

FOOD

HEALTH

Solvents in membranes

Why is the role of solvents essential?

Solvents are essential in producing asymmetric membranes, highly specialised filtration materials used to purify, separate, or concentrate substances. These membranes are key components in industries such as water treatment, food and beverage processing, pharmaceuticals, and paint manufacturing. They are called "asymmetric" because they have a dense top layer for selective separation and a porous bottom layer for mechanical support.

The manufacturing process begins by dissolving a water-insoluble polymer in a solvent to form a uniform solution. This solution is then cast into thin films. When a non-solvent like water is added, the mixture undergoes phase separation, causing the polymer to solidify into a membrane structure with controlled porosity and performance characteristics.

This process demonstrates the vital role of solvents in enabling the creation of membranes with specific properties—something that cannot be achieved without them. Solvents make it possible to fine-tune the membrane structure, ensuring it performs effectively in its intended application.

By enabling the production of high-performance membranes, solvents help improve the efficiency and quality of industrial processes. Their role is especially important in areas like water treatment, where effective purification and resource conservation are critical to sustainability goals.

SPOT ON

N,N-Dimethylformamide (DMF) (CAS: 68-12-2 – EC: 200-679-15)

N,N-dimethylacetamide (DMAc) (CAS: 127-19-5 – EC: 204-826-4)

N-methylpyrrolidone (NMP) (CAS: 872-50-4 – EC: 212-828-1)

Tetrahydrofuran (THF) or oxolane (CAS: 109-99-9 – EC: 203-726-8)



PROFESSIONAL USE - INDUSTRIAL USE

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