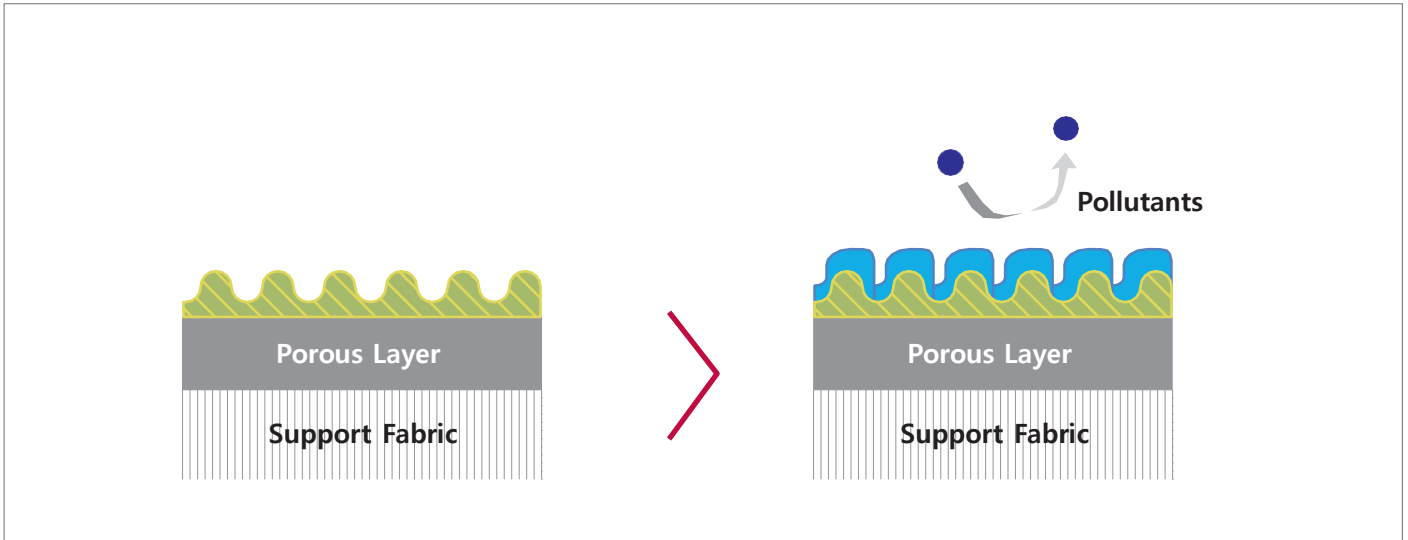


# Technical Applications Bulletin 103

## Characteristics and Advantages of LG Chem’s NanoH<sub>2</sub>O™ Anti-Fouling RO Membranes

Biofouling has long been recognized as one of the most problematic types of fouling for polyamide reverse osmosis (RO) membranes. To avoid flux decline caused by biofouling, protective chemistry has been introduced to LG Chem’s NanoH<sub>2</sub>O Anti-Fouling membranes

**Figure 103.1** The above image depicts the construction of a typical spiral wound element.



Protective material with cross-linking properties was added into the functional groups of the polyamide surface layer which then underwent a chemical reaction. The protective materials cross-link with themselves and with the reactive groups on the surface of the polyamide membrane. The protective layer is attached to and built up on the membrane’s surface, thus making it part of the active layer.

Permanently bonded protective layer is resistant to chemical agents during the CIP process and it provides additional protection against particular matters such as colloidal foulants. Furthermore, this cross-linked protective layer can help alter the membrane’s surface roughness to create a smoother membrane surface and reduce fouling potential by preventing foulant adsorption and attachment to the membrane’s surface.

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