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(71) Applicant: **ECOLAB USA INC.** [US/US]; 370 N. Wabasha Street, St. Paul, Minnesota 55102 (US).

(72) Inventors: **KAHAIAN, Arthur J.**; 2027 W. Cortland Street, Apt. 2, Chicago, Illinois 60647 (US). **KNOTH, Alexandra M.**; 2757 Charter Oak Drive, Aurora, Illinois 60502 (US). **LI, Hui**; 1101 Iroquois Ave. #1328, Naperville, Illinois 60563 (US). **BANKS, Rodney H.**; 1504 Greenlake Drive, Aurora, Illinois 60502 (US). **SCHWARTZ, Joe L.**; 1301 Lawrence Court, Aurora, Illinois 60504 (US). **WELZ, Sascha J.**; 701 W. Jackson Blvd., Unit 403C, Chicago, Illinois 60661 (US).

(74) Agent: **SORENSEN, Andrew D.**; Ecolab Usa Inc., 655 Lone Oak Drive, Eagan, Minnesota 55121 (US).

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(54) **Title**: WATER HARDNESS MONITORING VIA FLUORESCENCE

(57) **Abstract**: Provided are automated methods for measuring soluble magnesium concentration in water using fluorescence. The methods employ the use of a pH-buffered liquid and a magnesium coordinating fluorescing reagent. In certain embodiments, the methods may further employ measuring total hardness concentration of the water by displacing any soluble calcium with soluble magnesium and then re-measuring the soluble magnesium concentration. Optionally, the soluble calcium concentration can be determined by subtracting the measured soluble magnesium concentration from the measured total hardness concentration.