

# AlgalBLOCK

For the Control of Algal Blooms



EARTH SYSTEMS  
Environment - Water - Sustainability

## CAUSES OF ALGAL BLOOMS



Nutrient pollution is an expensive and difficult problem for water managers because it can result in the growth of potentially toxic algal blooms (eg. *Cyanobacteria* or blue green algae) that can pose a significant health risk, increase maintenance costs, ruin infrastructure and damage, or destroy, local ecosystems by consuming available oxygen reserves and blocking out light.

In freshwater systems phosphorous, in the form of ortho-phosphates ( $\text{PO}_4^{3-}$ ) from a variety of sources including fertilisers, human

wastes and urban runoff, is the key limiting nutrient for algal growth. This can be found as soluble compounds in the water column or as a variety of solid compounds stored in sediments at the base of rivers, lakes and dams. Recent research has highlighted the need for remedial strategies to simultaneously lower soluble phosphorous levels and block its release from bottom sediments. Seasonal release from bottom sediments is now believed to be a major contributor of phosphorous to the water column.

## WHAT IS AlgalBLOCK?

AlgalBLOCK is a specialised form of surface activated precipitated calcium carbonate (PCC) capable of dramatically reducing phosphorous concentrations.

## HOW DOES AlgalBLOCK WORK?

During dosing, soluble phosphorous binds onto the surface of the AlgalBLOCK as it settles through the water column. Once it falls to the bottom, AlgalBLOCK forms a reactive barrier or blanket which prevents further seasonal release of phosphorous from the basal sediments. This provides sustained protection against algal blooms. AlgalBLOCK forms an essentially insoluble natural mineral (hydroxy-apatite) on reaction with phosphorous in standing water and sediments.

Independent research by the Water Studies Centre at Monash University concluded that the phosphate binding capacity of AlgalBLOCK is in the order of 5 grams phosphorous per 100 grams of AlgalBLOCK. This was up to 5 times better than the other materials investigated, including other precipitated calcium carbonate compounds.

Potential also exists for the recycling / reuse of the residual phosphorous-rich calcic compounds resulting from treatment with AlgalBLOCK.

## HOW IS AlgalBLOCK APPLIED?

Once an appropriate dosage for the affected water body is calculated, AlgalBLOCK can be supplied to site as a powdered reagent. Specialised *on-water* and *shore based* dosing equipment is then used to dispense AlgalBLOCK evenly over the surface of the affected water body as a slurry. Ultra-fine suspended particles of AlgalBLOCK then settle through the water column, removing phosphorous on the way, to form a reactive barrier or blanket over the bottom sediments.

## USES FOR AlgalBLOCK

- Sewage Treatment Lagoons and Effluent Streams
- Drinking Water Reservoirs
- Aquaculture ponds
- Recreational and Ornamental Water Bodies
- Food Processor / Feedlot effluent lagoons
- Irrigation and Farm Dams
- Golf Courses

## BENEFITS OF AlgalBLOCK

- Sustained prevention of algal blooms
- Inexpensive in comparison to other reagents
- Environmentally benign, natural compound
- Easy to dispense
- No artificial / toxic additives
- Potential for reuse of P-rich compounds arising from treatment



Dispensing a treatment slurry from specialised *on-water* dosing equipment.

For further information regarding AlgalBLOCK contact  
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