease.

Place the screen face upward in a shallow dish (a very convenient dish is a G341 – settlement dish, which is fitted with a glass drain tap).

It is also advisable to place screen on perspex support to keep screen off the base of the dish.

To a quantity of 5g of powder add about 40 ml of acetone and a small piece of celloidon, or collodion (0.5 – 1%), this helps to provide a binding film for the screen material. Shake up the powder in the liquid very vigorously – some period in an ultrasonic bath will be found helpful in dispersing the larger particles.

Allow the powder to settle for a short time (30 seconds) so that any larger particles settle out. Carefully pour the supernatant with the powder suspended in it over the screen in the shallow dish, until the screen is completely covered by a depth of about 4mm of liquid. Place a clean cover over the top of the dish to exclude dust. Allow the powder to settle out of the suspension onto the screen.

When the liquid over the screen is almost clear, carefully drain the liquid out of the bath either via the tap, or by pipette if no tap is fitted.

Allow the powder on the screen to dry before moving it. Lift the screen carefully out of the dish by holding the edge only.

If marks are required on the screen to indicate the extent of the area to be photographed, a line should be scribed through the phosphor powder using a straight edge which must not, of course, touch the surface of the screen.

The screen will have to be re-made if there are excessive dust particles or hairs deposited on its surface, so cleanliness is very important.

It is difficult to deposit a screen thickness of precisely determined thickness (measured in mg/sq.cm) because of powder settling out of solution before the screen settlement is started. However, if the vessel and screen areas are known, their approximate weight deposited per unit area can be calculated. For normal microscopy, a figure of about 20 mg/sq. cm is generally adequate.