

LEADERSHIP THROUGH INNOVATION IN ACTIVE PACKAGING

Making the World Safer,
Healthier and More Productive.





WE ARE MULTISORB FILTRATION GROUP

Founded over 60 years ago, Multisorb is a global leader in active packaging technology. From basic silica gel packets to patented formulations, we produce a range of inserts that protect products as they travel to the end consumer.



BACKED BY THE WORLD'S FASTEST GROWING FILTRATION COMPANY

As part of Filtration Group, the world's fastest-growing filtration solutions company, our customized service and attention to detail is fueled by our mission to make the world safer, healthier and more productive. Our goal is to continue to develop innovative solutions, so your customers can rely on your product.



PROVEN SCIENCE

The success of our products is a result of the full-time, dedicated R&D efforts by our team of U.S.-based scientists and packaging engineers. Our ground-breaking methodologies have been validated by market leaders in pharmaceuticals and diagnostics.



OUR CULTURE



Making The World Safer, Healthier & More Productive

With a passionate workforce, global footprint and world class engineering and manufacturing capabilities, we are driving innovation and developing solutions across a broad spectrum of applications in the fast-growing and rapidly-evolving global filtration industry.



HELD TO A HIGHER
STANDARD

DELIVERING A PREMIUM PRODUCT

Multisorb's quality is second-to-none. Our customers count on our packaging solutions to protect their products and meet all regulatory requirements. Quality is built into our DNA, and we regularly conduct internal audits and host audits from our customers.



Redundant manufacturing sites in both the US and India mitigate risk of supply chain disruption.



We use the highest quality raw materials available which ensures our solutions are reliable, consistent, and effective.



We meet our promises and our on-time, error-free delivery ensures that you get what you want, when you need it.



INDUSTRY CERTIFICATIONS

- ▶ ISO 9001:2015 Registered
- ▶ GFSI FCCS 22000 Certified
- ▶ 21 CFR Parts 210-211 (cGMP) compliant
- ▶ Certified for EU 10/2011 on food contact



We use food and pharmaceutical grade materials and conduct testing to verify our sorbent formulations are free of contaminants.



We have strict quality control on incoming raw material, in-process checks, and finished goods to prevent product defects.



As a Lean manufacturing company, we are constantly improving our processes to provide the best service to our customers.



StripPax[®] Sorbent/Desiccant Packets

Large Adsorption Capacity, Compact Packet

StripPax are compact, durable, non-dusting packets which can be custom designed in a variety of sizes and sorbents (silica gel, indicating silica gel, molecular sieve, activated carbon and blends) to meet your specific packaging needs.

The packet occupy little space within the packaging yet have a high moisture adsorption capacity.

Superior Construction Makes StripPax[®] the Best Choice

StripPax soft flexible packets will not damage tablets or capsules. Made with medical-grade Tyvek[®], an extremely durable, non-woven material made from 100% pure high-density polyethylene fibers. Tyvek[®] offers superior

strength and has a high water vapor transmission rate, making the packets virtually puncture proof and eliminating the risk of leakage while allowing for the easy passage of moisture and gasses.



1 gram



2 gram



3 gram

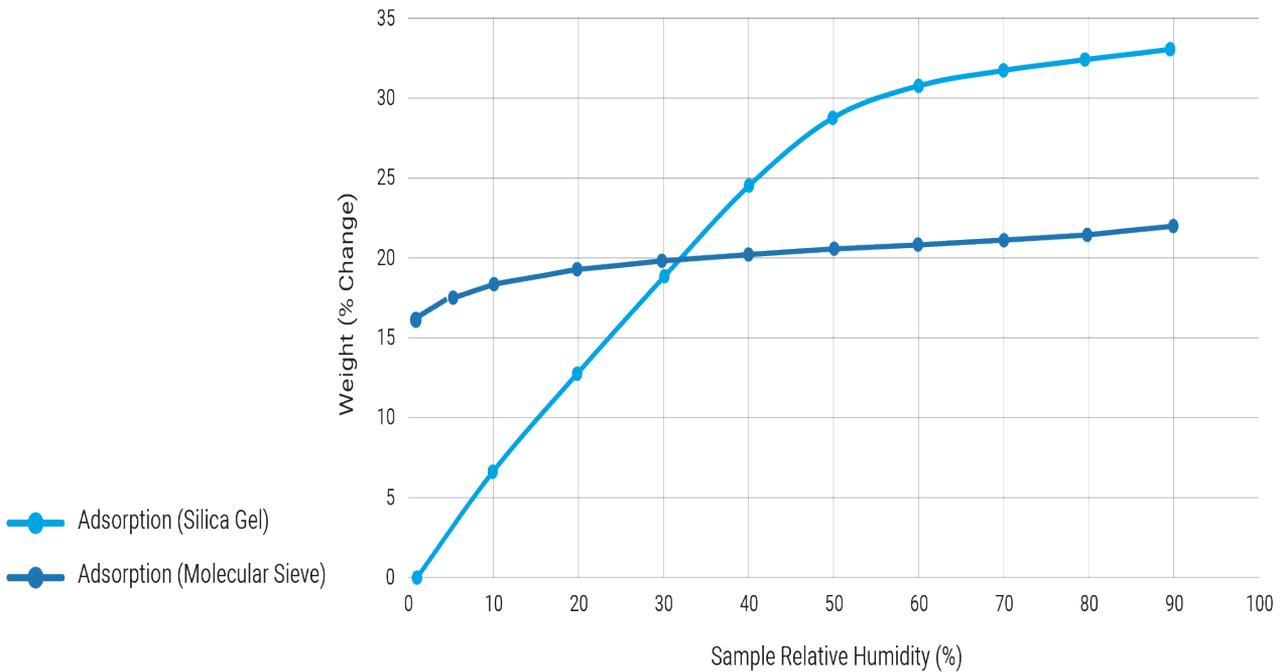


StripPax Packets Data Facts

- Low-profile, compact shape
- Durable and virtually puncture proof
- Highly Permeable
- Non-dusting, lint-free
- Available in wide variety of sizes and sorbents
- FDA approved (21 CFR-compliant) materials
- Type III Drug Master File (DMF) on file
- Removes possibility of damage from hard canisters

Adsorption/Desorption Isotherm Comparison (25°C)

Silica Gel / Molecular Sieve 4A



StabilOx[®] Specialty Oxygen Absorbers

StabilOx[®] Oxygen Absorbers Eliminate Oxygen For Better Product Stability

Achieving stability in pharmaceutical formulations or medical devices requires a difficult balance between increasingly complex variables. Success is a vital prerequisite to a new drug reaching the marketplace.

StabilOx Oxygen Absorber helps achieve this without toxic packaging components or expensive drug product formulation changes. StabilOx Oxygen Absorbers provide a simple solution that resides inside the packaging instead of the drug product.

StabilOx Oxygen Absorbers effectively reduces package headspace oxygen levels

while managing headspace moisture and drug product free moisture to reduce or eliminate oxidative degradation. StabilOx Oxygen Absorbers accomplish oxygen absorption while managing the drug product's free moisture levels and related molecular mobility associated with most chemical degradation pathways.

StabilOx Oxygen Absorbers are offered in a variety of formats and sizes to fit your needs. We support your packaging and formulation teams to ensure that you get the right StabilOx Oxygen Absorber for your needs.

StabilOx[®] Oxygen Absorbers Deliver a Level of Protection Not Available with Standard Oxygen Absorbers

Traditional inorganic oxygen absorbers rely on the irreversible oxidation of the scavenger. Since the reaction requires moisture, the moisture must be provided in the scavenger itself, the product, or from the package environment. StabilOx Oxygen Absorbers provide its own moisture to initialize the oxygen removal process from the package.

If oxygen and moisture continue to permeate the packaging, it then relies on package moisture ingress for continued oxygen absorption while establishing an optimal equilibrium relative humidity in the package head space. This is critical in retaining drug performance, stability, and integrity.





Format Choices Offer Flexibility

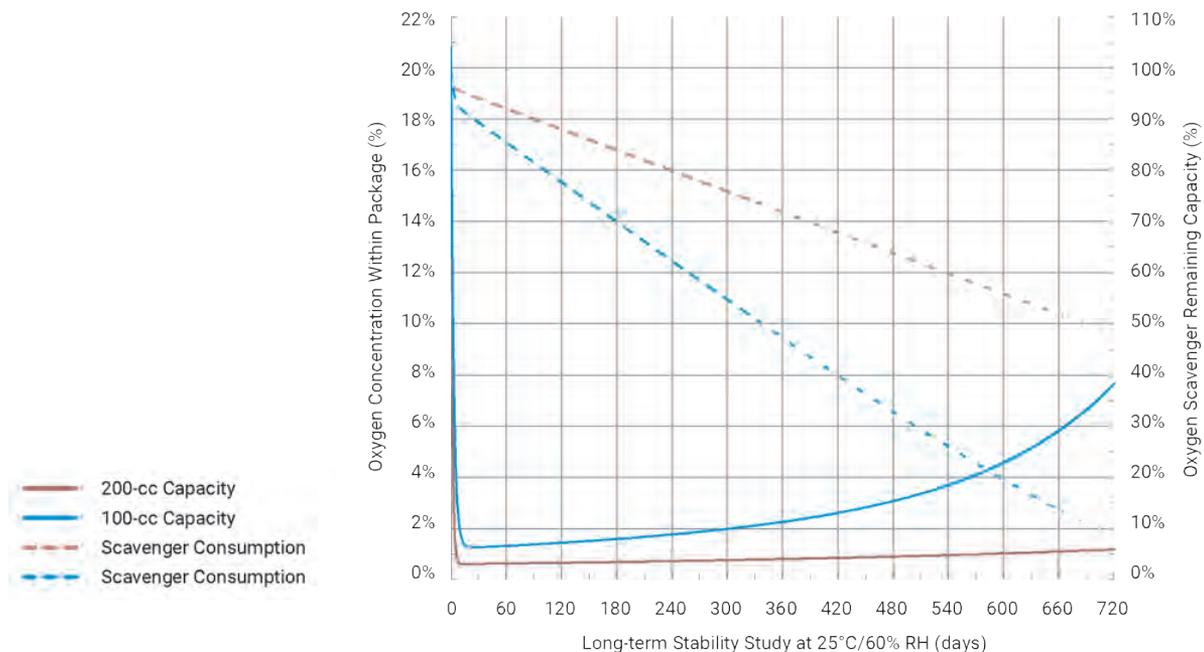
The packets are made from uncoated, welded, medical-grade Tyvek® fibers. Tyvek® offers superior strength, making the packets virtually puncture proof and eliminating the risk of leakage and product contamination.

- StabilOx Packets offer a rugged, easily-automated product that supports a wide-range of applications and provide nearly seven times the oxygen absorption capacity of competitive packets.
- StabilOx Canisters are fully compatible with high-speed packaging lines providing nearly seven times the oxygen absorption capacity of competitive canisters.



Long-Term Stability SimulOx™ Simulation

75-cc Bottle with Drug Product and Oxygen Absorber



Multiform CSF[®] Canisters

Like Traditional Canisters, But Better

Multiform CSF canisters are available in silica gel, activated carbon, and respective blends. With equivalent adsorption rate and capacity as traditional, loose-fill canisters, Multiform

CSF canisters control moisture and volatiles to provide the physical and chemical stability of your drug product, medical device, or dietary supplement.

Compressed Format Delivers Quality and Saves Space

Unlike traditional canisters that are filled with a loose desiccant, Multiform CSF canisters utilize a unique compressed, solid-form design with pharmaceutical grade coating. With non-dusting and non-separating properties,

the canisters deliver the quality you need, and their unique design can offer cost savings over traditional, larger loose-fill canisters.

Multiform CSF Canisters DataFacts

- Available in silica gel, activated carbon, or blends
- Available in three sizes (C-1, C-2 & C-3) to meet needs for various adsorption rates and capacity
- High quality, virtually indestructible
- Compressed, solid-form design
- Pharmaceutical grade HPMC coating
- Non-dusting
- Non-separating
- Can be dispensed from conventional canister dispensers with no tooling changeover
- FDA approved (21 CFR-compliant) materials
- Type III Drug Master File (DMF) on file





Market Applications

Pharmaceutical and Dietary Supplements:

- Drop-in canister for bottle presentations
- Snap-fit into closure for bottle presentations

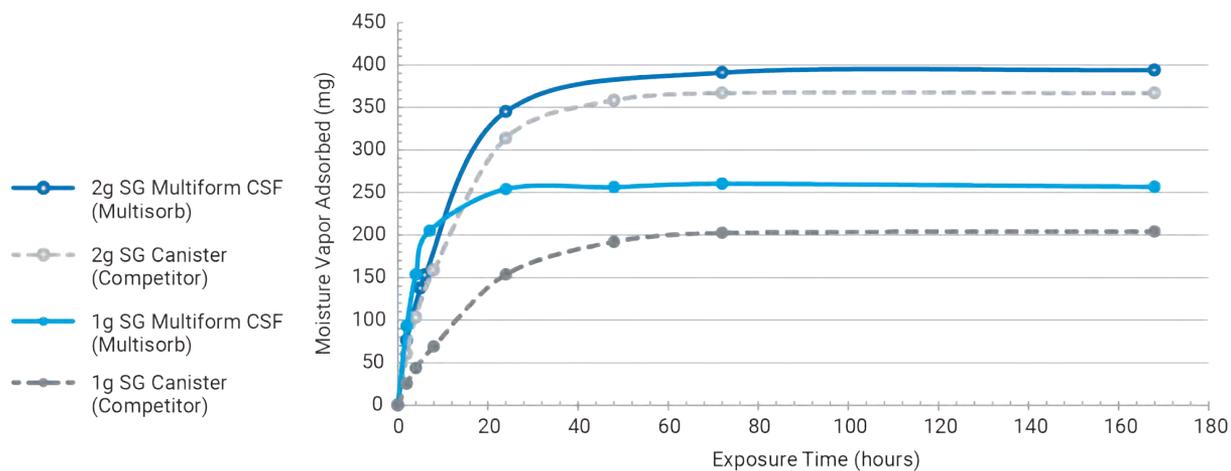
Medical Devices:

- Drop-in canister for pouch and tray presentations
- Fit-in canister for molded presentations



Moisture Vapor Adsorption Capacity (25°C/40% RH)

Multiform CSF C-1 & C-2 Silica Gel (SG) Canister (Multisorb) vs. Traditional SG Canister (Competitor)



THE MULTIFORM CSF CANISTER ADVANTAGE

A variety of sizes that run on all canister dispensers

These sustainability numbers do not include the decrease in plastic consumption for pails utilized as primary packaging of the sorbents (Multisorb uses foil pouches and cartons). This would be additional plastic reduction.



“Multisorb is committed to reducing its environmental impact by proactively managing the sustainability of its products, processes, and supply chain.”



A Space Saver With Outstanding Performance

1G

731kg Less

plastic per 1 million pieces

1.5G

566kg Less

plastic per 1 million pieces

2X

2x the absorption of similarly sized canisters

2G

1,030kg Less

plastic per 1 million pieces

3G

1,355kg Less

plastic per 1 million pieces



Buy one 2g CSF canister instead of two 1g canisters



ACCELERATE YOUR PRODUCTIVITY



Dispense Up to 300 Packets Per Minute



Easy Integration into Existing Packaging Lines



Global Support and Field Service

MULTISORB DISPENSING SOLUTIONS

Implementing a desiccant into your packaging operations should never be a bottleneck. Multisorb sorbent dispensers integrate easily into existing lines and work at rates up to 300 packets per minute. If you opt to use a Multisorb dispenser in conjunction with Multisorb sorbents you will receive best in class field service that can troubleshoot both the sorbent packet and dispenser.



APA-2000



APA-2800

INVEST RIGHT THE FIRST TIME



Seamless integration into any packaging line



Double drop at high speeds for more efficiency

LOWEST TOTAL COST OF OWNERSHIP

Look beyond the short term investment and buy the right equipment the first time. Multisorb dispensers operate at speeds up to 300 packets per minute and are remarkably reliable. Multisorb dispensers allow our customers to maximize their productivity and scale over time. We offer a one-stop solution for both the sorbent and the dispenser. Our speed and efficiency is backed by our service and support.



“We needed to expand operations, Multisorb’s dispensing system helped us save costs, increase efficiency and add production line flexibility”

Delivering results to a major pharmaceutical innovator

UNDERSTANDING OUR CUSTOMERS NEEDS

Sustainability progress is being driven by market forces domestically & globally.

- Many of our customers are pushing sustainability objectives into their supply chain and are expecting Multisorb to develop a sustainability plan as a part of ongoing supplier qualifications & eligibility for new business.
- Pharma / life science companies are banding together for group sustainability.
- Food & Pharma packaging is a primary focus to reduce single use waste and move from plastic to paper.

Customers are asking for published sustainability plans, goals, and actions.

- While many organizations do not have a definition for sustainability, they know it when they see it.
- We share our Ecovadis scorecard to customers who want to know our score, evaluations, goals, and progress.



MULTISORB ENVIRONMENTAL SUSTAINABILITY PLAN

SUSTAINABILITY PLAN



Reduce hazardous waste generation and disposal



Reduce use of plastics in our products and packaging systems



Reduce waste to landfill



Reduce energy consumption

Timeline

2022

- Policy development
- Communication
- Benchmarking
- KPI Establishment
- Ecovardis Action Plan

2023

- Align KPI goal setting and monitoring to customer requirements
- Development of project framework

2024

- Assess performance and improvement opportunities
- Active Management and Reporting

2025

- Sustainable thinking is built into our culture and everyday actions

MULTISORB PREFERRED PARTNERSHIP PROGRAM

Your customers put their best into their products. They don't want to stop when it's time to package them for consumers. Here at Multisorb, we make premium desiccants and absorbers. We've earned the trust of the most critical and cutting-edge manufacturers around the world. We'll earn the trust of your customers, as well.

Why Be a Preferred Partner?

- Risk mitigation with a global leader and highly credible second source
- Experienced quality group with intimate knowledge of pharmaceutical regulations
- solving, innovation and selection
- Manufacturing the most reliable dispensing equipment with creative capital options
- Automated & Efficient lean manufacturing production facilities
- Cost containment & cost reduction initiatives
- The challenge of sustainability and how Multisorb collaborates to meet these challenges
- Broad and proven product portfolio with industry expertise
- Dedicated resources for business management, reviews and reporting.
- Multi-year Master Supply Agreements, providing priority treatment & continuity of supply.





PREFERRED PARTNERSHIP PROGRAM

Partners in Progress



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