carbonmax
ACTIVATED CARBON

Oil & Gas Activated Carbon Solutions

Advanced Coconut Shell Based Activated Carbon for Gas-Phase, Liquid-Phase and Specialty Oil & Gas Purification

PetroMAX™ Series

www.carbonmaxtech.com

Overview

Carbonmax Advantech offers a focused portfolio of coconut shell based activated carbons and specialty treated carbons for oil and gas purification duties across gas-phase, liquid-phase and guard-bed applications. PetroMAX grades are designed to support removal of organic impurities, VOCs, hydrocarbon vapours, oil carryover, colour bodies and selected sulfur or mercury contaminants when the correct base carbon or specialty impregnated grade is used.

Key Oil & Gas Applications

Gas Phase Applications

VOC and hydrocarbon vapour removal; BTEX and odour polishing; tank vent and vapour recovery systems; natural gas / hydrogen / CO2 process gas polishing; acid-gas polishing only with impregnated or catalytic grades; mercury removal only with sulfur / active-impregnated MRU grades; PSA / TSA only with dedicated adsorbent grades and system-specific testing. Liquid-phase applications: steam condensate polishing; field condensate purification; amine and glycol side-stream purification; hydrocarbon polishing; hydrocarbon sweetening catalyst support where validated with process chemistry.

Liquid Phase Applications

- **Field Condensate Purification**
- **Steam Condensate Polishing**
- **Hydrocarbon Sweetening**
- **Vapour Recovery Units (VRU)**

(Aligned with applications illustrated in Oil & Gas leaflet – pages 2–3)

Carbonmax Oil & Gas Product Range

A. Granular Activated Carbon (GAC) – Gas & Liquid Phase

Product Code	Mesh Size	Typical Use
CMAX-OG-48	4×8	Gas phase AGR, MRU beds
CMAX-OG-830	8×30	Condensate purification
CMAX-OG-1230	12×30	Hydrocarbon polishing
CMAX-OG-1240	12×40	Vapour recovery systems

(Benchmarked against 4×8, 8×30, 12×30, 12×40 technical references)

B. Pelletized Activated Carbon (Optional / Custom)

- 3 mm & 4 mm extruded pellets
- Optimized for low pressure drop
- Suitable for high-velocity gas streams
- Excellent bed stability under vibration

C. Impregnated Activated Carbon (On Request)

- Sulfur-based
- KI / KOH / NaOH / metal-impregnated
- Tailored for H_2S, mercury, and mercaptan removal
- Controlled impregnation to avoid bed overheating

(Based on acid gas removal reference practices)

GENERAL TECHNICAL SPECIFICATIONS

Parameter	Typical Value	Test Method
Iodine Number	900 – 1300 mg/g	ASTM D4607
CTC Activity	50 – 65 %	ASTM D3467
BET Surface Area	950 – 1250 m²/g	ASTM D6556
Apparent Density	0.48 – 0.55 g/cc	ASTM D2854
Moisture Content	≤ 5 %	ASTM D2867
Ash Content	≤ 3 %	ASTM D2866
Hardness	≥ 97 %	ASTM D3802
Extractable pH	6 – 11	ASTM D3838

Performance Advantages

Why Carbonmax for Oil & Gas?

- High adsorption capacity for sulfur compounds, VOCs, and hydrocarbons
- Exceptional mechanical strength minimizes carbon attrition and fines
- Low ash content compared to coal-based carbons
- Consistent pore structure for predictable breakthrough curves
- Stable performance in cyclic PSA operations
- Lower life-cycle cost due to extended bed life
- Sustainably sourced coconut shell raw material

Typical Operating Characteristics

- Suitable for high humidity gas streams
- Compatible with amine plant off-gas
- Performs reliably under high superficial velocities
- Available in dense or loose packing options to optimize pressure drop

(Pressure drop behavior aligned with industry vapor phase curves)

Packaging & Supply

Standard packing: 25 kg PP / HDPE woven bags with PE inner liner for granular grades; 25 kg PE valve sacks or sealed bags for pelletised grades where required; 500 kg FIBC / jumbo bags with liner; palletised export packing available on request; moisture-protected sealed packaging for impregnated AGR / MRU grades; custom packing available on request after technical and safety review.

Sustainability Commitment

Carbonmax Advantech carbons are produced from renewable coconut shells, supporting:

- Lower carbon footprint
- Circular economy practices
- Reduced reliance on fossil-based raw materials

Quality, Safety & Compliance

- ISO-aligned manufacturing practices
- Batch-wise QC testing
- Traceability from raw material to finished product
- Custom testing protocols available for:
  - o H_2S capacity
  - o Mercury adsorption
  - o Breakthrough testing
  - o Pressure drop simulation

Disclaimer

Specifications shown are typical values and may be customised based on application and contract requirements. Actual performance depends on contaminant type, concentration, humidity, temperature, pressure, flow rate, contact time and system design. Users should conduct trials or obtain project-specific technical validation before commercial use.

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