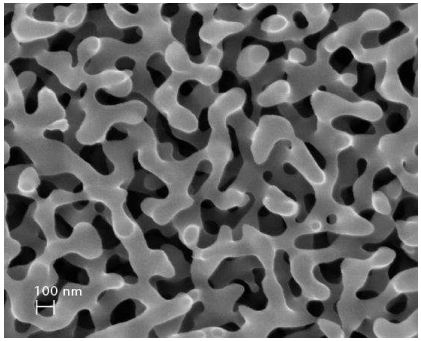
CoralPor®: high-quality porous glass

Reference: TD-DE-1075

TECHNOLOGY DESCRIPTION

CoralPor® is a porous material with a rigid, amorphous microstructure (glass) used as a key component in the thermal protection system of re-entry and hypersonic aerospace vehicles due to its high resistance to extreme temperatures. It can be advantageously employed on the surface of a vehicle, where a thermally resilient material is required. In addition, CoralPor® contributes significantly to weight reduction due to its low density. The ability to individually customise pore structures in terms of size and volume, combined with simple surface functionalisation, opens up a wide range of application options.



INNOVATIVE ASPECTS

- The inorganic nature of glass gives porous glasses high mechanical, thermal and chemical resistance, making them a more robust option compared to inorganic polymer solutions.
- The structure can be modelled over a wide range to have a specific pore size, pore volume and distribution of pore size and diameter.
- CoralPor® nano-porous glasses are offered as powders or larger monolithic pieces in rod, sheet and tube formats. CoralPor® macro-porous glasses are available as granules and monolithic pieces.
- In addition to porosity and shape, other parameters that can be influenced by manufacturing and coating processes are glass composition, density, refractive index, CTE and colour.

TECHNOLOGY READINESS (in space application)

TRL 9 (2024)

COUNTRY OF ORIGIN

Germany

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TAGS #glass #pourous #thermal resist. #protection #customisable #robust

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