

# STI-X

## Pelleted Impregnated Activated Carbon



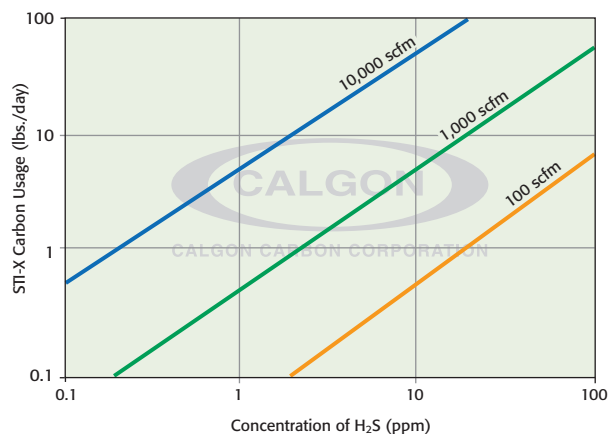
### Description

STI-X is a coal-based pellet carbon designed for the removal of acid gases and odor compounds from air. It is manufactured by high-temperature steam activation followed by chemical impregnation. This carbon is a proven product for many odor control applications, including industrial processes, municipal treatment plants, paper plants, and indoor air filtration. It provides very high capacity for compounds that are not strongly adsorbed by standard carbon, including hydrogen sulfide ( $H_2S$ ), mercaptans, sulfur dioxide, chlorine, and hydrogen chloride.

### $H_2S$ Capacity

Based on testing per ASTM D-6646, the  $H_2S$  capacity specification for STI-X is 0.14 g/cc, or about 25% by weight. The following plot can be used to estimate the rate of use of STI-X carbon as a function of air flow and  $H_2S$  concentration. For intermediate flow rates the usage can be estimated.

### Equilibrium STI-X Usage



### Advantages

Compared to other caustically impregnated carbons, STI-X has several advantages

- Use of a pellet carbon provides a lower pressure drop than granular carbons thereby reducing electrical costs
- Use of a coal-based pellet ensures a high density product with good mechanical properties producing a product that does not breakdown as readily as coconut-based carbons
- STI-X is the most cost-effective caustically impregnated carbon available today

### Specifications

$CCl_4$ by weight	60% (min)
Moisture by weight	15% (max)
$H_2S$ Capacity	0.14 g $H_2S$ /cc carbon (min)
Particle Size	4 mm

The impregnants on this carbon have been shown to decrease the ignition temperature of the carbon. This product passes the United Nations Self-heating Test and is therefore deemed suitable for shipment without concern over its self-heating. However, in some circumstances when the carbon is left open to air and low convective flow of air passes through it, the carbon can self-heat and ignite. Therefore, when a vessel containing carbon is out of service or in storage, care should be taken to prevent convective airflow which can be prevented with the installation of blind flanges on inlet and outlet connections.

### Typical Properties

Ash Content by weight	12%
Ball Pan Hardness	95 (min)

### Design Considerations

STI-X is applied in fixed-bed adsorbers operated in an upflow, downflow, and cross-flow mode. Bed depths typically range from 18 inches (46 cm) to 36 inches (92 cm) at superficial velocities between 50 to 90 feet per minute (0.25 m/s to 0.46 m/s). For effective  $H_2S$  control, the gas stream must contain free oxygen and the stream humidity must be in excess of 10%. For applications where organic compounds (VOC's) must be removed in addition to  $H_2S$ , or where especially long carbon life is desired and potable water is available, Calgon Carbon Corporation recommends the use of its CENTAUR<sup>®</sup> catalytic activated carbon in lieu of STI-X. CENTAUR<sup>®</sup> can be regenerated in place for continued  $H_2S$  removal simply by washing the carbon with water. Ask your Calgon Carbon Corporation Technical Sales Representative for more information on this product.

### Packaging

- 50 lb. bag
- 15 gal. fiber drum
- 55 gal. fiber drum
- 1,000 lb. super sack
- 1,100 lb. super sack

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### 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.

### Limitations of Liability

The Supplier's liability and the Purchaser's exclusive remedy for any cause of action arising out of this transaction, including, but not limited to, breach of warranty, negligence and/or indemnification, is expressly limited to a maximum of the purchase price of spare parts or equipment sold hereunder. All claims of whatsoever nature shall be deemed waived unless made in writing within forty-five (45) days of the occurrence giving rise to the claim. In no event shall the Supplier, for any reason or pursuant to any provision of the warranty, be liable for incidental or consequential damages or damages in excess of the purchase price, nor shall the Supplier be liable for loss of profits or fines imposed by governmental agencies.



CALGON CARBON CORPORATION

Calgon Carbon Corporation  
P.O. Box 717  
Pittsburgh, PA USA 15230-0717  
1-800-422-7266  
Tel: 412-787-6700  
Fx: 412-787-6713

Making Water and Air Safer and Cleaner

Chemviron Carbon  
European Operations of  
Calgon Carbon Corporation  
Zoning Industriel C de Feluy  
B-7181 Feluy, Belgium  
Tel: + 32 (0) 64 51 18 11  
Fx: + 32 (0) 64 54 15 91

Calgon Carbon Asia  
65 Chulia Street  
#37-03 OCBC Centre  
Singapore 049513  
Tel: +65 6 221 3500  
Fx: +65 6 221 3554

### Your local representative