

ABSTRACT

Proposed is a pretreatment desulfurization method for marine fuel oil. The method includes a step of preparing a pretreatment desulfurization agent including (a) at least one oxide selected from the group consisting of SiO_2 , Al_2O_3 , Fe_2O_3 , TiO_2 , MgO , MnO , CaO , Na_2O , K_2O , and P_2O_3 , (b) at least one metal selected from the group consisting of Li, Cr, Co, Ni, Cu, Zn, Ga, Sr, Cd, and Pb, and (c) at least one liquid composition selected from the group consisting of sodium tetraborate ($\text{Na}_2\text{B}_4\text{O}_7 \cdot 10\text{H}_2\text{O}$), sodium hydroxide (NaOH), sodium silicate (Na_2SiO_3), and hydrogen peroxide (H_2O_2). The method also includes a step of feeding the pretreatment desulfurization agent to a fuel supply line through which marine fuel oil is supplied to a marine engine at a certain ratio so that a fluid mixture containing the marine fuel oil and the pretreatment desulfurization agent is supplied to the marine engine, thereby adsorbing and removing sulfur oxides during combustion of the fluid mixture.

FIG 1 for publication