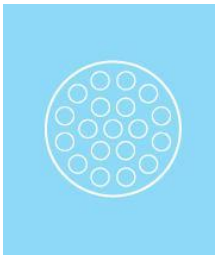
Nanofiltration Ceramic Membrane Element

Ceramic Nanofiltration membrane is relatively recent membrane filtration system, with the purpose of softening and removal of disinfection by-product precursors such as natural organic matter and synthetic organic matter. More ultrafiltration membrane system details here!



DETAILS OF NANOFILTRATION CERAMIC MEMBRANE ELEMENT

	Size	Pore size
	A: 4.0mm B: 30mm	2nm 5nm 8nm

CHARACTERISTICS OF NANOFILTRATION CERAMIC MEMBRANE ELEMENT

- Chemical, mechanical and thermal stability
- Ability of steam sterilization and back flushing
- High abrasion resistance
- High fluxes
- High durability
- Bacteria resistance
- Possibility of regeneration
- Dry storage after cleaning

OVER VIEW OF NANOFILTRATION CERAMIC MEMBRANE ELEMENT

Ceramic nanofiltration membrane is widely used in petroleum and chemical industry, medicine, metallurgy and other processes involving harsh systems

due to its unique thermal stability and chemical stability, resistance to organic solvents, disinfection, regeneration, and backwashing. In the industrial field, ceramic membrane system has become one of the fastest growing and most promising membrane materials in the membrane field.

1. Nanofiltration technology

Nanofiltration membrane technology is a new type of pressure-driven separation technology between ultrafiltration and reverse osmosis. It can not only effectively separate the relative molecular mass of 200-1000 by sieving, but also generate the Donnan effect by electrostatic action, with high removal rate for divalent and high valence ions.

In recent years, nanofiltration technology has gradually occupied an important position in the petrochemical, food processing, wastewater treatment, medical technology, and energy industries, and is a common technology for achieving sustainable development.

2. Ceramic nanofiltration membrane

Nanofiltration membrane materials are a key core of nanofiltration technology. Ceramic nanofiltration membrane has excellent thermal stability, chemical stability, high mechanical strength, acid and alkali resistance, microbial erosion, chlorine and other oxidizing substances, anti-pollution, etc. It has become the fastest growing and most developed in the membrane field and one of the prospective membrane materials.

APPLICATION OF NANOFILTRATION CERAMIC MEMBRANE ELEMENT

1. Chemical industry (membrane technology in the chemical industry)

a. Application in catalyst recovery in the petrochemical industry

In petrochemical and chemical production, the application of the catalyst is very extensive, and it is generally necessary to separate the product and the catalyst after the reaction. Ceramic nanofiltration membrane has good heat resistance, chemical solvent resistance, and good mechanical strength. It adopts cross-flow filtration method in catalytic reaction solid-liquid separation and has the advantages of high-temperature resistance, acid and alkali resistance, solvent resistance, etc. The coupling can fully improve the efficiency of the reactor, high separation precision, and can separate the nano-scale catalyst.

b. Application in brine purification in the field of the chlor-alkali chemical industry

Ceramic nanofiltration membrane has excellent performance such as pollution resistance and long life and is widely used in the field of chlor-alkali chemical industry. Using efficient "cross-flow" filtration, it is difficult to achieve results and advantages with other refining and filtration technologies.

2. Fine separation of medicine

Compared with traditional organic membranes, ceramic composite nanofiltration membranes have the unique advantages of high separation precision, guaranteed filtrate quality, high flux filtration, high product yield, low wastewater, low cleaning frequency and no need for additives. It can realize desalting and pre-concentration of target products and has been successfully applied to biological enterprises such as glutamic acid, citric acid, itaconic acid, and vitamin C.

3. Environmental water treatment (water filtration membrane)

The integrated process with ceramic membrane + organic membrane as the core is widely used in: oily water filtration system, metallurgical wastewater treatment, chemical wastewater treatment, paper mill wastewater treatment, large-scale pure water and ultrapure water preparation, zero discharge of power plant brine.

4. Gas purification

The integrated process technology with ceramic nanofiltration membrane as the core has the unique advantages of high separation precision, short process, acid and alkali resistance, high-temperature resistance and pollution resistance. It is widely used in industrial flue gas desulfurization, blast furnace solid-gas separation and automobile exhaust gas treatment. Wait.

5. New materials field

The ceramic nanofiltration membrane can effectively remove impurity ions in the slurry and efficiently prepare ultrafine ultra-pure nano-powder. At present, it has been applied to the purification of nano-powders such as nano-catalysts and ultra-pure non-ferrous metals. It can also be used in the purification process of nano-materials such as lithium batteries and graphene so that the impurity components in the production process can be removed in time, which is beneficial to the improvement of product yield.