

GXT – MEMBRANE

Description

GXT – MEMBRANE is a prefabricated membrane made of graphene and elastomeric polymers. The waterproofing compound obtained through the complete homogenization of graphene layer on elastomeric polymers added with special additives, and offers:

1. gas separation.
2. water purification.
3. Coating for pressure drop reduction
4. resistance to U.V. radiation
5. resistance to temperature change



Figure 1: PVAm-G membrane after 1 month in water

Target retention of micropollutants from water used in industrial process.

1. Membrane prepared by layer by layer technology with graphene (G) and graphene oxide (GO) and polycation (PEI)
2. Static adsorption hormone (estradiol) used as micropollutants.
3. Permeability of the graphene membrane resulted 2500 Lm-2h-1bar-1

Feed concentration	Hormone adsorption	Pall 0,1	NF90	NF270	GO	G
		μm				
~70 $\mu\text{g/L}$	ng/cm ²	120	250	160	225	280
~600 ng/L	ng/cm ²	2	3	3.1	2.8	4.8

GXT coating based on graphene can be applied on different substrates, for example of a thin coating, tens of nm, on a polyester substrate used for filter press and it reduces the pressure drop in a filter for fluid.



Filter	Flow rate (L/min)
Bare	0,24
GXT coated	0,34

Table 1: Flow of 0,5 liter of water through a 6 mm diameter polyester filter.

GRAPHENE-XT

