Honeycomb Activated Carbon (High Performance Type)
Technical Data Sheet (TDS)

1. Product Description

Honeycomb Activated Carbon is an extrusion-molded monolithic carbon block made from high-activity powdered activated carbon using a proprietary two-step activation process. This structure provides uniform channels, high geometric surface area, and low pressure drop, enabling efficient adsorption of VOCs and gaseous pollutants. Available in both water-resistant and non-water-resistant grades, and supports various chemical impregnations for enhanced functionality.

2. Typical Physical & Chemical Properties

Item	Unit	HYHC-55	HYHC-65	HYHC-75
Bulk Density	kg/m³	300 ± 50		
CCl_4 Adsorption (CTC)	%	55 – 60	60 – 70	70 – 80
Iodine Number	mg/g	≥ 500	≥ 600	≥ 800
Specific Surface Area	m²/g	≥ 600	≥ 750	≥ 900
VOC Adsorption Capacity	kg/m³	≈ 80	≈ 120	≈ 150
Compressive Strength (Axial)	MPa	≥ 0.9		
Compressive Strength (Radial)	MPa	≥ 0.3		
Pressure Drop	Pa	≤ 490 (at 600 mm bed depth, 0.8 m/s face velocity)		
Optional Impregnations	–	H_2S, NH_3, HCHO, O_3, and custom options		

3. Structure & Dimensions

- Standard block: 100 × 100 × 100 mm (±3 mm)
- Optional sizes: 100 × 100 × 50 mm / 100 × 100 × 200 mm (Customizable)
- Cell density (CPSI): Standard 100; options 25, 50, 150, 200 CPSI
- Wall thickness: 0.5 – 1.0 mm
- Filter form factor: Single or modular honeycomb blocks in metal or engineering-plastic frames

4. Recommended Applications & Operating Conditions

Suitable for adsorption of VOCs (e.g. toluene, xylene, ethyl acetate, IPA, NMHCs). After impregnation, applicable for H_2S, NH_3, formaldehyde, and ozone removal.

- **Industries:** Painting/coating, automotive, electronics, fine chemicals, pharmaceuticals, furniture, printing, plastics.
- **Face Velocity & Pressure Drop:** 0.5 – 1.2 m/s (recommended). Pressure drop ≈ linear with CPSI & wall thickness.
- **Bed Depth:** 300 – 900 mm (common value 600 mm).
- **CPSI Selection:** 50–100 (low pressure drop) / 100–150 (balanced capacity).
- **Regeneration Method:** hot air / inert gas / steam at 90 – 120 °C; avoid overheating or open flame.

5. Installation & Handling Guidelines

- Align honeycomb channels parallel to airflow direction to minimize pressure drop.
- Use even load distribution to avoid block damage.
- Prefilter dusty air streams to reduce clogging and pressure rise.
- Use water-resistant grade for humid conditions to maintain capacity.
- Gradually increase airflow during startup and monitor breakthrough.
- Ensure module sealing (leak < 2%) with chemical resistant gaskets.
- Prevent static and dust accumulation in high-temperature systems.

6. Quality Inspection and Testing Standards

Property	Method / Standard
CCl_4 adsorption capacity (CTC)	ASTM D3467 or equivalent
Iodine number	ASTM D4607
Specific surface area	BET method (N_2 adsorption)

Moisture / Ash	ASTM D2867 / ASTM D2866
Pressure drop	Test duct method under specified bed depth & velocity
Compressive strength	Axial and lateral load to failure (ASTM D4179)

7. Packaging, Storage & Transportation

- Single-carton packing: 18 blocks per carton; palletized for shipment.
- Container capacity reference: 20′ GP ≈ 12,960 blocks / 40′ HQ ≈ 32,076 blocks.
- Store in dry and ventilated area; avoid rain, impact, and oxidizers.

8. Safety & Compliance

- Prevent dust explosion through grounding and anti-static measures.
- Use PPE during replacement or regeneration to avoid VOC exposure.
- Comply with GB, HJ, OSHA, and NFPA regulations for ventilation and ignition control.

9. Disclaimer

The data herein are typical values for reference only and do not constitute a guaranteed specification. Users should validate performance under actual conditions.Henan CarbonFresh Activated Carbon Co., Ltd. assumes no responsibility for loss or damage caused by improper use of this information or product.

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