



Filtration Solutions
Life Sciences

S E F A R
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Life Science Industries

High-quality products for filtration, screening and drying in the life science industries:

- Pharma (pharmaceuticals, drugs)
- Cosmetics (lotions, creams, lipsticks)
- Nutraceuticals (functional food)
- Agrichemicals (fertilizers etc.)

Our offer

- Customized solutions (incl. FDA, GMP)
- Integrated production: all steps from weaving to fabrication
- High-level quality and traceability
- Over 50 years of pharma experience

Your benefit

- Reduced production costs
- Improved process safety
- Improved end product quality



Solid finishing

Fluid bed dryer bags

Sefar fluid bed dryer bags are manufactured from polyamide or polyester and give you exactly what you are looking for:

- Optimized design and fabrication to minimize loss of fine particles through stitching holes
- Exceptional drying performance
- Maximum service life
- Smooth surfaces for easy cleaning and solids release
- Easy installation and perfect fit to minimize downtime and reduce product loss
- Safe dissipation of static charges in explosive environments (unique certification of electrical resistance)



Solid/liquid separation

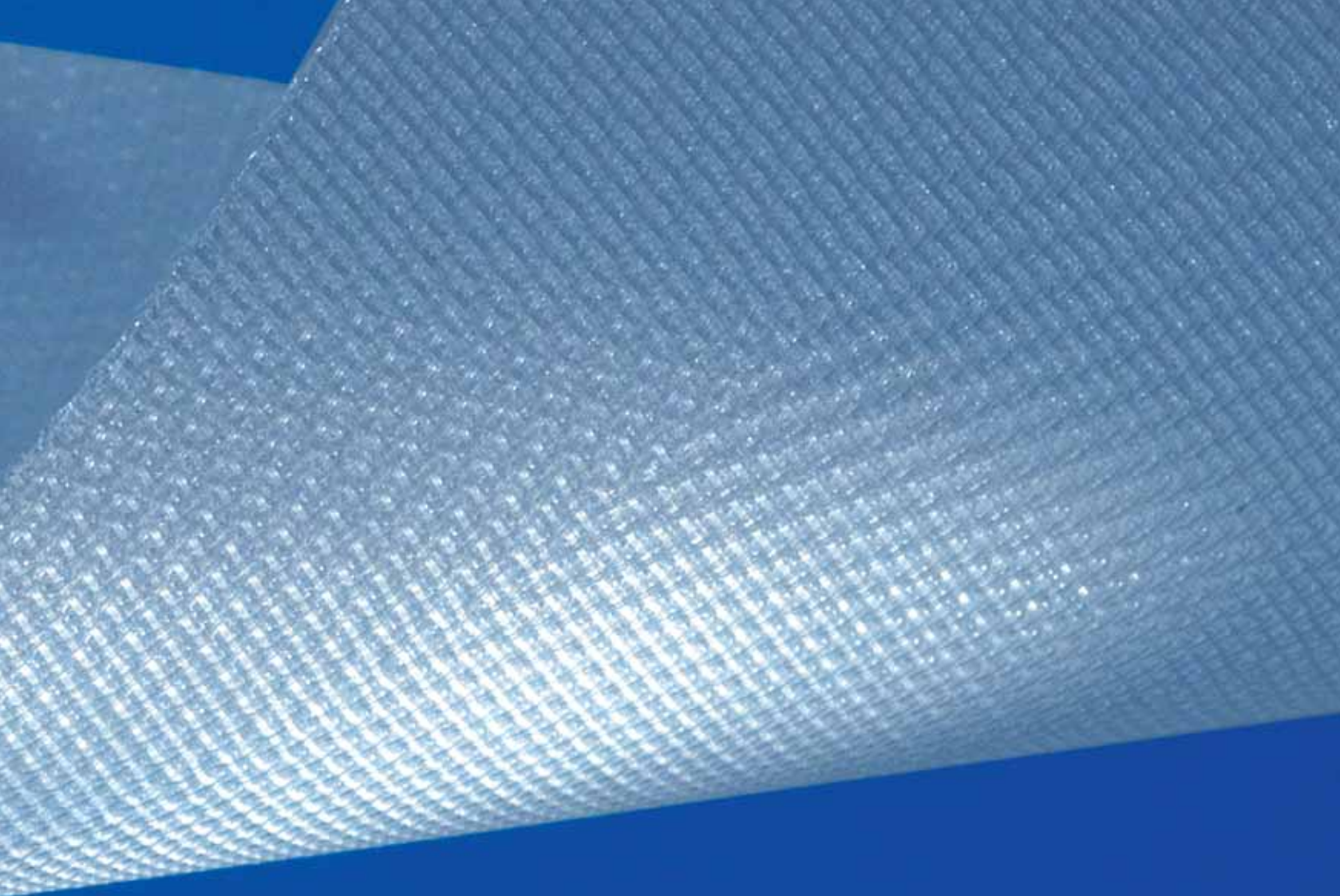
Centrifuge liners and bags

Sefar is one of the world's leading producers of liners and bags for batch centrifuge filters. Sefar manufactures liners and bags for all makes and models of bottom discharge, top unload, peeler and inverting centrifuges.

All products have been designed to take account of the special conditions in the centrifuge.

Fabrication techniques and fabrics are chosen to optimize the overall productivity of the centrifuge and special attention is given to the most demanding requirements:

- Easy installation and perfect fit in order to reduce product loss and minimize downtime



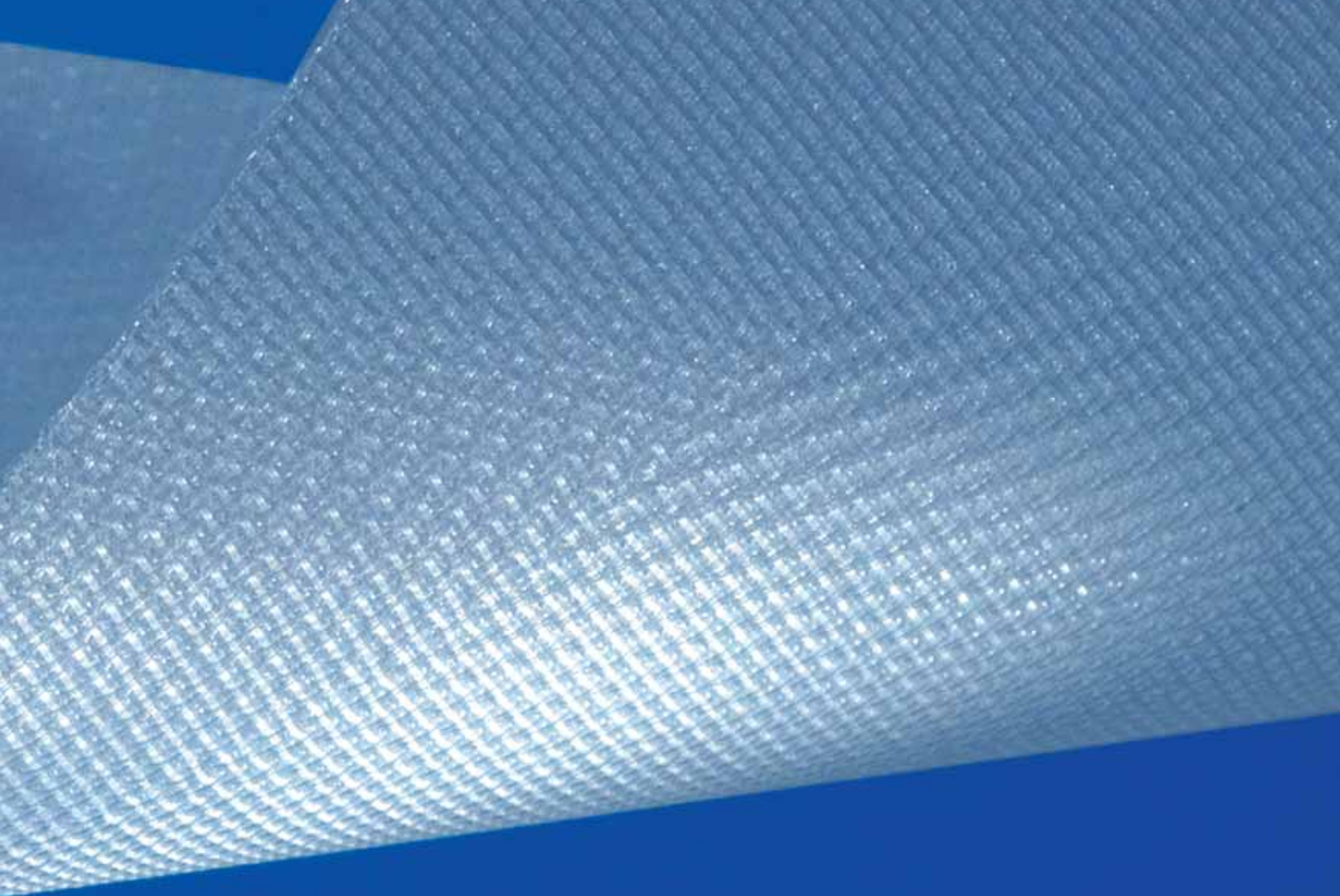
- Quality manufacturing eliminates common wrinkling and folding problems that contribute to shorter cloth life
- Full spectrum of polymers for exceptional chemical compatibility and temperature resistance
- Wide range of pore sizes and permeability to efficiently perform the separation task without clogging
- Smooth surfaces for easy cleaning and cake release.

Heinkel inverting centrifuges

- Heinkel and Sefar are now closely cooperating, which provides unique advantages for the user:
- Direct access to the specific filtration know-how of both the original machine and the filter media manufacturer
 - Support from Sefar and Heinkel experts for process optimization
 - Access to a new generation of filter cloths specifically designed for inverting filter centrifuges
 - Global availability and shortest possible delivery times through an optimized global distribution network supported by Sefar and Heinkel (Individual supply agreements are available)

Further important filtration products

- In addition to the already presented products Sefar can offer a wide variety of ready-made filtration products for applications in the life science industry. They all adhere to the high standards concerning certification and traceability and suitable for:
- Horizontal disc filters
 - Nutsche filters/dryers
 - Blenders/dryers
 - Connector sleeves



Industry requirements and Sefar solutions

The increasing pressure from regulatory authorities is compelling the industry to more closely regulate items coming into contact with a pharmaceutical product. To meet this new challenge Sefar has created a specialized fabric line where the yarn-processing chemicals are quantified using extractable testing and as a result used at a level to achieve a specified limited concentration.

Sefar has a unique position integrating all crucial production steps from weaving to fabrication of our ready-to-use filters.

With this vertically-integrated capability we have designed our PHARMA-grade line of controlled and compliant filters specifically for use in pharmaceutical applications.

SEFAR® PHARMA-grade fabric

The fabric is the most important part of our filtration products. Sefar's PHARMA-grade line is a unique selection of our full range of high-quality fabrics. The production of these fabrics has been adapted to meet all Sefar QA-Analyses of the following criteria:

- The yarn polymers conform to FDA CFR title 21, part 177 (indirect food additives: polymers)
- The yarn polymers conform to Directive 2002/72/EC of 6th August 2002 of the European Community (Directive on plastic materials and articles intended to come in contact with foodstuffs)
- Extractable levels (total extraction with different solvents) are below a tolerable limit of 1000 mg/m² (m² fabric area)

SEFAR® PHARMA fabrication

PHARMA-Grade fabrication sites must implement defined GMP Guidelines containing directives for:

- Cleanliness and traceability
- Manufacturing documentation
- Quality control and final inspection
- Employee training
- Packaging and labeling

The most important difference from normal fabrication is the strict limitation of the usable fabrics and component items:

- Only specifically designated components are suitable. Components allowed product contact are FDA compliant or have been thoroughly evaluated during extraction tests (tolerable limit of 1500 mg/m²)
- Only SEFAR® PHARMA-grade fabrics are used



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