

Title (en)

Method for incinerating wastes with high halogen content with reduced emissions and corrosion

Title (de)

Verfahren zur korrosions- und emissionsarmen Mitverbrennung hochhalogenierter Abfälle in Abfallverbrennungsanlagen

Title (fr)

Procédé d'incinération de déchets à forte teneur en halogènes afin de réduire les émissions nocives et la corrosion

Publication

EP 1271053 A2 20030102 (DE)

Application

EP 02013485 A 20020617

Priority

DE 10131464 A 20010629

Abstract (en)

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.

Abstract (de)

Die Erfindung besteht in einem Verfahren und einer Vorrichtung zur korrosions- und emissionsarmen Mitverbrennung hochhalogenierter Abfälle, insbesondere Flüssigabfall, in Abfallverbrennungsanlagen, wobei die Abfallverbrennungsanlage mindestens einen Feuerraum, einen Abhitzeessel, eine mehrstufige Rauchgaswäsche, bestehend aus einer ein- oder mehrstufigen sauren Wäsche und einer alkalischen Wäsche, enthält, wobei in den primären und/oder sekundären Feuerraum Schwefel oder ein entsprechender Schwefelträger geregelt zudosiert wird. Die Regelung der Schwefelmenge erfolgt im wesentlichen proportional zur mit den Abfällen eingetragenen aktuellen Halogensgesamtfracht im Kesselrauchgas.
<IMAGE>

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)

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Designated contracting state (EPC)

AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE TR

DOCDB simple family (publication)

EP 1271053 A2 20030102; **EP 1271053 A3 20030502**; **EP 1271053 B1 20071114**; AT E378554 T1 20071115; DE 10131464 A1 20030116; DE 10131464 B4 20060420; DE 50211184 D1 20071227; DK 1271053 T3 20080317; ES 2295258 T3 20080416; HU 0202095 D0 20020928; HU 228684 B1 20130528; HU P0202095 A2 20040628; HU P0202095 A3 20070328; JP 2003065522 A 20030305; JP 4221194 B2 20090212; PL 199924 B1 20081128; PL 354795 A1 20021230; US 2003065236 A1 20030403

DOCDB simple family (application)

EP 02013485 A 20020617; AT 02013485 T 20020617; DE 10131464 A 20010629; DE 50211184 T 20020617; DK 02013485 T 20020617; ES 02013485 T 20020617; HU P0202095 A 20020626; JP 2002177172 A 20020618; PL 35479502 A 20020628; US 18035802 A 20020626