

# HGR<sup>®</sup> 4x10 for Mercury Removal

Granular Activated Carbon

## Description

Calgon Carbon HGR granular activated carbon is a sulfur impregnated carbon. The base carbon is made from select grades of bituminous coal and suitable binders to create the unique pore structure and superior hardness necessary for the intended service. Activation is controlled to impart a pore structure that will both accept substantial quantities of impregnant and maintain access for the gas being treated to the complex pore structure. After activation, the sulfur is distributed in a thin layer over the extensive internal surface area of the carbon. This provides it with the unique properties required for the removal of elemental and organic mercury from natural gas, air, and by-product hydrogen streams.

## The Mercury Removal Process

Mercury removal with HGR activated carbon is an established process for removal of mercury from natural gas air, CO<sub>2</sub>, and various manufacturing off-gases containing elemental mercury. The mercury is removed from natural gas feedstocks to LNG and LPG plants to protect aluminum heat exchangers from corrosion. The exhaust air from recycle, manufacturing operations, or metallurgical processing equipment can be treated to provide an environmentally safe atmosphere for employees and delicate instruments.

The mercury removal process employs a single or dual vessel adsorption system designed to reduce concentrations to <0.01 µg/Nm<sup>3</sup> in the treated gas. During the adsorption process, mercury is attracted to the activated carbon surface where a chemical reaction converts the mercury to mercuric sulfide. The sulfide product is then retained in the pores of the carbon granule. Mercury capacity on HGR activated carbon can be as high as 30% by weight.

Calgon Carbon can design effective HGR carbon systems to handle gas streams up to 160°F and 99% RH. HGR systems treating gas streams above 122°F and 50% RH will result in treated gas mercury concentrations of less than 0.1 µg/Nm<sup>3</sup>. Systems treating gas streams below 122°F and 50% RH will result in mercury concentrations of less than 0.01 µg/Nm<sup>3</sup>. In a properly designed HGR carbon system, the maximum mercury removal performance is not affected by the pressure or the inlet mercury concentration of the gas.

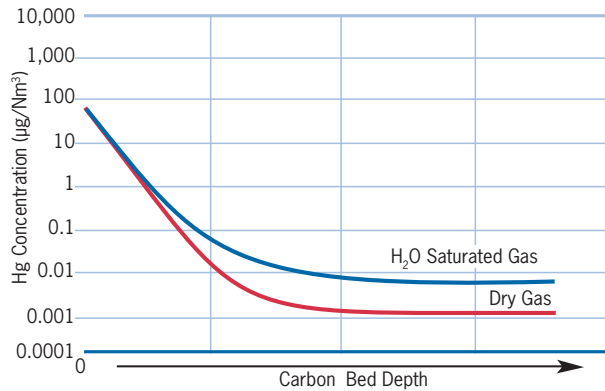
## Packaging

HGR is available in 1,000 lb super sacks.  
It is also available made to order in 225 lb. drums.

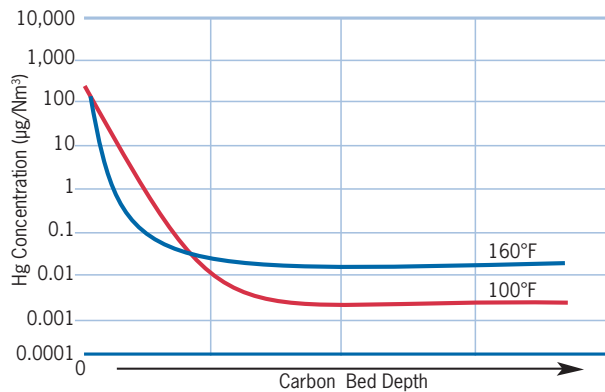
## Specifications HGR

Apparent Density	36 lb./ft <sup>3</sup> (approx.)
Sulfur Content by weight	8-15% (min)
Screen Size by weight, U.S. Sieve Series	
On 4 mesh	8.0% (max)
Through 10 mesh	5.0% (max)

## Impact of Moisture



## Impact of Temperature



## Safety Message

Wet activated carbon preferentially removes oxygen from air. In closed or partially closed containers and vessels, oxygen depletion may reach hazardous levels. If workers are to enter a vessel containing carbon, appropriate sampling and work procedures for potentially low oxygen spaces should be followed, including all applicable federal and state requirements. Please refer to the MSDS for all up to date product safety information.

*Making Water and Air Safer and Cleaner*

[www.calgoncarbon.com](http://www.calgoncarbon.com)



**Corporate Headquarters**  
Calgon Carbon Corporation  
500 Calgon Carbon Drive  
Pittsburgh, PA USA 15205  
800.422.7266  
412.787.6700  
412.787.6713 Fax  
[www.calgoncarbon.com](http://www.calgoncarbon.com)

**European Operations**  
Chemviron Carbon Corporation  
Zoning Industriel C de Feluy  
B-7181 Feluy, Belgium  
+ 32 (0) 64 51 18 11  
+ 32 (0) 64 54 15 91 Fax

**Asia Operations**  
Calgon Carbon Asia Pte Ltd.  
9 Temasek Boulevard  
#26-02 Suntec Tower Two  
Singapore 038989  
+65 6221 3500  
+65 6221 3554 Fax

Your local representative