

Iron Removal Media Data Sheet

CQ-IGS® Iron Removal Media

CQ-IGS is capable of reducing iron, manganese and hydrogen sulfide from water through oxidation and filtration.

CQ-IGS is formulated from a glauconite green sand which is capable of reducing iron, manganese and hydrogen sulfide from water through oxidation and filtration. Soluble iron and manganese are oxidized and precipitated by contact with higher oxides of manganese on the **CQ-IGS** granules. The hydrogen sulfide is reduced by oxidation to an insoluble sulfur precipitate. Precipitates are then filtered and removed by backwashing. When the oxidizing capacity power of the **CQ-IGS** bed is exhausted, the bed has to be regenerated with a weak potassium permanganate (KMnO₄) solution, thus restoring the oxidizing capacity of the bed. 1½ to 2 ounces of potassium permanganate, in solution, per cubic foot of **CQ-IGS** is considered sufficient for normal regeneration. It is required to vigorously backwash and regenerate the bed when it is placed in service and before its oxidation capacity is totally exhausted. Operating the bed after oxidation capacity is exhausted will reduce its service life and may cause staining.

ADVANTAGES

- Iron reduction over wide pH range
- Effective reduction of hydrogen sulfide in addition to iron and/or manganese
- No harmful effects from a chlorine feed
- Low attrition for long bed life

PHYSICAL PROPERTIES

- Color: Black
- Bulk Density: 85 lbs./cu. ft.
- Specific Gravity: 2.4-2.9
- Effective Size: 0.30-0.35 mm
- Uniform Coefficient: 1.6
- Mesh Size: 16-60
- Attrition Loss Per Year: 2%

CONDITIONS FOR OPERATION

- Water pH range: 6.2-8.5
- Maximum water temperature: 80°F/26.7°C
- Bed depth: 30 in.
- Freeboard: 50% of bed depth (min.)
- Regeneration: 1.5-2 oz of KMnO₄ by weight per cu. ft.
- Service flow rate: 11 gpm or less
- Backwash flow rate: 5 gpm
- Backwash bed expansion: 40% of bed depth (min.)
- Maximum practical limit of iron (Fe⁺⁺) or manganese (Mn⁺⁺) in raw water: 15 ppm
- Maximum practical limit of hydrogen sulfide (H₂S): 5 ppm

Service Flow Rate

Service flow rate is the **maximum** gallons per minute recommended for obtaining excellent water quality. Exceeding the service flow rate will cause a reduction in the product water quality.

Backwash Flow Rate

Backwash flow rate is the **minimum** gallons per minute recommended for proper reclassification of the media or resin. Insufficient backwash flow rate will cause inadequate media or resin reclassification and, over time, may reduce its effectiveness.

Calculating Your Flow Rate

You will need a watch with a second hand and a 1 or 5 gallon container to measure your flow rate with the instructions below.

- Using the bathtub as the measuring point, open BOTH the hot and cold water faucets completely (If you have a well water supply, wait until the pump kicks on before continuing.)
- Place either a 1 or 5 gallon container under the faucet and measure the amount of time it takes to fill the container in seconds.
- Refer to the chart below. Find the row on the left that contains the size of the container you used to fill with water, either 1 or 5 gallons.
- Then, find the column across the top that is closest to the number of seconds it took to fill the container.

The value in the table at the intersection of the row and column you determined is your flow rate in gallons per minute.

		Seconds to Fill Container																	
Container Capacity (gal)		5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
1		12.00	6.00	4.00	3.00	2.40	2.00	1.71	1.50	1.33	1.20	1.09	1.00	0.92	0.86	0.80	0.75	0.71	0.67
5		60.00	30.00	20.00	15.00	12.00	10.00	8.57	7.50	6.67	6.00	5.45	5.00	4.62	4.29	4.00	3.75	3.53	3.33

CAPACITY PER CU. FT.

- Iron alone
600 grains (10,000 gal. of water containing 1 ppm iron/cu. ft.)
- Iron and manganese
400 grains (7,000 gal. of water containing 1/2 ppm iron and 1/2 ppm manganese/cu. ft.)
- Hydrogen sulfide
175 grains (3,000 gal. of water containing 1 ppm hydrogen sulfide/cu. ft.)

