

CLAIMS

1. A ~~PVDF~~ polyvinylidene fluoride membrane comprising a surface having a water contact angle of greater than or equal to 150°, said contact angle being measured under ambient temperature (21 ± 3°C) and pressure conditions, and said surface comprising interconnected crystalline nodules having a size of between 5 and 12 micrometers.
2. The membrane as claimed in claim 1, wherein said ~~surface comprises interconnected crystalline nodules having a size of between 5 and 12 microns, preferably between 6 and 8 microns~~ micrometers.
3. The membrane as claimed in ~~claim 2~~ any of claims 1 or 2, wherein said nodules have a porous structure with an intra-nodular pore size of less than 1 µm.
4. The membrane as claimed in any one of claims 1 to 4, wherein the nodules have an inter-nodular pore size of less than 5 ~~microns~~ micrometers.
5. The membrane as claimed in any one of claims 1 to 4, having a pore volume of greater than 70%, preferably greater than 75% and advantageously greater than or equal to 80%.
6. The membrane as claimed in any one of claims 1 to ~~6~~ 5, characterized in that ~~it has a resistance to a pressure ranging up to at least 5 bar when it is reinforced, in particular over a textile, and then submitted to pressurized water up to 5 bar, it remains intact.~~
7. A process for manufacturing the polyvinylidene fluoride PVDF membrane as claimed in one of claims 1 to 6, said process comprising the following steps:
 - a. dissolving an amount of PVDF in a solvent at a temperature of at least 60°C, said solvent being used ~~in the pure state or with the addition of water at~~ between 3% and 5% by weight with respect to the weight of the solvent;
 - b. spreading the PVDF solution thus obtained onto a solid support in order to form a film on the surface of said support;
 - c. immersing said film in a first bath containing an alcohol chosen from methanol, ethanol, n-propanol, isopropanol and n-butanol, for a duration of greater than or equal to 1 minute, preferably greater than or equal to 5 minutes; then
 - d. immersing said support in a second bath of water.
8. The process as claimed in claim 7, wherein said alcohol is isopropanol.
9. The process as claimed in claim 7, wherein said alcohol is methanol.
10. The process as claimed in one of claims 7 to 9, wherein said solvent is chosen from the list: HMPA ~~hexamethylphosphoramide~~, DMAc ~~N,N-dimethylacetamide~~, NMP ~~N-methylpyrrolidone~~, DMF ~~dimethylformamide~~, DMSO ~~dimethylsulfoxide~~, TPM ~~trimethyl phosphate~~, TMU 1,1,3,3 - tetramethylurea.