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Data Sheet

Product: DEFOSEX
 Granular Media
 (For removal of dissolved phosphate salts)

PRODUCT KEY FEATURES:

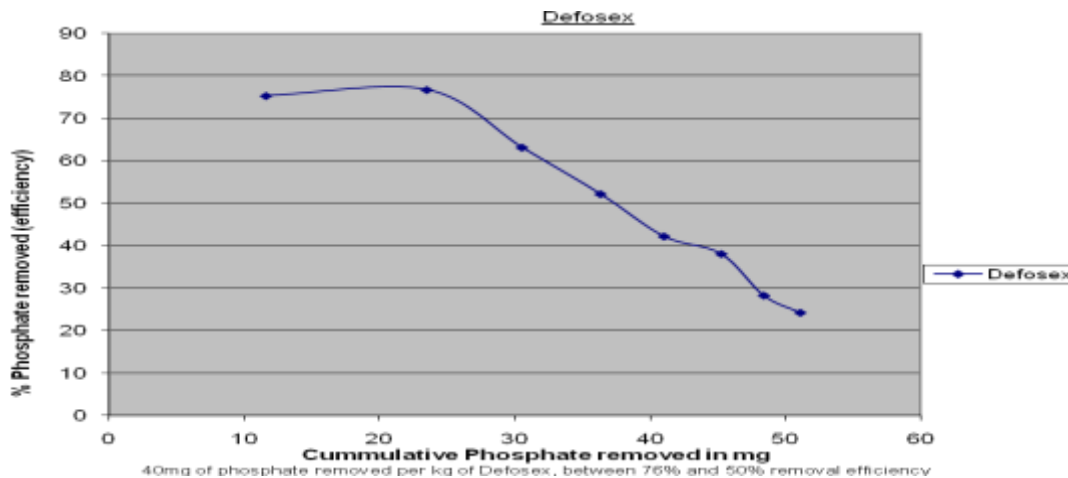
Removal of phosphates from a pH range of 6 – 9. No harmful effects. Low attrition from air scour.

Characteristics

Colour	Brown/Black
Dry Bulk Density	2150 - 2300kg/m ³
Effective size in mm (approx)	0.78mm
Uniformity coefficient.....D60 / D10	1.6
Mesh sizes in mm	0.5 – 1mm
Attrition loss per year in %	3 - 5%
Raw water pH	6 – 9
Bed depth	600 - 800mm Recommended 1000mm Max Depth
Freeboard in %	30
Backwash flow rate in cubes/hour sq metre	30 – 40 m/hour
Maximum temperature raw water in °C	10-35°C
Relative Density (S.G)	3.7mt/cm ³
Adsorption Capacity/Efficiency	See Graph.

Examples for Process Engineers

- A.** Flow rate of 20m³/ of raw water containing 2 mg/l of PO₄:
 Amount of PO₄ to be processed per hour = 40g@ave. 65% efficiency = 26g
 Based on removal capacity of 40mg of PO₄/kg Defosex, mass of Defosex required = 26g/.04g = 650kg Defosex = 0.28m³ (based on BD of 2.3)
 Based on 24hrs operation, volume of Defosex required = 24x0.28 = 6.7m³
 Thus 2 vessels each with effective volume of 3.35m³ (i.e. 2x 2.1m dia.x970mm bed depth) are required – vessels to be backwashed/regenerated once every 24hrs with KOH solution.
- B.** Flow rate of 100 m³/ of raw water containing 1 mg/l of PO₄:
 Amount of PO₄ to be processed per hour = 100g@ave. 65% efficiency = 65g
 Based on removal capacity of 40mg of PO₄/kg Defosex, mass of Defosex required = 65g/.04g = 1625kg Defosex = 0.7m³ (based on BD of 2.3)
 Based on 24hrs operation, volume of Defosex required = 24x0.7 = 16.8m³
 Thus 3 x vessels each with effective volume of 5.6m³ (i.e. 2.6m dia.x 980mm bed depth) are required – vessels to be backwashed/regenerated once every 24hrs with KOH solution.
- C.** Up-Flow System must be used.



Defosex:

Defosex is an inorganic compound which has a relatively high adsorption capacity to remove soluble phosphates from dam and river waters contaminated by agricultural phosphates and human waste. Defosex adsorbent has a physical solid-liquid interphase with low energy and rapid reversibility. This Van Der Waals physical cohesion could well be considered for recovery of rare earths. Defosex can recover its full extraction/adsorption restoration by immersion in 1.5 - 3% potassium hydroxide solution (KOH) when leakage exceeds 50% (See above paragraph) Time of immersion is less than 30 minutes. Defosex is a South African innovation.

Packaging:

25kg polywoven bags with inners, 40kg bags and bulk bags.

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