

Tailor-made services, for each stage of your project

Project stages

2 & 3

Development and production of a membrane material

- Ceramic and polymeric membranes Development
- Ceramic and polymeric membranes Fabrication and Manufacturing

Send us your project and we will determine together best for you: orelis@alsys-group.com

Find all Alsys membrane services on the website

www.alsys.com
HEADING FOR THE FUTURE



Contacts ☎:

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ALSYS

Development of ceramic materials



Objectives

- ✓ Definition of the size and geometry of the supports: external diameter of 25 mm, or 40.5 mm, feed channel diameters from 2 mm to 6 mm
- ✓ Material development based on oxide (zirconia, alumina, silica, titanium) or silicon carbide
- ✓ Ceramics: preparation of powders, formulation of materials, shaping (extrusion) and sintering of supports, deposition and sintering of membranes, sol-gel process, hard-coating, zeolite thin film deposition, organometallic, MOF (Metal Organic Framework)
- ✓ Technical objectives: porosity (porous, semi-dense, dense membrane), mechanical (abrasion) and chemical resistance, surface affinity (hydrophilic, hydrophobic, etc.)

Knowledge and experience

- 100 different membranes, based on oxide (Kleansep™) or silicon carbide (CeraMem®) ([see data sheet](#))
- 10 tubular and monolith geometries, and 10 cut-off points (MF, UF, NF) ([see data sheet](#))
- A team of engineers and R&D technicians in materials and chemistry. Laboratories, analysis tools (SEM) and testing tools (furnaces)

Recent activities:

- New 5 kD and 1 kD nanofiltration membranes
- New 10 kD ultrafiltration membrane
- Continuous improvement of 15 kD ultrafiltration (improved abrasion resistance)
- New 1 µm membrane with mono-dispersed cut-off (to replace DE filters)
- 55 channel membrane
- 40.5 mm diameter
- Universal laser engraving system with QR code

Development of polymeric materials



Objectives

- ✓ Polymer development (PAN, PVDF, PES)
- ✓ Polymer: development of a support (woven, non-woven), formulation of materials, deposition of membranes on the support
- ✓ Technical objectives: porosity, mechanical and chemical resistance, surface affinity (hydrophilic, hydrophobic, ...)

Knowledge and experience

- Polymer membrane range (Pleiade®) ([see data sheet](#))
- Polymer membrane range: 3 materials (PAN, PVDF, PES), 1 geometry: flat ([see data sheet](#))
- A team of engineers and R&D technicians in materials and chemistry. Laboratories, analysis tools (SEM) and tests

Latest developments:

- Membrane development: PAN hollow fiber
- Membrane development: PAN for OSN application
- Membrane development: PAN for hybrid membrane (gas separation CO₂ / N₂ / O₂)

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Ceramic membranes manufacturing



Knowledge and experience

- 2 ceramic membrane production sites (France, USA)
- Annual membrane production capacity: > 100,000 m² (all materials combined)
- ISO 9001 certification (CTI site in Salindres)
- 2 Quality Control laboratories (France, USA)
- A team of engineers and R&D technicians in materials and chemistry

Laser engraving on membranes



Membrane cutting machine and laser engraving



Polymeric membranes manufacturing



Knowledge and experience

- 1 polymeric membrane production site (France)
- ISO 9001 certification (CTI site in Salindres)
- 2 Quality Control laboratories (France, USA)
- A team of engineers and R&D technicians in materials and chemistry

Plate assembly machine



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Related product data sheets

ALSYS - US0602 - CERAMEM CERAMIC MEMBRANES AND MODULES - Data Sheet - V03.21.pdf

ALSYS - EN0022 - KLEANSEP CERAMIC MEMBRANES and MODULES - Data Sheet - V03.21.pdf

ALSYS - EN0071 - PLEIADE POLYMERIC MEMBRANES - Data Sheet - V07.19.pdf

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