

Title (en)

Process to incinerate wastes with high halogen content in a way generating low emissions and low corrosion

Title (de)

Verfahren zur korrosions- und emissionsarmen Mitverbrennung hochhalogenierter Abfälle in Abfallverbrennungsanlagen

Title (fr)

Procédé pour incinérer des déchets à forte teneur en halogènes en réduisant les émissions nocives ainsi que la corrosion

Publication

EP 1271053 A3 20030502 (DE)

Application

EP 02013485 A 20020617

Priority

DE 10131464 A 20010629

Abstract (en)

[origin: EP1271053A2] Sulfur, or a suitable sulfur carrier, is dosed under control into a furnace chamber, as a function of the total proportion of halogen and the halogen type. An Independent claim is included for the corresponding waste incineration plant. Preferred features: Sulfur quantity dosed under control is proportional to the current total fraction of Cl, Br or I in the waste. Sulfur quantity dosed is controlled in accordance with an operationally-determined sulfur dosing graph. This achieves the necessary SO₂ residual concentration in the raw gas following the boiler, before quenching, corresponding with the Cl-, Br- or I- rich waste. The determination is carried out for at least one predominant fraction of Cl, Br or I in the waste. The minimum necessary SO₂ content in the boiler raw gas is found, under steady state operation, to reduce the quantity of free Cl, Br or I detected in the purified gas following the scrubber, to zero or a set limit. The current total halogen fraction on the flue gas side is determined as halogenide content in effluent water from the acid flue gas scrubber, i.e. as the product of halogenide concentration and volumetric flow of effluent, determined continuously. In another alternative, it is determined from measurements of halogen and hydrogen halide species in the boiler flue gas after the boiler and before quench, and the dry volumetric flow rate of flue gas. As an alternative to the latter, a magnitude proportional to the volumetric flow rate of the flue gas is taken, e.g. the rate of steam generation at the boiler, is determined continuously. Sulfur content is raised momentarily, preferably by 10% to 50%, should free halogen be detected in purified gas from the scrubber but ahead of any SCR (selective catalytic reduction) catalyst bed. Similar action is taken on detection of excessive halogen in effluent water from the acid scrubber. Sulfur is added as solid, liquid, or as waste sulfuric acid. Solid sulfur is dosed as pellets by pneumatic conveying into the primary combustion zone (3). Waste sulfuric acid is dosed to the primary or secondary furnace zone (4) using controlled metering pumps and nozzles. Where halogen content in the flue gas cycles as a result of dosing halogen-rich waste packages, dosing of sulfur is controlled in sympathy, in respect of quantity, time and duration. Hypo-halogenide reduction in the alkali scrubber is effected through bisulfide process sinters formed from the residual SO₂ of the boiler raw gas and/or by an externally-supplied reductant such as thiosulfate. Sympathetic control of sulfur dosing is a function of automatically-read bar codes on the packs, thus giving information on calorific value, halogen type and halogen quantity in the pack.

IPC 1-7

F23G 5/50; **F23J 7/00**; **F23J 15/04**; **F23G 5/14**

IPC 8 full level

F23G 5/16 (2006.01); **F23G 5/50** (2006.01); **F23G 7/06** (2006.01); **F23J 15/04** (2006.01)

CPC (source: EP US)

F23G 5/16 (2013.01 - EP US); **F23G 5/50** (2013.01 - EP US); **F23J 15/04** (2013.01 - EP US); **F23G 2207/60** (2013.01 - EP US)

Citation (search report)

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