

# Phosphorus Removal/Recovery System with High-speed Adsorbent Media

## TECHNOLOGY BACKGROUND

Japan depends 100% of its phosphorus resource on import. Phosphorus recovery from sewerage is focused because wastewater includes much phosphorus. However, there was no technology that removed/recovered phosphorus efficiently from treated wastewater.

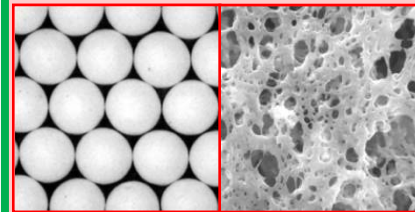
## TECHNOLOGY OUTLINE

Phosphorus is adsorbed on the surface of newly developed phosphorus adsorbent media and removed from treated wastewater. And then, adsorbed phosphorus is desorbed from the adsorbent and recovered as phosphate.

## BENEFITS

- Stably remove phosphorus from treated wastewater until extremely low concentration (TP concentration of 0.03 to 0.05 mg/L) at high speed (removal process takes about 3 minutes)
- Recover high grade phosphorus that is available as fertilizer or as alternative phosphate rock
- Reduce treatment cost because adsorbent media is reusable.

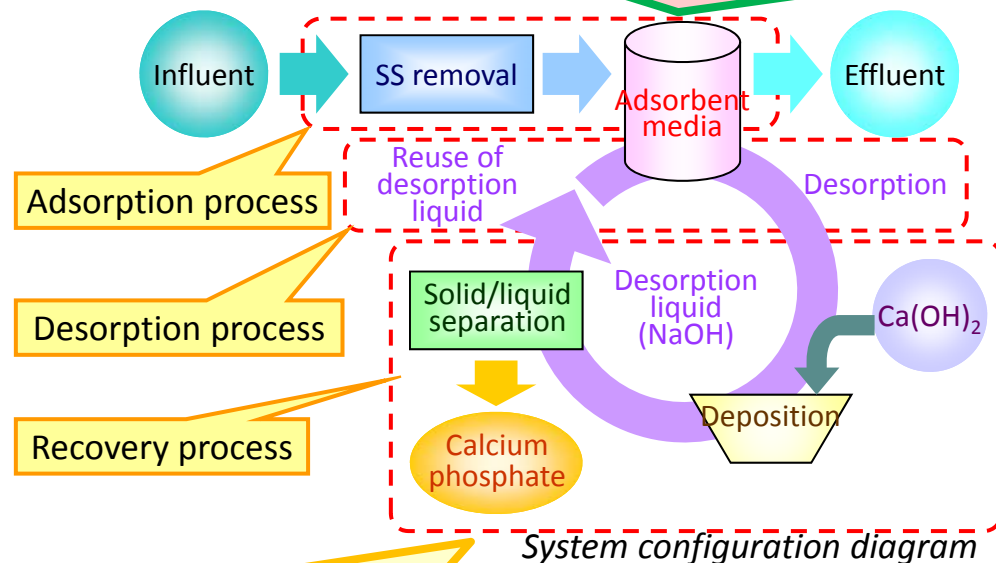
## Features of high-speed adsorbent media



Exterior  
(dia.0.55mm)

Surface  
structure

- ① High-speed adsorbability
- ② High removability
- ③ High selectivity for phosphate
- ④ Reusability
- ⑤ High durability



## Features of recovered phosphorus

- ① Recoverable as valuable hydroxyapatite
- ② Phosphorus content rate is 15% which is the same or more than phosphate rock
- ③ Impurity content is one-tenth of that of phosphate rock
- ④ Applicable to official standards of phosphate fertilizer

