

Title (en)
CHEMICAL CLEANING METHOD AND SYSTEM WITH STEAM INJECTION

Title (de)
CHEMISCHES REINIGUNGSVERFAHREN UND -SYSTEM MIT DAMPFLEITUNG

Title (fr)
PROCÉDÉ DE NETTOYAGE CHIMIQUE ET SYSTÈME À INJECTION DE VAPEUR

Publication
EP 2356376 A4 20180228 (EN)

Application
EP 09831147 A 20091203

Priority

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Abstract (en)
[origin: WO2010065785A1] Disclosed are methods and apparatus for cleaning heat exchangers and similar vessels by introducing chemical cleaning solutions and/or solvents while maintaining a target temperature range by direct steam injection into the cleaning solution. The steam may be injected directly into the heat exchanger or into a temporary side stream loop for recirculating the cleaning solution or admixed with fluids being injected to the heat exchanger. The disclosed methods are suitable for removing metallic oxides from a heat exchanger under chemically reducing conditions or metallic species such as copper under chemically oxidizing conditions. In order to further enhance the heat transfer efficiency of heating cleaning solvents by direct steam injection, mixing on the secondary side of the heat exchanger can be enhanced by gas sparging or by transferring liquid between heat exchangers when more than one heat exchanger is being cleaned at the same time.

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Citation (search report)

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