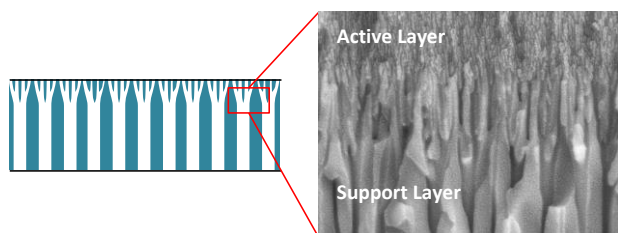


How to identify Active Layer of Anisotropic AAO Membranes

InRedox Anisotropic Membrane Filters are made of nanoporous Anodic Aluminum Oxide (AAO). These membranes have monolithic bi-layer structure, including a **support layer** with large (100-150 nm) pores for low resistance to flow and an **active layer** with pore diameter reduced to nominal 2 to 100 nm (see data sheet).



Note: *Membranes are packaged with the active layer facing the labels in the bag. For size-selective separation, the active layer must face the feed process stream.*

Which Side is Which?

If the membranes orientation gets scrambled after they are taken out of the package, the two sides could be discerned visually by examining the membranes in reflected light.

	Support	Active
Appearance	duller or matte, less reflective	smoother, shinier, more reflective
Pearlescence	none	often present
Unidirectional surface texture	more pronounced	less obvious or absent

To better see the differences, position the membranes under a table lamp and observe the membrane surface in reflected light. Rotate/tilt the membrane to view it from different angles. Optical aids (magnifying glass, reading glasses) could be useful, especially with small membranes.

Train Your Eyes

User eyes could be trained to see the difference by examining several membranes with known orientation:

- place the membranes side by side on a flat surface,
- position the light to establish a reflection,
- flip the membranes over a few times and observe the differences.

Have Polarizing Microscope?

In addition, membrane surface topology could be examined under a polarizing optical microscope:

- Use DIC mode to image transparent AAO surface.
- The active layer has less pronounced or no observable unidirectional surface texture and lower roughness than the support side.

Custom Packaging Option

Packaging of anisotropic membranes in specific orientation is available as a custom option at extra cost.

Membranes are placed between sheets of blue clean room paper with active layer facing the label on the box and are secured with foam inserts.

