

Composite from Mo-Al Intermetallic Compounds and Aluminum Nitride

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This work presents attempts to obtain dense sinters built of intermetallic compounds (Mo_3Al and Mo_3Al_8) and aluminum nitride. The intermetallic Mo_3Al , Mo_3Al_8 and ceramic AlN powders were received by self-propagating high-temperature synthesis (SHS). The composite was consolidated by hot pressing (HP). Some mechanical and physical properties were assessed, e.g. density ($4,51\text{g/cm}^3$), bending strength (160MPa), hardness (9,8GPa), thermal expansion coefficient ($6,7 \times 10^{-6}\text{K}^{-1}$), resistivity ($8,93 \times 10^{-3} \text{ }\mu\text{cm}$) and thermal coefficient of resistivity (TCR) ($106 \times 10^{-6}\text{K}^{-1}$).