



# TECHNICAL DATASHEET

## PetroSorb™ HS-D

### Activated carbon for industrial liquid phase processes

PetroSorb™ HS-D is an extremely high purity, washed granular activated carbon manufactured by steam activation. This activated carbon is produced principally for use in condensate recovery water treatment systems requiring low conductivity and exceptionally strict control of the levels of silica content present in the treated water. PetroSorb™ HS-D exhibits a high capacity for dissolved oils and hydrocarbons that pass into the condensate during recirculation and prevents the deposition of these contaminants on downstream equipment. PetroSorb™ HS-D is available in a variety of particle size distributions to suit all hydraulic requirements.



#### SPECIFICATION\*

Iodine adsorption	min. 1000 mg/g
Moisture content, as packed	max. 5 %
Apparent density	min. 450 kg/m <sup>3</sup>
Total ash content	max. 1 %
pH	5 - 7
Ball pan hardness	min. 97 %
Silica release (after 10BV) <sup>†</sup>	<100 ppb

#### TYPICAL PROPERTIES\*

Iodine adsorption	1020 mg/g
CTC activity	55 %
Methylene blue adsorption	130 ml/g
Surface area (BET)	1050 m <sup>2</sup> /g
Apparent density	500 kg/m <sup>3</sup>
Backwashed and drained density	425 kg/m <sup>3</sup>

\* SPECIFICATIONS AND TYPICAL PROPERTIES ARE PRODUCED USING JACOBI CARBONS' TEST METHODS. THEY ARE LISTED FOR INFORMATIONAL PURPOSES ONLY AND NOT TO BE USED AS PURCHASE SPECIFICATIONS. SALES SPECIFICATIONS CAN BE OBTAINED FROM YOUR JACOBI CARBONS TECHNICAL SALES REPRESENTATIVE AND SHOULD BE REVIEWED BEFORE PLACING AN ORDER.

<sup>†</sup>SILICA RELEASE FOR THIS TYPE OF ACTIVATED CARBON IS STATED FOLLOWING COMMISSIONING OF THE GAC BED IN ACCORDANCE WITH THE INSTRUCTIONS ISSUED BY JACOBI CARBONS WITH THE SPECIFIC LOT NUMBER OF MATERIAL SUPPLIED.

#### Features and Benefits

- Rapid adsorption kinetics
- High activity adsorbent
- Microporous product
- Very low silica leach
- High mechanical strength
- Good adsorption capacity

#### Available Particle Sizes

- 8x18 mesh (2.36 - 1.18 mm)
- 8x30 mesh (2.36 - 0.60 mm)
- 10x20 mesh (2.00 - 0.85 mm)
- 12x40 mesh (1.70 - 0.43 mm)
- 20x40 mesh (0.85 - 0.425 mm)
- Other particle sizes considered on request

#### Standard Packaging

- 25 kg sack (55 lb)
- 500 kg bulk bag (1100 lb)
- Bulk tanker
- Other packing considered on request



Polypropylene liner-free FIBCs (super sacks), two bags per pallet



### EFFECTS OF EXCESS SILICA RELEASE

All activated carbons contain a limited amount of soluble minerals within the ash (non-carbon content) present in the product. This degree to which this soluble matter can be released depends on the characteristics of the liquid being treated; such as temperature, pH and buffering capacity.

Some materials such as silica can cause issues with downstream processes. In condensate recovery, two effects are recognised:

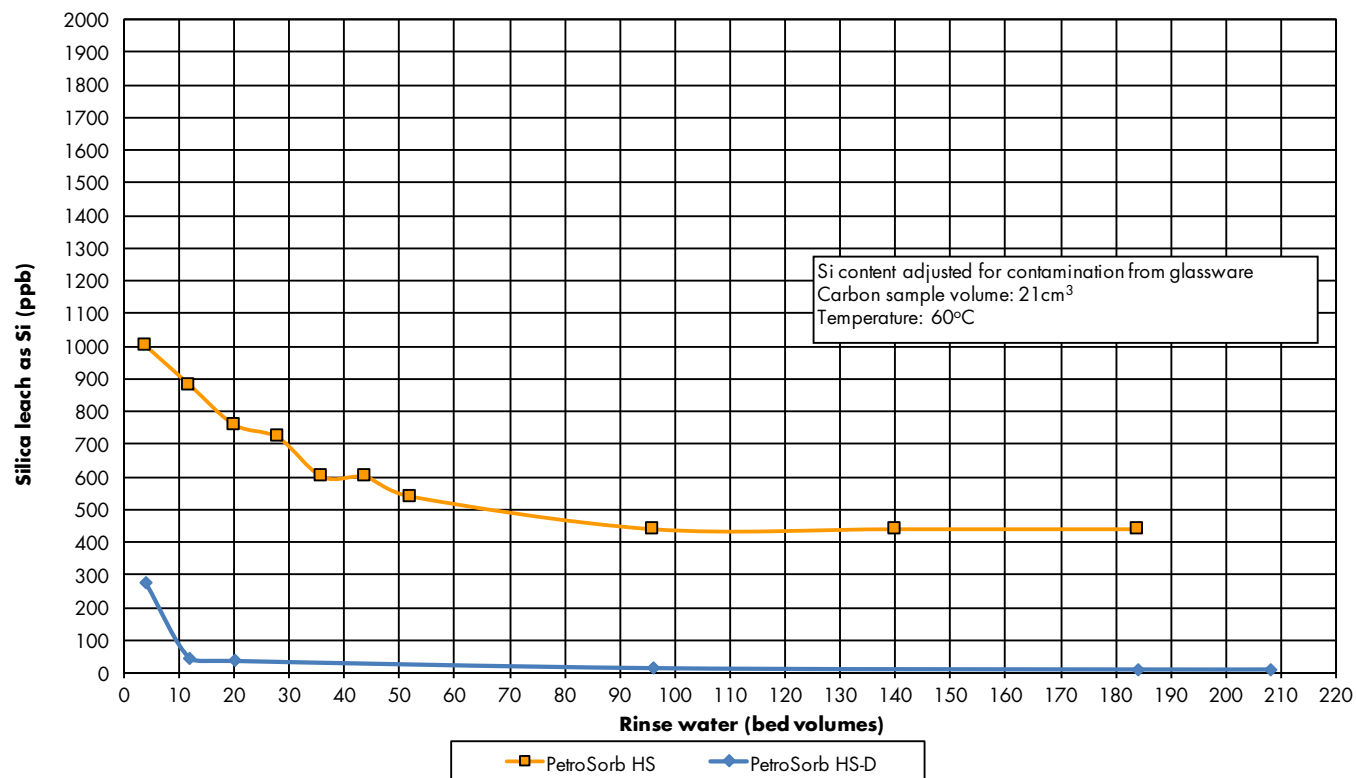
- The effectiveness of downstream ion exchange resins to remove metals is compromised as the selective uptake of silica occurs;
- The precipitation of silica on pipe work, heat exchangers and turbine blades in energy generation equipment.

### LOW SILICA RELEASE ACTIVATED CARBON

Silica itself is the prime constituent of the ash content of all activated carbons, so logic dictates that the reduction in ash content will improve the silica release characteristics. The reduction in ash content is normally achieved by acid washing the activated carbon, however, this is often ineffective in reducing silica, and removes other more soluble constituents.

A unique and novel process of treatment of the activated carbon, developed by Jacobi Carbons addresses this issue. It builds on the selection of low ash coconut shell based product, to manufacture a product with extremely low ash content and minimal residual soluble silica at all pH ranges. This permits the use of PetroSorb™ HS-D in the most arduous of conditions found in condensate streams today.

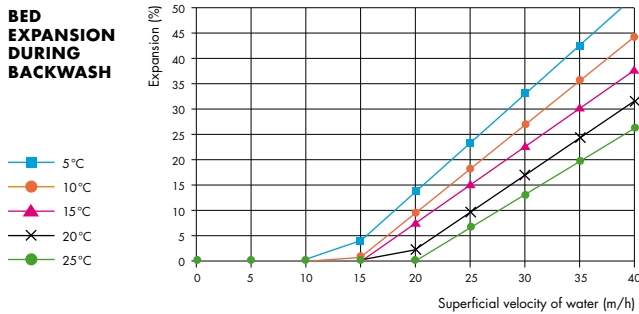
Fig 1. Comparison of standard acid washed coconut shell based carbon with PetroSorb™ HS-D



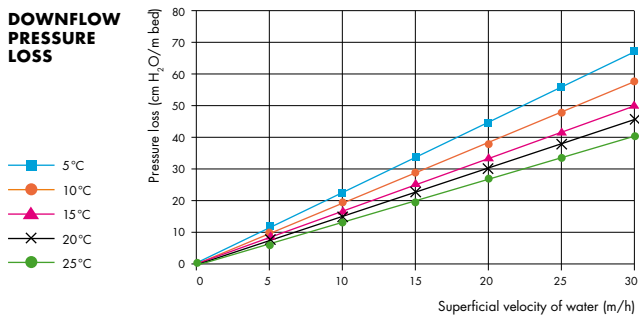


## PetroSorb™ HS-D 8x30 mesh

### BED EXPANSION DURING BACKWASH

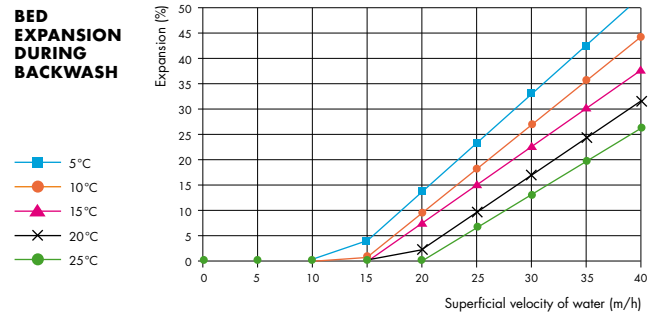


### DOWNFLOW PRESSURE LOSS

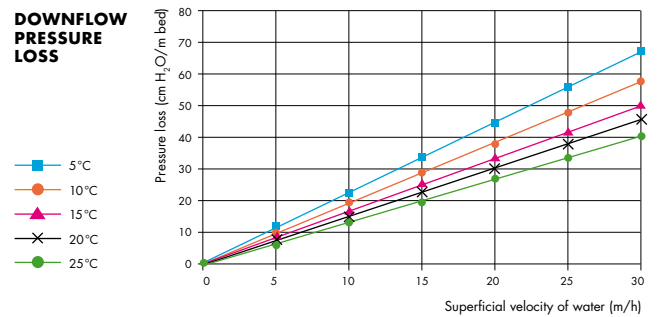


## PetroSorb™ HS-D 10x20 mesh

### BED EXPANSION DURING BACKWASH

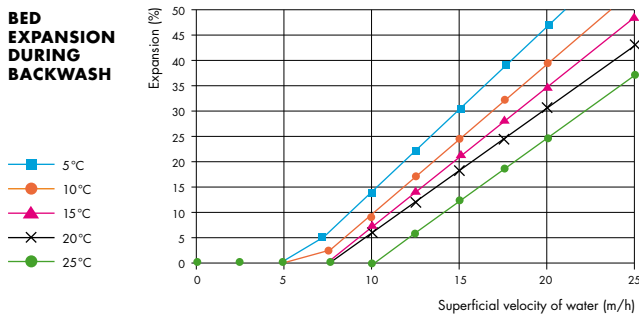


### DOWNFLOW PRESSURE LOSS

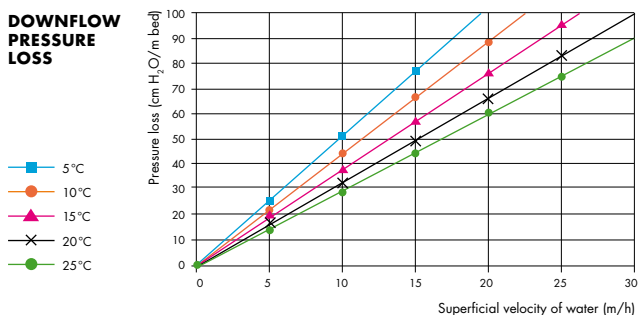


## PetroSorb™ HS-D 12x40 mesh

### BED EXPANSION DURING BACKWASH



### DOWNFLOW PRESSURE LOSS



Bed expansion and pressure loss curves are provided for the most commonly used particle sizes in water. Charts are available for all particle sizes on request, and for fluids of various viscosities.

For more information or to contact Jacobi visit: [www.jacobi.net](http://www.jacobi.net)

## PRODUCTION CAPABILITY

Jacobi Carbons operates multiple facilities for the manufacture of activated carbons. These production plants are strategically located close to market and raw material sources. With an annual output in excess of 70,000 metric tonnes, Jacobi Carbons is able to supply product to all locations around the globe. All production units are certified according to internationally recognised standards (ISO9000 & ISO14001). Quality control is consistent throughout the group of companies and goods are always shipped in compliance with customer specifications.

## CARBON APPLICATION KNOWLEDGE

The supply of activated carbon products is supported by an industry-leading technical support service. Our in-house expertise extends over many years of practical experience in the design and utilisation of activated carbon in a variety of applications. Jacobi Carbons can assist in the design, specification and method of use of our products to achieve the optimum treatment outcome required. Our laboratory facilities support our product portfolio with an extensive library of technical data.



**NOTICE** Due to the progressive nature of the Jacobi Carbons Group and the continually improving design and performance of our products, we reserve the right to change product specifications without prior notification. The information contained in this datasheet is intended to assist a customer in the evaluation and selection of products supplied by Jacobi Carbons. The customer is responsible for determining whether products and the information contained in this document are appropriate for customer's use. Jacobi Carbons assumes no obligation or liability for the use of the information in this datasheet, no guarantees or warranties, expressed or implied, are provided. Jacobi Carbons disclaims responsibility and the user must accept full responsibility for performance of systems based on this data.

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