Food & Beverage Processing

In the food and beverage industry, INDSORB granular and powdered activated carbon plays an essential role in ensuring the quality and purity of products. Powdered activated carbon is widely used for sugar decolorization, where it removes unwanted colors and impurities, enhancing the final product's appearance and quality. INDSORB powdered carbon also plays a significant role in edible oil refining, removing contaminants that can affect taste and stability. In beverages, whether alcoholic or non-alcoholic, INDSORB's granular activated carbon is used to purify water and improve taste, ensuring that beverages have the desired clarity and freshness. By removing impurities that could impact flavor, shelf life and product quality, INDSORB powder and granular carbon helps the food and beverage industry meet high purity standards of their products, ensuring their consumers receive safe, high-quality products consistently.

Incinerated Flue Gas Treatment

INDSORB's activated carbon solutions are widely used in incinerated flue gas treatment, particularly for the removal of mercury, dioxins and siloxanes. In industrial applications such as petrochemical, pharmaceutical, waste incineration and chemical manufacturing, the incineration process can produce harmful emissions that must be treated before being released into the atmosphere. INDSORB's activated carbon is designed to capture and adsorb toxic substances such as mercury, which is harmful to both human health and the environment. Additionally, dioxins and siloxanes, which are commonly found in industrial gases, are efficiently removed using INDSORB's specialized carbon products. By using INDSORB for flue gas treatment, industries can ensure compliance with environmental regulations, reduce their carbon footprint and contribute to a cleaner and healthier environment.

Applications in Petrochemical Industries

In the petrochemical industry, INDSORB is instrumental in ensuring the purity of gases and liquids throughout various processes, such as refining, distillation and solvent recovery. The activated carbon effectively removes impurities like sulfur compounds, volatile organic compounds (VOCs) and other contaminants, ensuring high-quality outputs and improving the efficiency of chemical reactions. By using INDSORB for gas and liquid purification, petrochemical plants can optimize their processes, reduce downtime and achieve better product quality while adhering to environmental standards.

Applications in Pharmaceutical Industries

In the pharmaceutical industry, INDSORB powder carbon plays a critical role in ensuring the purity of active pharmaceutical ingredients (APIs) and excipients. The activated carbon is used in applications such as solvent recovery, purification of drug intermediates and removal of trace contaminants from raw materials. By removing these unwanted substances, INDSORB helps pharmaceutical manufacturers produce safe, effective and high-quality products. The pharmaceutical industry relies on INDSORB's solutions to meet stringent regulatory requirements and maintain the integrity of their products throughout the manufacturing process.

INDSORB® complies with European Norms for Drinking Water Applications

- European Standard UNI EN 12903 Products used for the treatment of waters intended for human consumption – Powdered Activated Carbon
- European Standard UNI ISO EN 12915 Product used for treatment of water intended for human consumption – Granular Activated Carbon

Conclusion

INDSORB, Ion Exchange's premium range of activated carbon solutions, represents a perfect blend of innovation, efficiency and sustainability in water process separation & purification and air purification. With its availability in powdered, granular and pelletized forms, INDSORB caters to a wide range of industries, ensuring superior performance in municipal water and waste treatment, industrial processes, food & beverage purification, petrochemical applications, pharmaceutical production and environmental compliance.

Backed by Ion Exchange's six decades of expertise in separation and purification by providing widest range of INDION® ion exchange resin and polymeric adsorbents (refer website www.ionexchangeglobal.com), membrane (www.hydramem.com) and system designs and MAPRIL's commitment to offer world-class solutions for advanced water and environmental management, INDSORB is a step towards a cleaner, safer and more sustainable future. Whether it's enhancing water quality, ensuring air purity, or enabling efficient separation and recovery processes, INDSORB delivers unmatched reliability and value. Choose INDSORB for cutting-edge activated carbon technology that enriches lives and protects the environment.

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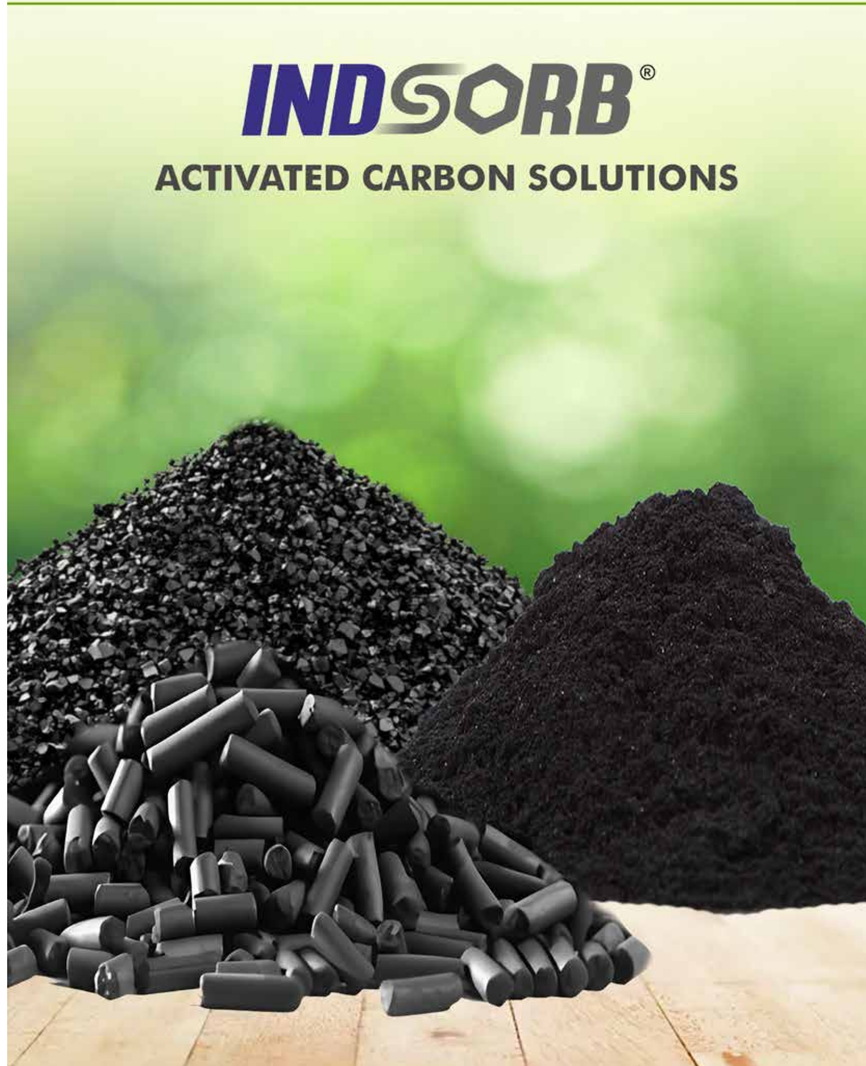
MAPRIL - a Group Company of ION EXCHANGE Refreshing the Planet

INDSORB®

ACTIVATED CARBON SOLUTIONS



INDSORB® Activated Carbon Solutions by MAPRIL

MAPRIL is a subsidiary of Ion Exchange (India) Ltd., in Portugal. It specializes in providing advanced solutions for water treatment, environmental management and supply of Specialty Industrial Chemicals with increased focus on both industrial and municipal water and waste treatment applications. MAPRIL plays a vital role in Ion Exchange's expansion into European and North African markets.

INDSORB®

MAPRIL, is excited to introduce INDSORB, a premium range of activated carbon solutions, to the market. MAPRIL brings INDSORB as a high-performance Activated Carbon range designed to meet the diverse needs of separation and purification to its industrial and municipal customers. INDSORB offers advanced solutions for water and air purification, separation and adsorption, catering to sectors such as food and beverage, petrochemicals, pharmaceuticals and municipal water treatment. Through this introduction, MAPRIL aims to complement its innovative, sustainable and cost-effective solutions that enhance water quality, ensure environmental compliance and premium purification solutions thereby contributing to a cleaner, healthier and sustainable environment.

Purifying Water & Air, Enriching Lives!

INDSORB, MAPRIL's premium range of activated carbon solutions, is engineered to deliver superior purification, separation and adsorption across industries. With a commitment to sustainability and innovation, INDSORB aims to help industries, municipalities and communities achieve cleaner water and air efficiently and cost-effectively.

Why Choose INDSORB®?

- Customizable Grades – A wide range of granular, powdered and pelletized carbons tailored for diverse applications in municipalities and industries.
- Global Expertise, Local Support – Backed by Ion Exchange's six decades of experience in water, environment management, separation and purification.
- Regulatory Compliance – Meeting stringent industry standards for water, air and industrial applications.

Source & Activation of Indsorb Activated Carbon

INDSORB activated carbon is derived from wood, coal, coconut shell charcoal and lignite, each offering unique adsorption properties. The activation process enhances porosity and adsorption capacity through physical activation (high-temperature treatment with steam or CO_2) or chemical activation (using agents like phosphoric acid or zinc chloride).

Coconut shell carbon has high micro-porosity, ideal for water purification and odor removal.

Wood-derived carbon excels in organic contaminant removal.

Coal-based carbon offers a balanced pore structure for industrial water and gas treatment.

Lignite-based carbon has high meso-porosity, making it effective for air and gas purification

With diverse raw materials and advanced activation techniques, INDSORB ensures superior adsorption efficiency across industries.

Widest Range of Activated Carbon

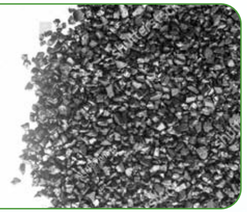
INDSORB Activated Carbon Solutions are available in three distinct forms: powdered, granular and pelletized. Each form is designed to cater to specific industrial applications, ensuring that the highest level of performance is achieved for water and air purification and various separation processes.

Powdered Activated Carbon (PAC)

Powdered Activated Carbon (PAC) is finely ground and is highly effective in removing contaminants from liquids and gases. It is typically used in water treatment plants, wastewater treatment and air purification processes, where rapid adsorption is needed. PAC is ideal for applications such as taste and odor removal, dechlorination and organic matter removal in municipal and industrial water treatment. Its small particle size allows it to offer a large surface area for faster adsorption of pollutants, making it an efficient solution for immediate purification needs.

Granular Activated Carbon (GAC)

Granular Activated Carbon (GAC) is commonly used in applications where prolonged contact time between the carbon and the contaminants is required. GAC is ideal for continuous flow systems such as water filtration in industrial and municipal plants. It is widely used for drinking water treatment, effluent treatment and air purification, where long-lasting performance is critical. GAC's larger particle size compared to PAC allows for efficient flow rates and prevents clogging, making it the preferred choice for large-scale, high-volume filtration systems.



Pelletized Activated Carbon

Pelletized Activated Carbon is designed for specific applications that require low-pressure drop and high mechanical strength. Its cylindrical shape makes it well-suited for fixed bed applications in air and gas purification systems, including flue gas treatment and solvent recovery. The pelletized form is also effective in removing mercury, siloxanes and volatile organic compounds (VOCs) in industrial exhaust systems. Its durability and structure make it an excellent choice for applications with high mechanical and thermal stresses, offering long operational life and minimal maintenance.

Each form of INDSORB activated carbon-powdered, granular and pelletized-is designed to meet the unique requirements of various industries, ensuring optimal performance, cost-effectiveness and environmental sustainability.

Applications of INDSORB®

Dechlorination for Municipal and Perfluoroalkyl & Polyfluoroalkyl Substances (PFAS) Organic Removal (Taste/Odour)

INDSORB's granular activated carbon solutions are highly effective in the dechlorination of municipal and industrial water, ensuring the removal of harmful chlorine, organic contaminants and PFAS that can affect drinking water quality. These not only improves the water's quality but also enhances its taste and odor, making it suitable for both municipal water treatment facilities and industrial applications where high-quality water is crucial.
Granular activated carbon (GAC) effectively removes long-chain PFAS like PFOA and PFOS through adsorption, using its microporous structure and hydrophobic interactions. Coal-based GAC is more efficient, with effectiveness depending on contact time, water quality and PFAS type.

Industrial Applications – Dechlorinated Water

In industrial settings, water is often treated to meet specific standards for various processes. INDSORB's granular activated carbon solutions are vital for the dechlorination of water, removing chlorine that could otherwise interfere with sensitive equipment and downstream industrial processes like membranes, resins, etc. Whether it's for power plants, chemical manufacturing, or food processing, INDSORB helps industries meet water quality standards while ensuring operational efficiency.
By removing chlorine and other chemicals, INDSORB protects equipment from corrosion and damage, thereby extending the life of critical assets. The removal of organic pollutants in addition to (excess) chlorine also helps extend the life of downstream equipment, such as membranes in reverse osmosis systems, contributing to the overall efficiency of the water treatment process.

Purification & Separation of Process Streams

INDSORB's powdered activated carbon solutions are not just limited to purification but also play a key role in the separation processes used in various industrial process applications. The carbon is highly effective in adsorbing contaminants from gases, liquids and solids, helping industries purify and separate substances with high precision. Whether used in the chemical, petrochemical, or pharmaceutical applications, INDSORB's activated carbon solutions help industries achieve greater separation efficiency in processes including solvent recovery, metal purification and chemical synthesis. The versatility of INDSORB's products, combined with
their ability to remove impurities and separate desired compounds, makes them a critical component in industrial purification processes. By offering tailored solutions that meet specific industry needs, INDSORB ensures that companies can achieve the highest standards of quality and performance in their products.