Title (en)

USE OF LIQUID HYDROGEN CHLORIDE AS A REFRIGERANT IN METHODS FOR PRODUCING CHLORINE

Title (de)

VERWENDUNG VON FLÜSSIGEM CHLORWASSERSTOFF ALS KÄLTEMITTEL IN VERFAHREN ZUR CHLORHERSTELLUNG

Title (fr)

UTILISATION DE CHLORURE D'HYDROGÈNE LIQUIDE COMME AGENT RÉFRIGÉRANT DANS UN PROCÉDÉ DE PRODUCTION DU CHLORE

Publication

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Application

EP 12703847 A 20120216

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Abstract (en)

[origin: WO2012110597A1] The invention relates to a method for producing chlorine from hydrogen chloride, comprising the following steps: a) making a liquid hydrogen chloride flow a available as a refrigerant flow; b) feeding at least one flow b1 that contains hydrogen chloride and a flow b2 that contains oxygen to a hydrogen chloride oxidation zone and catalytically oxidizing hydrogen chloride to chlorine, a product gas flow b3 being obtained that contains chlorine, water, oxygen, carbon dioxide and inert gases; c) contacting the product gas flow b3 with aqueous hydrochloric acid I in a phase contact unit and partially removing water and hydrogen chloride from flow b3, a gas flow c being obtained that contains hydrogen chloride, chlorine, water, oxygen, carbon dioxide and optionally inert gases; d) drying the gas flow c, a substantially water-free gas flow d remaining that contains hydrogen chloride, chlorine, oxygen, carbon dioxide and optionally inert gases; e) partially liquefying the gas flow d by compression and cooling, an at least partially liquefied flow e being obtained; f) performing a gas-liquid separation of flow e to give a gas flow f1 that contains chlorine, oxygen, carbon dioxide, hydrogen chloride and optionally inert gases and a liquid flow f2 that contains hydrogen chloride, chlorine, oxygen and carbon dioxide, and optionally returning at least part of gas flow f1 to step b); g) separating liquid flow f2 by distillation in a column to give a chlorine flow g1 and a flow g2 that substantially consists of hydrogen chloride, oxygen and carbon dioxide; the cooling and partial liquefaction of gas flow d in step e) being the result of indirect heat exchange with the liquid hydrogen chloride flow a, at least a part of the liquid hydrogen chloride flow a being evaporated and this part being obtained as gaseous hydrogen chloride flow a'.

IPC 8 full level

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CPC (source: EP KR)

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Citation (search report)

See references of WO 2012110597A1

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