

Title (en)

CATALYTIC-HYDROTHERMAL DISPOSAL PROCESS OF CHEMICAL MILITARY MATERIALS

Title (de)

VERFAHREN ZUR KATALYTISCHEN-HYDROTHERMALEN ENTSORGUNG VON WAFFENCHEMISCHEN STOFFEN

Title (fr)

PROCEDE D'ELIMINATION CATALYTIQUE-HYDROTHERMIQUE DE MATIERES CHIMIQUES MILITAIRES

Publication

EP 0823855 A1 19980218 (DE)

Application

EP 95919406 A 19950505

Priority

EP 9501710 W 19950505

Abstract (en)

[origin: WO9634662A1] The chemical military materials include both the group of chemical agents used in chemical weapons and the group of fuels used in military aircraft. Chemical military materials must be disposed of at the end of their storage life. A continuous process is disclosed for that purpose. The chemical military materials are first suspended and/or dissolved in water and an alkaline catalyst is added to the aqueous mixture. A reaction mixture is thus obtained. The reaction mixture is brought to the reaction pressure by liquid feeding means, for example a high pressure pump. The reaction pressure lies between 100 bars and 1000 bars. The reaction mixture is heated up to a reaction temperature lower than the critical temperature of pure water. The usual reaction temperature is 350 DEG C. The reaction mixture heated up to the reaction temperature then flows over a catalyst bed that contains a catalytic zirconium dioxide. The catalysed reactions produce a hot mixture of converted materials that is substantially free of chemical military materials. The hot mixture of converted materials is cooled down and expanded in a separator, producing a gaseous phase with CO₂, CH₄ and H₂, an oily phase and an aqueous phase with dissolved salts that may all be dumped.

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