Norit Activated Carbon
leading in purification

INFORMATION SHEET

00-013-IS
Oct 2007

Filtration of Powdered Activated Carbon

Any type of powdered activated carbon (PAC) can be filtered economically and efficiently from any solution, following these guidelines.

1. Powdered activated carbon filtration in the laboratory

Powdered activated carbon is readily removed by vacuum filtration through a glass-fiber filter, such as Whatman GF/F.

2. Process filtration of PAC mixed with other solids

Typical examples are citric acid containing PAC and gypsum, and edible oils containing PAC mixed with bleaching earth. Appropriate filters are rotary vacuum drum filters or fundabac filters.

3. General PAC process filtration

Economical process filtration can only be achieved if the pressure drop across the filter is kept low for long periods, maximizing run lengths and minimizing labor costs.

This is best achieved by using a filter-aid pre-coat on the filter cloth. Diatomaceous earth filter-aids such as Johns Manville Celite 512 and Hiflow Supercel are generally the most suitable. The filter-aid has the effect of reducing the pressure drop across the filter, while preventing the passage of fines.

The filter used should be suitable for pre-coat filtration. The optimum type depends on process scale, solution viscosity and labor costs. Suitable filters include candle filters, funda filters, fundabac filters and plate-and-frame filters. Rotary vacuum drum filters are less suitable.

Pre-coating is achieved by circulating a 0.3 to 0.6% slurry of the filter-aid through the filter. Typical pre-coat loadings are around 500 g/m^2 of filter surface.

4. Troubleshooting

Problem:	Carbon fines getting through the filter
Probable causes:	No filter-aid Too little or the wrong filter-aid Pre-coat not homogeneous Operating pressure too high
Problem:	Rapid increase in pressure drop
Probable causes:	No filter-aid Using a PAC with poor filtration characteristics Proteins in the solution

Norit Americas Inc. *• 3200 West University Avenue • PO Box 790 • Marshall, TX 75671 USA*
Telephone +1 903 923 1000 • +1 800 641 9245 • FAX +1 903 923 1003
www.norit-americas.com • info@norit-americas.com