

Ceramic Foam (HTFOAM-1500) by Direct Foaming Technique

HTFOAM-1500 are ceramic foams Silicon carbide (SiC)/Silicon Oxycarbide foam (SiOC) made by direct foaming technique. HTFOAM-1500 has very high operational temperature capability of 1500°C under oxidation atmosphere. The light weight ceramic foam possesses both open and closed cells with good strut density and high compressive strength. They have very low thermal conductivities and hence suitable for various applications viz., thermal insulators, micro-meteoroid and orbital debris (MMOD) shield, electromagnetic shielding and as CMC based sandwich constructions for internal multiscreen applications.

Salient Features

- Ceramic foam (SiC) foam with temperature capability of 1500°C under oxidizing atmosphere.
- Open cell porosity, closed cell porosity, strut thickness can be optimized by varying the processing parameters.
- Compressive strength and thermal conductivity can be optimized by varying the processing parameters and polymer composition.

Properties	Values
Bulk density (g/cc)	0.23-0.35
Total porosity (%)	80-95
Open porosity (%)	20-35
Closed porosity (%)	65-80
Compressive strength (MPa)	0.2-3.0
Thermal conductivity (W/mK) at RT	0.1-0.2

Technology Transfer from ISRO

ISRO is willing to offer the knowhow of this technology to suitable entrepreneurs / industries in India. Capable manufacturing industries interested in acquiring this knowhow may write with details of their present activities, requirements and plans for implementation, infrastructure and technical expertise available with them, their own market assessment, if any, and plans for diversification to the address given below: