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**Thothathri**

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(54) **COMPOSITION FOR GROWTH OF DIATOM ALGAE**

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(58) **Field of Classification Search** ..... 504/152, 504/282, 246; 548/357.2, 544, 359.1; 516/80, 516/77

See application file for complete search history.

(56) **References Cited**

**U.S. PATENT DOCUMENTS**

4,563,298 A \* 1/1986 Keiser ..... 516/80  
6,458,179 B1 10/2002 Puskarich  
6,555,228 B2 4/2003 Guritza  
6,918,954 B2 \* 7/2005 Perander et al. .... 106/18.12  
2003/0089668 A1 5/2003 Moffett

\* cited by examiner

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(57) **ABSTRACT**

The present invention relates to a composition for a copious bloom of diatom algae comprising macro and or micro nutrients adsorbed on metalate modified silica sol. The present invention further relates to a process for preparing an aqueous dispersion of a composition comprising of iron adsorbed onto metalate modified silica sol containing 0.01% to 50% of Fe, and a micronutrient adsorbed onto metalate modified silica sol consisting of Mn, Zn, Co, Cu, Mo, B, V, Ni, Se, I, Fl, Cr, Cd and mixtures thereof in the proportion 0.001% to 30% of the weight of silica and macronutrient adsorbed onto metalate modified silica sol consisting of N, P, K, Mg, Ca, S, Cl, Na the elements of each macronutrient varying from 1% to 50% of the silica.

**16 Claims, No Drawings**