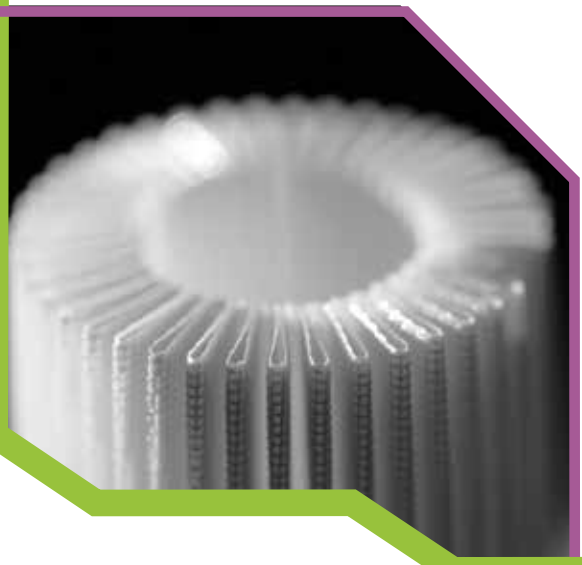
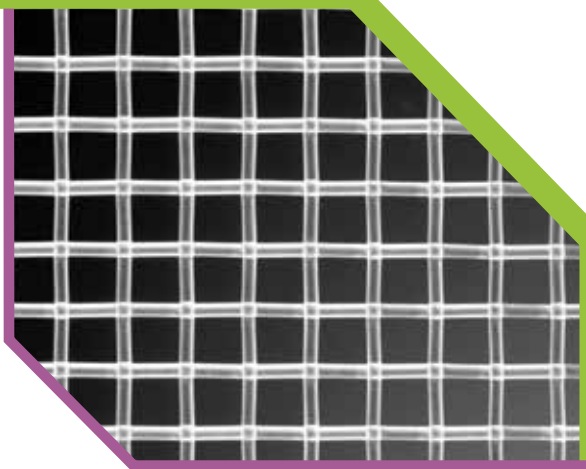
SAATIcare

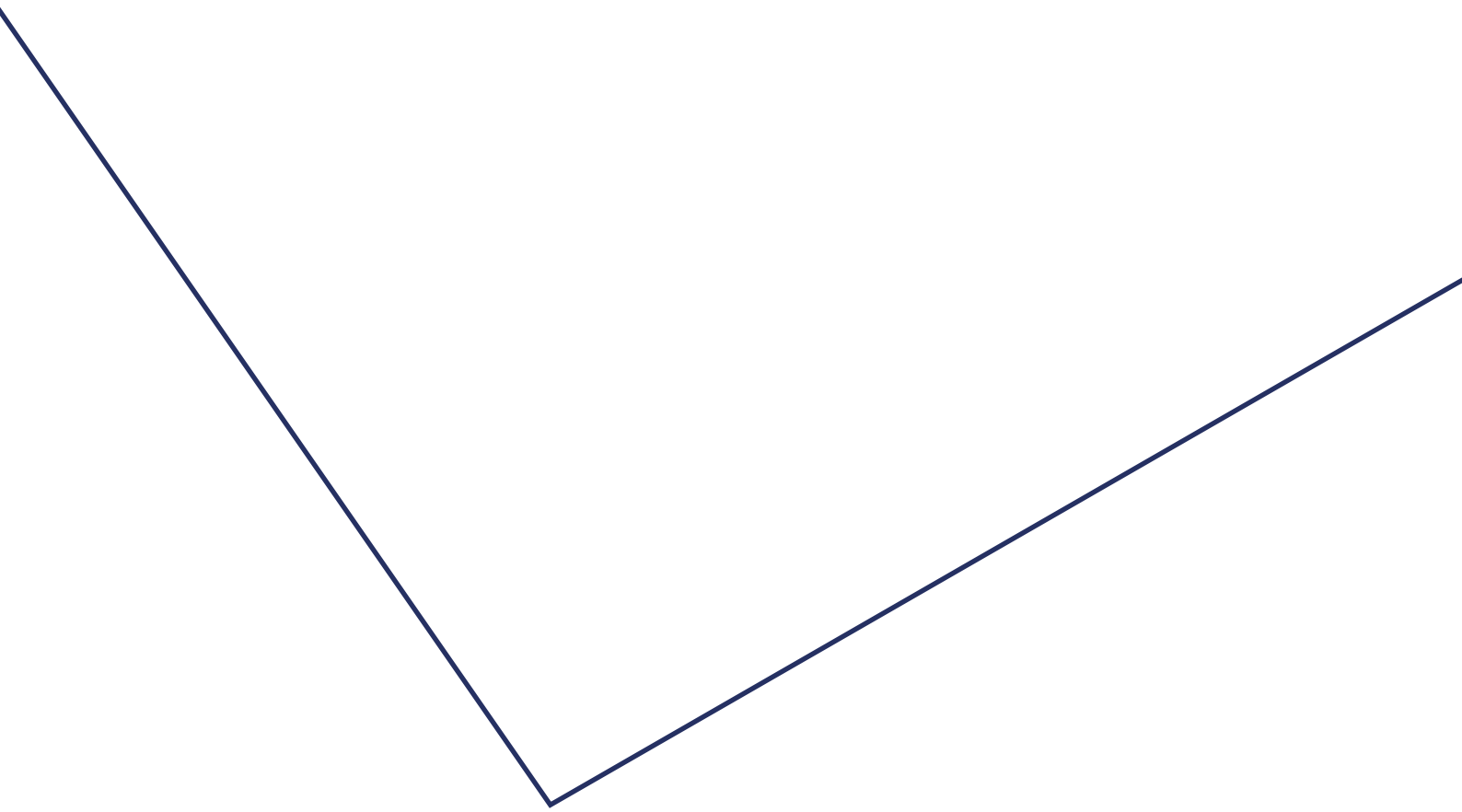
precision fabrics for medical
and diagnostic applications





SAATI

We cross-innovate



SAATI

We cross-innovate

TABLE OF CONTENTS

SAATIcare

The Industry Standard for Medical and Diagnostic Applications

Perfecting the Art of Precision Woven Fabric by Innovation Driven R&D and Strict Quality Controls

SAATI has a long history of manufacturing and distributing precision woven fabrics.

SAATI has perfected the technology of manufacturing fabrics to a high degree of precision and consistency: every phase of production is carefully monitored, employing frequent in-house testing and rigorous inspection to ensure consistent quality.

SAATI Medical Grade fabrics are tested and certified in accordance with USP CLASS VI/ISO 10993 Regulations and they are manufactured in class 10,000/ISO 7 Clean Rooms in accordance with UNI ISO 9001 regulations. Additional certification of non-pyrogenic mesh is performed through the LAL test.

With about 1,000 employees worldwide, and established strong track records in both innovation and manufacturing excellence, our mission is to improve the life of every person every day, by through working with customers and partners to create a safer, healthier and cleaner world.

To guarantee the reliability of our products, we constantly run tests and have all of the strictest and most up to date certifications that validate the consistency, performance, quality and characteristics of each item.

SAATIcare

Testing Compliance

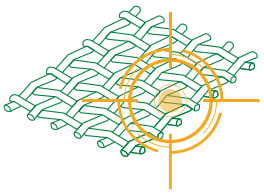
SAATI medical grade fabrics can be tested and certified according to the following regulations:

USP CLASS VI TEST USP 24/NF 19, 2000

Biocompatibility of plastics. Including Systemic Toxicity, Intracutaneous Toxicity and Implantation Tests.

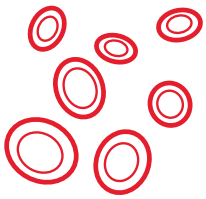
LAL TEST

USP 24/NF. 19, 2000
Limit: 0.125 EU/ml
Pyrogen Endotoxin Test.
Detects endotoxins released after the death of bacteria.



EXTRACTABLES

21CFR177.1630 21CFR177.1500
Amount of extractables from a filter during its intended use.



HEMOLYSYS TEST

DIN 58970
Test detecting compounds which may damage red blood cells.

CYTOTOXICITY TEST

ISO 10993 Part 5
Determines whether the leachables from the material may cause cytotoxicity (death of cell) or not.

ADDITIONAL TESTS

Additional tests are available on request.

SAATIcare

The Industry Standard for Medical and Diagnostic Applications

Medical and Diagnostic Devices

Among the most demanding fabric applications are medical and diagnostic devices. SAATIcare healthcare fabrics are more than up to the task; they are the preferred choice for medical devices such as infusion and transfusion filter, arterial filter, oxygenators, micro aggregates filter, & blood bags, and diagnostic applications such as test strips, spirometers, biopsy bags and molecular sieves. The precise aperture size, uniform high flow rates, and lot-to-lot consistency make SAATIcare fabrics the ideal solution for demanding healthcare applications.

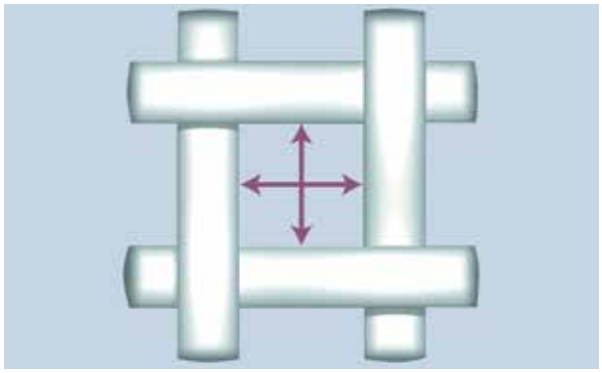
Manufactured To The Most Exacting Standards

SAATIcare fabrics are woven with monofilament polyester or polyamide fibers with smooth and uniform surfaces that are particularly suitable for medical applications. The monofilament fibers are non-shedding to reduce the risk of particulate contamination. The fibers are woven to exceptionally tight tolerances, creating uniform pore sizes, excellent strength, and good dimensional stability.

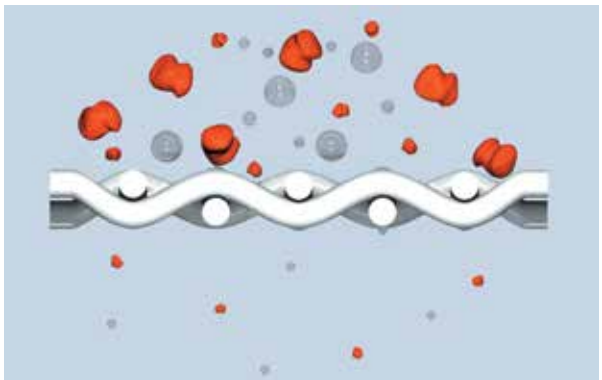
Customized to Meet Specific Customer Needs

Typical surface modifications requested include plasma treatment, adding hydrophilic or hydrophobic characteristics, and dyeing in virtually any color.

SAATI Engineers can also evaluate developing a fully customized solution using your specific chemistry applied to the surface of your mesh to functionalize the material beyond simple filtration.



Precise Mesh Opening. The Mesh Opening is the square space between two warp and weft yarns



High flow rates with low pressure loss

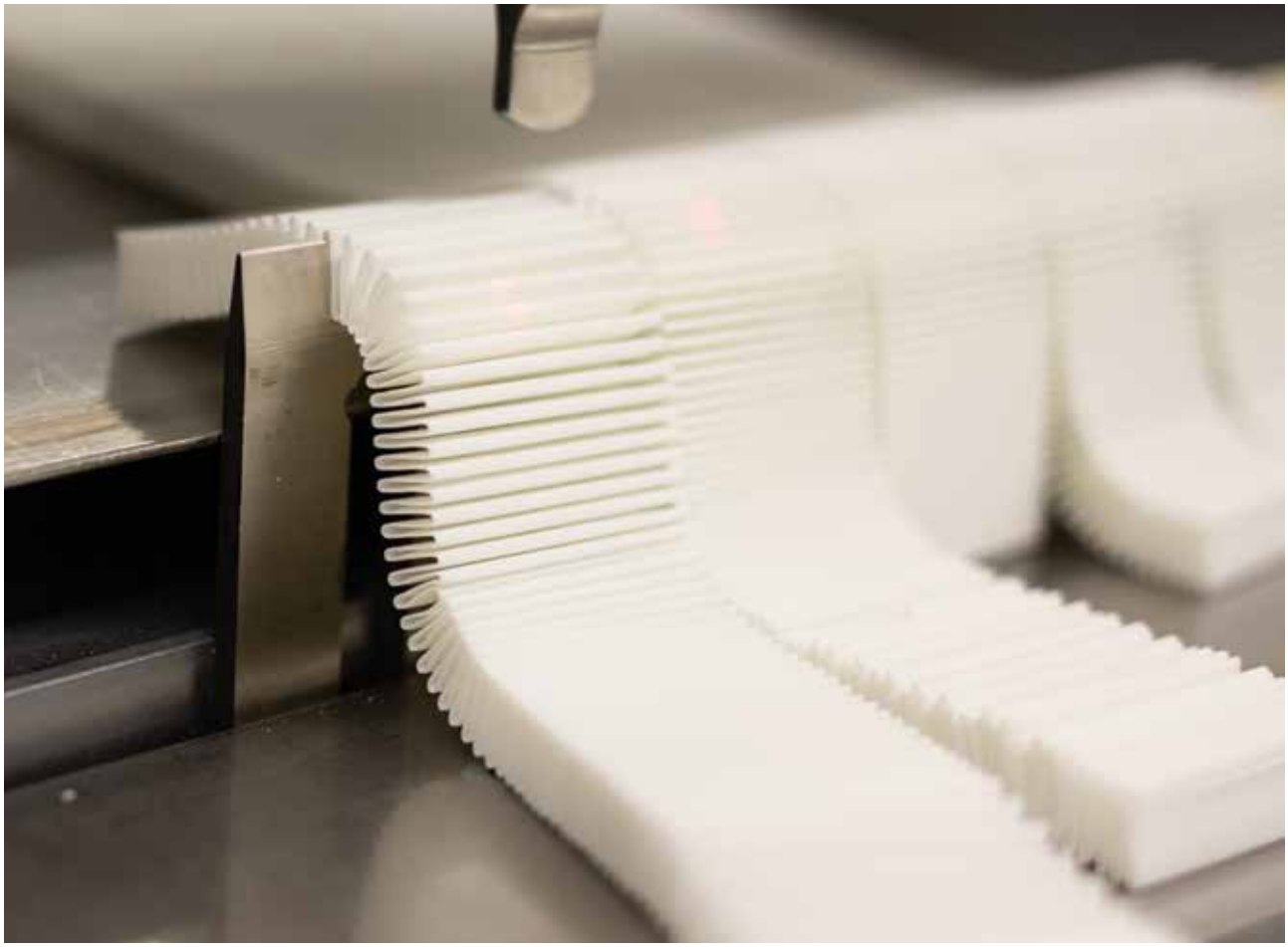
SAATIcare

Fabrication Capabilities

High-Quality, Cost-Effective Custom Fabrication

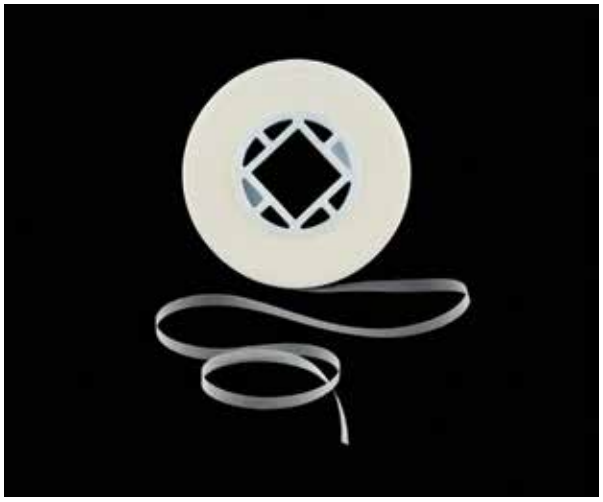
SAATIcare fabrics can be provided in a wide variety of finished or partly finished products. Specially designed processing equipment can create quality custom-fabricated parts in the most cost-effective way. SAATIcare fabrics can be cut into ribbons, pleated, or formed into tubes, or made into any required shape. Critical fabricated parts are processed in Class 10,000 clean rooms (ISO 7).

When SAATI engineers design a part for custom fabrication, their primary consideration is to produce a high-quality precision product that will remain consistent from order to order, year after year.



SAATIcare

Fabrication Capabilities



Ribbons

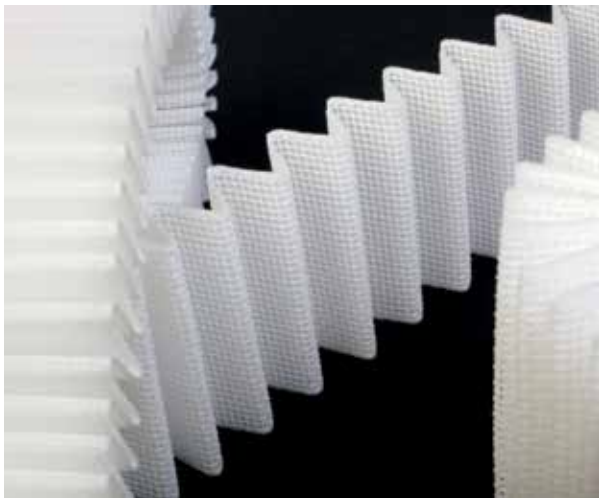
SAATIcare fabrics can be heat slit economically, or ultrasonic slit for the closest tolerances and highest quality as needed.

Production Technology involved: Heat, Ultrasonics.

Continuous Tube / Multi-Layer Products

Two layers of filter media (identical or different) are simultaneously slit with heated blades to form a continuous double-seamed tube. Ultrasonic-welded tubular ribbons, although similar in construction to heat slit items, can be produced in a wide range of sizes, including very small ones. Two or more narrow layers can be attached using ultrasonic slitting. A fine filtration media can be supported or protected with a coarser one.

Production Technology involved: Heat, Ultrasonics.



Pleated Components

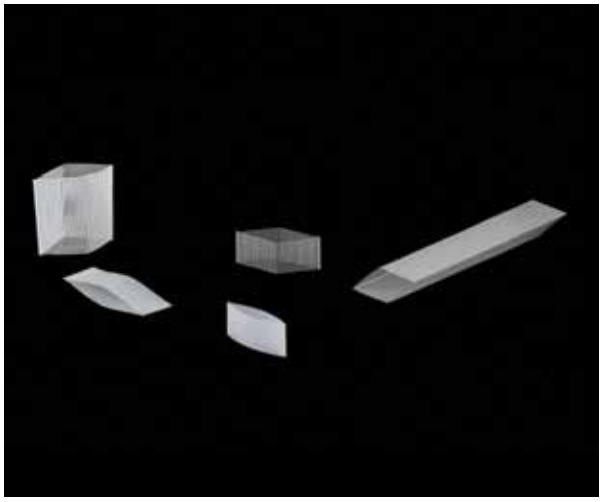
Mono or multi-layer pleated components such as pack, ribbon, and cartridges can be manufactured for all applications requiring high filtration capacity in a narrow space.

Production technology involved: Heat, Ultrasonics.

Shapes

Die-cut or laser cut parts can be produced in almost any shape or size. One or more layers of fabrics can be ultrasonic cut or sealed into virtually any shape using a PC controlled plotter, assuring a faithful reproduction of design.

Production Technology involved: Die-Cut, Ultrasonics, Laser.



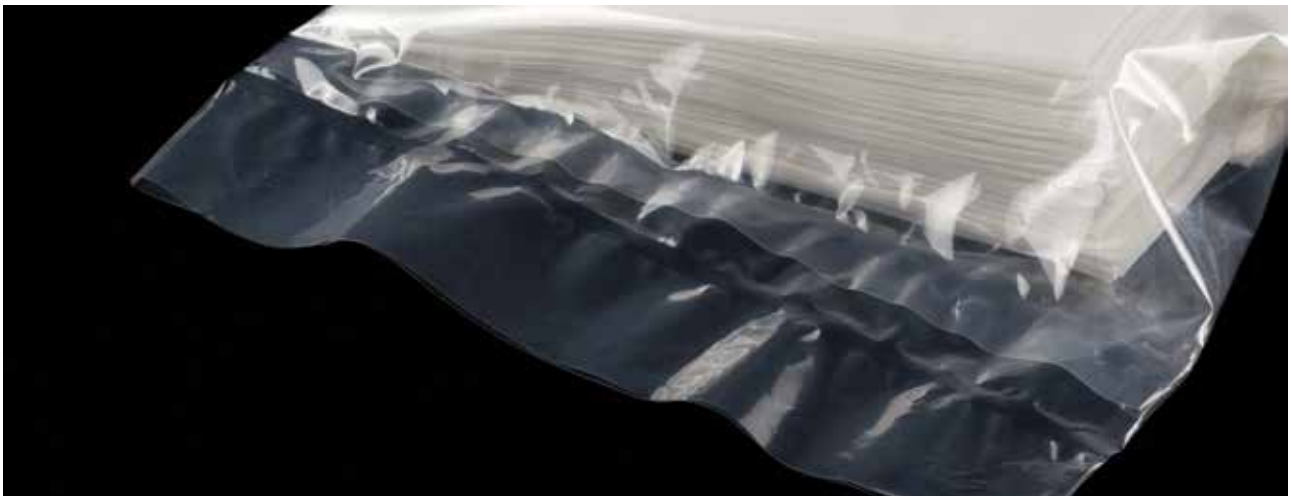
Tubes - Rectangles

For all applications requiring molded cylindrical filters, SAATI offers fabric tubes and rectangles with two open ends, die-cut or laser cut to length.

Many applications can accept the quality of a cold cut tube in view of its economic advantages. If a component must have one end sealed and one end open, SAATI is able to combine technologies in the same process and supply tubes with one end die-cut or laser cut and the other end ultrasonic sealed.

Ultrasonic technology is also applied for the fabrication of rectangular filters.

Production Technology Involved: Die-Cut, Heat and Ultrasonic.



Double Packaging

For all fabricated parts destined to medical application, SAATI provides double packaging in order to guarantee high protection.

SAATIcare

For Medical Applications

High-Performance Features For Medical Applications

Precise pore sizes provide exceptionally selective filtration. Particulates and air bubbles of a specific size can be removed without affecting red blood cells.

High open area materials provide high flow rates with minimal pressure loss.

The uniform pressure drop provides consistent air pressure monitoring in spirometers.

Smooth monofilament fibers and straight-through flow paths reduce the risk of hemolysis.

Fabrics for medical applications can be specially finished to reduce pyrogens and contaminants.

-- SAATIcare fabrics conform to USP Class VI.

-- Fabrics are safe for gamma sterilization and autoclaving.

All SAATI products designed for medical applications are medical grade.

Hemofiltration

Hemoperfusion, Hemodialysis, and Hemofiltration are methods of filtering the blood extra-corporeally to remove toxins or for blood purification in general. SAATIcare woven meshes are used as protector filters in order to impede purifying elements (i.e. activated charcoal, resins, bicarbonate etc.) from flowing out of blood purifying cartridges.

Cardiosystem

During open heart surgery, heart and lung functions are temporarily replaced by medical devices (heart-lung machine) to guarantee the survival of the patient. Filters play an extremely important role in the heart-lung machine.

Infusion filters

Possible contaminants originating from infusion bags may complicate the recovery of patients. SAATIcare monofilament woven meshes are designed to prevent possible blood poisoning caused by contaminants such as extraneous salts, microorganisms (protozoo, bacteria), dissolved impurities and other micro-particles.

Cardiotomy Reservoirs Filters

Possibile foreign and undesirable particles such as thrombus, bone debris or air bubbles are harmful for the patient during the surgery. This is the reason why a fine filtration is necessary. Moreover thanks to smooth monofilament yarn and straight-through flow paths, SAATIcare products reduce the risk of blood cell damage.

Arterial Filters

The aim of SAATIcare mesh is to remove blockages in the perfusion circuit such as gas emboli, fat emboli, aggregates of platelets or red blood cells, air bubbles and other debris during the last filtration stage before the reinjection of the blood to the patient.

Transfusion filters (Transfusion IV Sets)

SAATIcare products capture clots, micro and macro aggregates which could be present in the blood of the patient and reduce the risk of embolism.

Microaggregate Filters

The storage of whole blood is associated with formation of a considerable quantity of microaggregates between 25 µm and 40 µm. These microaggregates are mainly composed by degenerated leukocyte and thrombocyte fragments of red blood cells and other cells, lipids, lipoproteins and precipitated denaturated albumin. These microaggregates can damage pulmonary micro-circulation and for this reason SAATIcare meshes are used as filter media.

Blood Bags

The flow of blood must be filtered during transfusion to remove clots and small clumps of platelets and white blood cells that form during collection and storage.

SAATIcare

For Blood Filtration

SAATICare High Flow Fabrics for Arterial line Blood Filters

SAATI develops High Flow fabrics that achieve a superb higher open area with narrower mesh opening compared to standard filter materials.

For example, by using our SAATIcare High Flow fabric, the performance of arterial filter and other blood filters is increased up to 60% compared to standard fabrics.

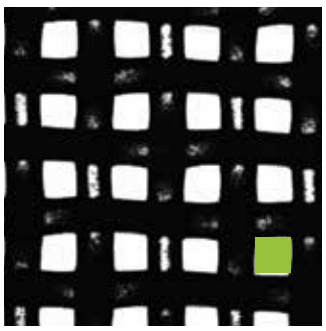
By guaranteeing a mesh opening even less than 40 µm, such a high open area rate can dramatically improve the behaviour of the final filter, by minimizing pressure drop and priming volume, and meanwhile allowing a possible reduction of the filter dimensions, with a considerable reduction of the final costs.

Standard Fabric

Ob. 10x

40 µm

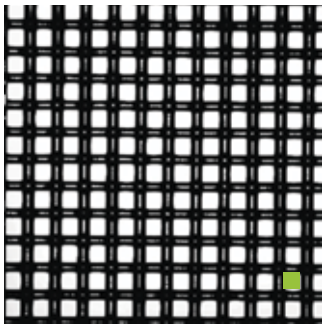
Close-up



40 µm

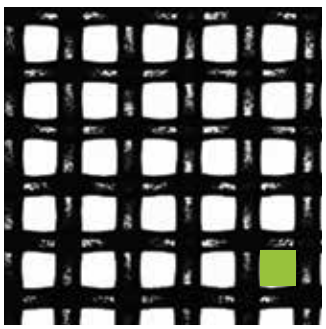
SAATIcare High Flow Fabric

Ob. 10x



40 µm

Close-up

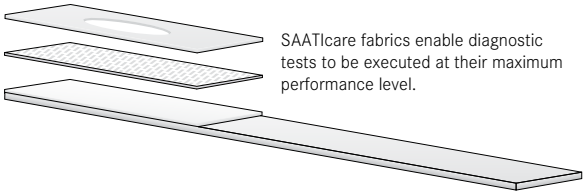


40 µm

SAATIcare

For Diagnostic Applications

High-Performance Screen Membranes For Critical Diagnostic Tests



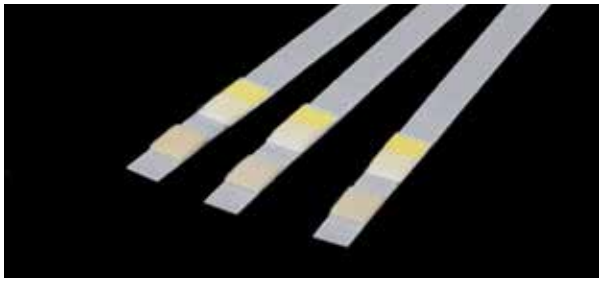
SAATIcare fabrics enable diagnostic tests to be executed at their maximum performance level.

SAATIcare products are a complete solution for diagnostic test strips. They can be used as:

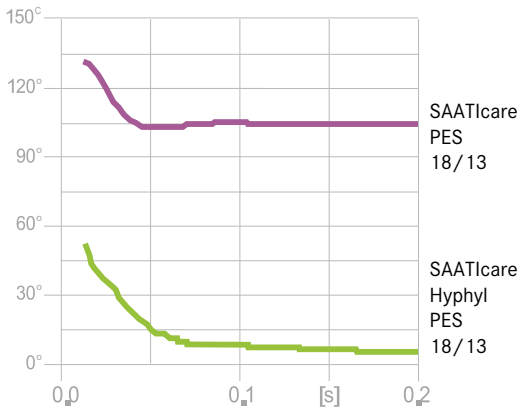
- Pre-Filter: Protective covering of the strip
- Support: Improving the reinforcement of the membrane and increasing its mechanical resistance thanks to the high tensile strength of the fabric. Use of fabric instead of non-woven material avoids the migration of the latter into the former as accurately as possible.
- Sample Pad: Thanks to SAATI fabrics treated with Hyphyl®, a special hydrophilic surfactant coating, the amount of liquid transferred to lower layers of test strip is dramatically increased. The precise pore size and weave provide high wicking (lateral flow) rates for faster assay performance.

SAATIcare Hyphyl™ - A Surfactant Coating With Superb Hydrophilic Properties

SAATIcare Hyphyl is a unique hydrophilic surfactant coating (an FDA-approved organic salt) that dramatically increases the amount of liquid transferred to lower layers of a test strip, as well as increasing the spreading area of a drop of liquid.

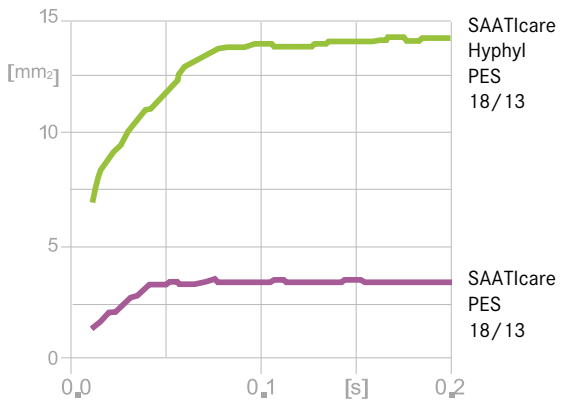


Dynamic Contact Angle: Hyphyl-Treated vs Standard Fabric



The lower contact angle of SAATIcare Hyphyl indicates that it is more hydrophilic than standard mesh.

Wet Area: Hyphyl-Treated vs Standard Fabric



A 4-microliter drop of de-ionized water can wet an area almost five times greater using Hyphyl-treated fabrics.

SAATIcare

For Diagnostic Applications

Spirometers

A spirometer is an apparatus for measuring the volume of air inhaled and exhaled by the lungs. The mesh is used as pressure transducer to measure pressure drop across the filter thanks to the consistency of air permeability.

Biopsy Bags

Biopsy bags are made by solvent-resistant material and are designed to process small biological specimens. Moreover they also maximize liquid exchange. SAATIcare® biopsy bags can be produced with or without flaps.

Molecular Sieves

A molecular sieve is a molded cup which uses mesh with specific pore size.

It rapidly isolates primary cells in order to obtain a uniform single-cell suspension from tissues.

The use of SAATIcare mesh makes the process faster and easier compared to gauze filtration.

Moreover SAATIcare range of product is characterized by wide range of pore sizes. This makes a perfect media for sieves used during preparation of flow cytometry samples, specimens for primary cell cultures/immunogens and freezing stocks. SAATIcare products filter also agglutinative proteins produced in inactivation serum.

Other Applications

SAATIcare products are also used for fluid handling, sample preparation, reagent delivery, and as a carrier for membranes.

SAATIcare

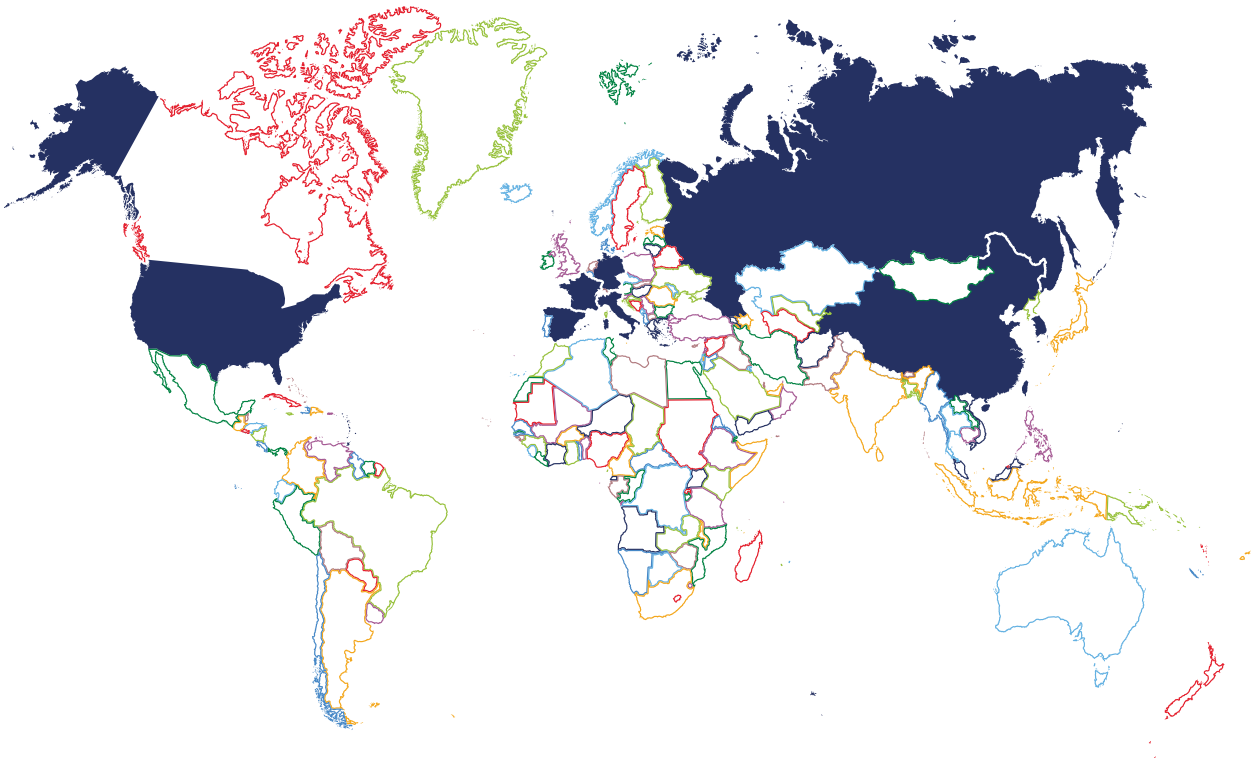
For a Sustainable Future

We Work To Improve Everyday Life

We understand the importance of operating a sustainable business. First of all, in terms of the products we manufacture. At SAATI, we develop and make available technological products that feature in people's everyday routines, all over the world, helping to make their lives healthier, safer, or simply easier.

Life Is Precious. We Work To Protect It

All our products, from fabrics, through components to chemicals, recognize that life is precious. At SAATI, we manufacture technologies for life: filter fabrics for blood transfusion set; aramid fabrics in bullet proof jackets; functional fabrics and chemicals to manufacture solar cells, mobile phones and tablets that improve our lives.



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SAATI

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