

RECOMMENDED CLEANING PROCEDURE FOR HIGH QUALITY OPTICS

- Place the mirror to be cleaned on a flat surface (e.g., LGR Teflon Cleaning/Inspection Block) with a clean piece of lens tissue underneath it.
- Remove loose particles of dust with an air blower (ideally filtered dry nitrogen) or puffer brush. This is often all that is required to clean the optic. Only if the optic is still dirty should the following steps be taken.
- Separate a single sheet of high quality lens tissue (e.g. Thorlabs Part #MC-5, or Edmund Scientific Part #NT52-105) that is wider than the optic to be cleaned (at least 2” for a 1” diameter component).
- Place the sheet of lens tissue onto the optic, with the optic at the near edge of the sheet (leaving enough tissue overhanging the near side of the optic to allow grasping). Using a clean dropper, place a few drops of pure (or **spectrophotometric grade**) Methanol onto the tissue above the optic. You should apply enough solvent so that it wicks completely to the edge of the optic. (Note that by applying the solvent to the top of the tissue, rather than directly onto the optic, that any particulates that may be present in the dropper will not contact the optical surface!).
- Grasp and pull the tissue towards you with a constant but light pressure over the full width or length of the item. The tissue should be pulled at a speed which just matches the evaporation rate of the solvent from the surface. If the liquid can be seen on the surface as an area is uncovered then the wipe speed is too fast.
- Repeat this 'drag wipe' operation 2-3 times using clean tissue each time.
- If the surface still does not look clean then repeat the full cleaning procedure. Do not attempt to 'dab' at dirty areas. A small area should be cleaned only with a wipe across the full width of the surface.
- Repeat for the other side of the component if necessary. (Note – when cleaning an HR mirror, be *very careful* when placing the HR side down – make sure the bottom tissue is clean, dust free, and flat).
- **NOTE:** Cleanliness of the solvent is **CRITICAL!** Always use high quality solvents stored in a sealed dropper bottle (see recommendations below). **NEVER** invert the dropper of a standard dropper bottle, as contact between the solvent and the rubber dropper bulb will contaminate the entire bottle (and likely ruin the bulb).
- **NOTE:** Use a clean sheet of tissue for each wipe to avoid transferring contaminants to new areas.
- **NOTE:** Do not allow the tissue to reach over the edge or bevel of a component to avoid dragging dirt or dust from the edge onto the optical surface.
- **NOTE:** Do not touch any part of the wet tissue which is to be held in contact with the component to avoid oil being drawn from the hands and being deposited on the cleaned surface.
- **NOTE:** If the surface has been contaminated with grease or oil (e.g. from bad handling) this may be removed with **pure** Acetone. Grease should be removed immediately as it can cause irreparable damage by etching the surface.

RECOMMENDED SOLVENTS

Sigma-Aldrich CHROMASOLV Plus solvents:

- Acetone - Part Number 650501
- Methanol – Part Number 646377

RECOMMENDED DROPPER BOTTLES

Nalgene 2414 Drop-Dispenser Bottle (Teflon FEP body; Tefzel ETFE dropping closure and cap)

- Part Number 2414-0030