

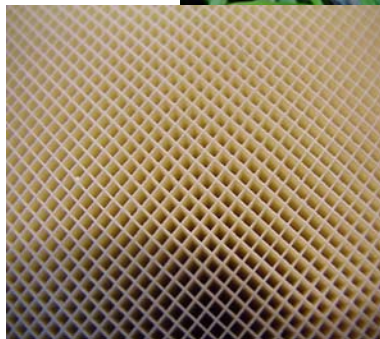


Emprise Corporation

More about Cordierite

The Emprise Fuel Cell Humidifier uses a ceramic honeycomb material. Its dominant chemical composition is Cordierite ($2\text{MgO}\cdot 2\text{Al}_2\text{O}_3\cdot 5\text{SiO}_2$). Properties include:

- Low pressure drop
- High structural strength
- Chemically inert
- Lightweight
- High surface area
- Low cost
- Dimensionally stable
- Long life



In addition, Cordierite is currently in mass production. It is commonly used in automotive catalytic converters and costs as little as 30 cents per cubic inch.

The unique properties of Cordierite allow the construction of a simple, inexpensive and almost indestructible enthalpy wheel. The rotor is a unitary cylinder of the honeycomb material shown above. The contact type end seals act directly against the honeycomb to form very efficient labyrinth seals. The very low thermal expansion rate of Cordierite greatly simplifies the sealing system by minimizing axial growth during operation.

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