CAL® 12x40
Granular Activated Carbon

Applications
- Food & Beverage
- Glycerine
- Edible Oils
- Sweeteners
- Industrial Processes

The advantages and economy of CAL systems are widely accepted in the chemical process industries for the decolorization and purification of numerous aqueous and organic liquids. Typical of these are glycerin, urea, monosodium glutamate, organic esters, soda ash, caustic liquors and muriatic acid. It can also be used for some sugar applications.

Description
Calgon Carbon’s CAL is a granular, decolorizing carbon designed for efficient use in fixed or moving beds for the purification and decolorization of many aqueous and organic liquids. The particle size of 12x40 mesh has been selected to give a high rate of adsorption and low resistance to flow with liquids of low to medium viscosity. CAL provides high surface area, large pore volume, high density and a pore structure optimal for the adsorption of color bodies and odor molecules from solutions. This product complies with ANSI/AWWA B604 (2005) and Food Chemical Codex (FCC) (8th Edition) published by the U. S. Pharmacopeia.

Features / Benefits
- Reagglomerated metallurgical grade bituminous coal
- Uniformly activated granules
- High pore volume
- Reagglomeration creates optimal transport pores for faster adsorption
- High mechanical strength and uniform transport pore distribution, resulting in excellent reactivation performance, low attrition loss during handling and minimizing generation of fines in operations requiring backwash
- Pore structure provides a wider range of contaminant removal
- The carbon wets readily and does not float thus minimizing loss during backwash operation

Specifications

<table>
<thead>
<tr>
<th>Specification</th>
<th>CAL 12x40</th>
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</thead>
<tbody>
<tr>
<td>Mean Particle Diameter, mm</td>
<td>0.9–1.1</td>
</tr>
<tr>
<td>Iodine Number, mg/g</td>
<td>1000 (min)</td>
</tr>
<tr>
<td>Molasses Number</td>
<td>230 (min)</td>
</tr>
<tr>
<td>Moisture (As Packaged), wt%</td>
<td>2 (max)</td>
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<tr>
<td>Abrasion Number</td>
<td>75 (min)</td>
</tr>
<tr>
<td>12 US Mesh [1.70mm], wt%</td>
<td>5.0 (max)</td>
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<tr>
<td>&lt; 40 US Mesh [0.425mm] (PAN), wt%</td>
<td>4.0 (max)</td>
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Safety Message
Wet activated carbon can deplete oxygen from air in enclosed spaces. If use in an enclosed space is required, procedures for work in an oxygen deficient environment should be followed.
**Typical Pressure Drop**
Downflow pressure drop through a bed of CAL 12x40

![Graph of Typical Pressure Drop](image)

**Typical Bed Expansion**
Bed Expansion During Backwash of CAL 12x40 with Water

![Graph of Typical Bed Expansion](image)

**Design Considerations**
The flowrate, contact time needed to achieve the desired contaminant removal, liquid viscosity and temperature are all considerations in designing an efficient and cost effective activated carbon system. The pressure drop per ft. of bed depth for CAL 12 x 40 carbon is shown for different liquid viscosities.