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IWW · Moritzstraße 26 · D-45476 Mülheim an der Ruhr

Weil Industrieanlagen GmbH
Herrn GF
Prof. Dipl.-Ing. Gerhard Weil
Heinrich-Hasemeier-Str. 33

49076 Osnabrück

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**Evaluation of Isotherms
of PO₄ in Water on the Iron Hydroxide Products
RowaPhos and Phosban**

1 Evaluation

The discussed isotherms are representing the PO_4 equilibrium between the two phases water and solid whilst neglecting of kinetic effects, i. e. time. For a given PO_4 concentration at the equilibrium state, it defines the maximum of the usable PO_4 adsorption capacity.

For the evaluation of the measured adsorption capacities of the granular FeOOH products 'Phosban™' and 'RowaPhos™', two different boundaries are considered:

1. drinking water
2. seawater

Drinking Water

For the whole measured range, the PO_4 adsorption capacity of the RowaPhos media is higher than for the Phosban media, reaching with values of about 16 mg P/g solid a maximum nearly twice as high as for Phosban (Fig. 1).

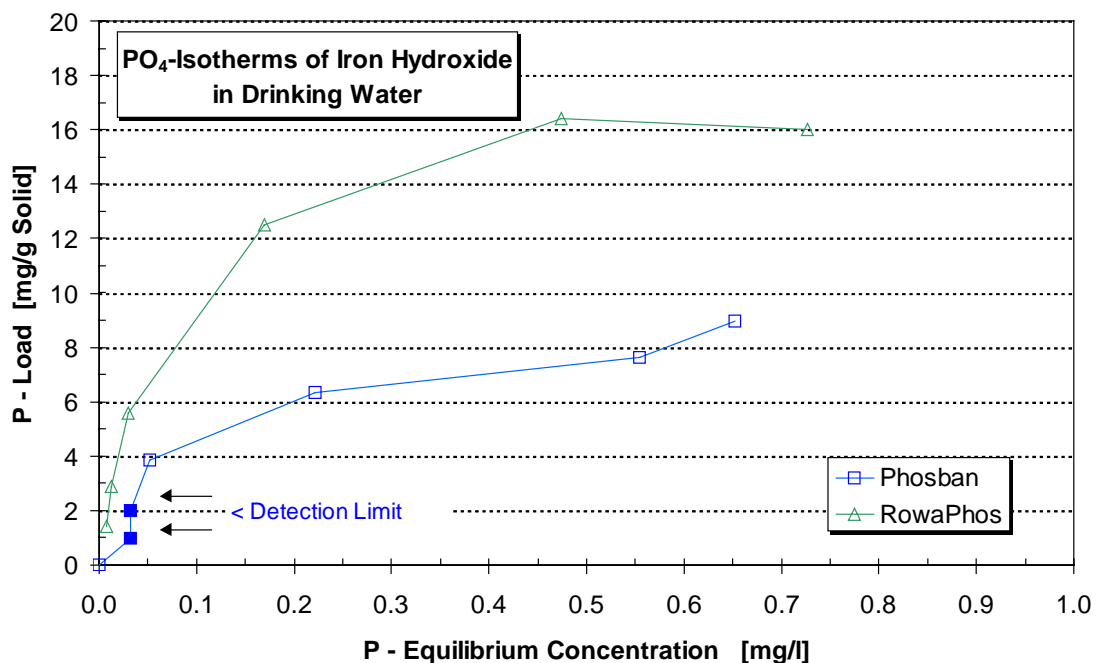


Figure 1: PO_4 isotherms for drinking water and both FeOOH products.

Seawater

As stated for drinking water, the RowaPhos media has also for seawater the higher PO_4 adsorption capacity. At low concentrations the behaviour of both curves are close together. However, the RowaPhos media shows a higher slope leading to higher adsorption capacities with still increasing values over 15 mg P/g solid. Comparing the results for drinking water with those for seawater, the isotherms for sea water are decreased by the high content of salts.

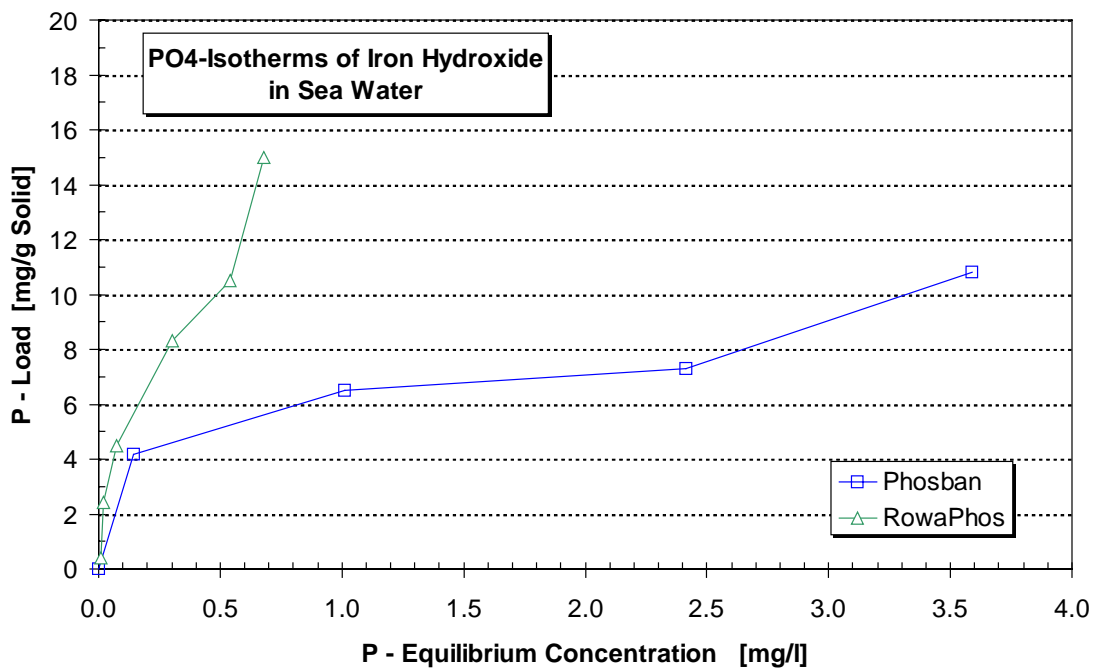


Figure 2: PO_4 isotherms for seawater and both FeOOH products.

Rheinisch-Westfälisches Institut für Wasser
Beratungs- und Entwicklungsgesellschaft mbH
- Bereich Wassertechnologie -

i. A.

Dr.-Ing. A. Nahrstedt