Title (en)

MICROWAVE REACTIVATION SYSTEM FOR STANDARD AND EXPLOSION-PROOF DEHUMIDIFICATION

Title (de)

MIKROWELLEN-REAKTIVIERUNGSSYSTEM FÜR STANDARD- UND EXPLOSIONSSICHERE ENTFEUCHTUNG

Title (fr)

SYSTÈME DE RÉACTIVATION PAR MICRO-ONDES POUR LA DÉSHUMIDIFICATION STANDARD ET ANTIDÉFLAGRANTE

Publication

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Application

EP 11866182 A 20110526

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- IB 2011001503 W 20110526

Abstract (en)

[origin: WO2012160408A1] The present invention relates to dehumidification equipment and more specifically to a microwave reactivation system and new method of reactivation / regeneration of the desiccant dehumidification system and desiccant rotor for use in conventional desiccants as well as the explosion-proof dehumidification system used in hazardous locations and or applications. The dehumidification system incorporates a desiccant rotor assembly which is located in the cabinet and the rotor rotatively mounted inside this cabinet. The desiccant rotor core is impregnated with a desiccant type material. Mechanical means are provided for rotating the desiccant rotor within the cabinet. The Microwave System and method of reactivation is designed to provide an indirect, safe and energy efficient source of heat and temperature rise required in the reactivation section of the desiccant unit for the release into atmosphere of the water vapors which are accumulated in the desiccant rotor. This microwave reactivation system and method is based on heat transfer produced from a heated fluid which is pumped through a closed loop coil assembly. This closed loop coil assembly is located and runs through both the isolated heating chamber of the microwave section and the reactivation / regeneration section in the dehumidification system. The airstream passing through the reactivation intake section comes in contact with the coil assembly and is heated to the desired temperature prior to reaching the desiccant rotor. The desiccant dehumidification system which is comprised of a desiccant rotor assembly and the method of dehumidifying the air enclosed within a specific space is also described in this documentation.

IPC 8 full level

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Citation (search report)

- [X] US 2011056220 A1 20110310 - CAGGIANO MARIO [CA]
- [X] US 2011011260 A1 20110120 - CAGGIANO MARIO [CA]
- [X] CA 1092199 A 19801223 - TOYNE JAMES A
- [A] JP 2005134097 A 20050526 - TOOMIKKU KK, et al
- [AD] US 7308798 B2 20071218 - CAGGIANO MARIO [CA]
- See references of WO 2012160408A1

Designated contracting state (EPC)

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