

Chlorine-Free Solid Fuel Production from MSW by Hydrothermal Treatment Technology

Written by Bayu Indrawan

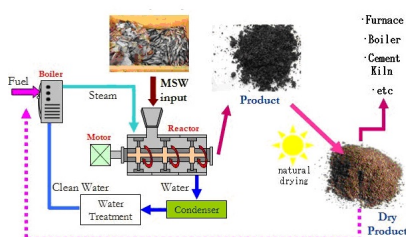
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SUMMARY: As people aware of the positive functions of waste and the increased demands on energy, the technology of converting Municipal Solid Waste (MSW) to solid fuel has its momentum; it takes important role as a method of providing alternative energy source. In this paper, the experiment of converting Japanese MSW into chlorine-free solid fuel using the hydrothermal treatment technology has been performed. The system, capable of handling about 1 ton of MSW per batch, is generally applying middle pressure saturated steam at around 2MPa in a stirred reactor for about one hour to produce uniform, powdery product of solid fuel. Unfortunately, plastic content in MSW contains chlorine that comes from polyvinylchloride (PVC). Since chlorine has possibility to cause clogging, corrosion and dioxin formation in solid fuel furnaces, the chlorine removal process is needed. Using hydrothermal treatment system, the organic chlorine content in MSW is converted into inorganic chlorine so that chlorine can be easily removed by washing process. This experiment is aimed at finding optimum parameters (the ratio of the product and washing water, the washing time, the washing speed and the washing water temperature) that influence the chlorine washing and removal process to obtain chlorine-free product. Washed water recycling will also be discussed to minimize the water requirement for the washing process.

Keywords: municipal solid waste, solid fuel production, hydrothermal treatment, chlorine removal, washing process



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