

Title (en)

ENVIRONMENTAL CONTROL SYSTEM INCORPORATING A DUAL BED REACTOR

Title (de)

UMGEBUNGSLUFTREGELEINRICHTUNG MIT EINEM EINGEBAUTEN ZWEIBETTREAKTOR

Title (fr)

SYSTEME DE REGULATION DE L'ENVIRONNEMENT COMPORTANT UN REACTEUR A DOUBLE COUCHE

Publication

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Application

EP 97939437 A 19970818

Priority

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Abstract (en)

[origin: WO9806479A1] An environment control system (10, Fig. 2) for use in a transportation machine. The system is effective for receiving and conditioning a heated airstream (16, Fig. 2) containing organic compounds and ozone, prior to delivering the airstream to a habitable space within the machine. The system includes a dual bed reactor having an upstream portion (46, Fig. 2) which is effective for converting organic compounds within the airstream into carbon dioxide and water, and a downstream portion (48, Fig. 2) which is effective for decomposing ozone within the airstream. Both the upstream and downstream portions of the core structure include at least one fin assembly (114, Fig. 8). Each portion may include a plurality of the fin assemblies, configured as annular rings and generally concentrically disposed relative to one another. Alternatively, each portion of the reactor may comprise a single fin assembly which is wrapped upon itself in a spiral configuration. Radially adjacent ones of the fin assemblies of each portion, or radially adjacent spirals of the individual fin assembly of each portion, are brazed to one another so as to prevent nesting between radially adjacent ones of the fin assemblies or spirals. Each fin assembly of the upstream portion is anodized, with a catalyst which is effective for converting organic compounds into carbon dioxide and water being disposed on and within the resulting anodized surface layer. Each fin assembly of the downstream portion may be similarly anodized, with application of a catalyst effective for decomposing ozone, or alternatively, each fin assembly of the downstream portion may be constructed from a catalytically-active metal alloy.

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