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NANOSHEL

Aluminium
Metal Foam
Closed Cell

Al

99.9%

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NS6130-10-1214

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Aluminium
Metal Foam

- The metal foams of Al–alloys are commercially most utilized because of their high thermal conductivity, low density, high ductility, and metal competitive cost.
- Aluminium metal foam materials, which can be synthesized into a variety of functional geometries, offer significant performance benefits for weight–sensitive applications.
- Aluminium metal foams are manufactured with distinct methods, for instance, powder metallurgy technique, sintering technique, the addition of a gas in melt injection, using agent in melt foaming, and investing casting.
- Metal foams are materials that show a distinctive combination of physical and mechanical properties like lightweight, high specific stiffness, high strength to weight ratios.
- The highest thermal efficiency of aluminium foam is in the vertical position.
- The aluminium foams produced by the powder metallurgy method, resulting in high pore connectivity which gives better results for the analysis of mechanical applications.
- Aluminium foam as a suitable absorbent material with smart quality performance.
- These are greatly incremented energy absorbing capabilities create use within the automotive and aerospace industries.
- Metal foams show high stiffness–to–weight and strength–to–weight ratios and thus offer potential weight savings.
- They also have the potential to absorb high amounts of energy during compressive deformation for efficient crash energy management.

Additional Characteristics

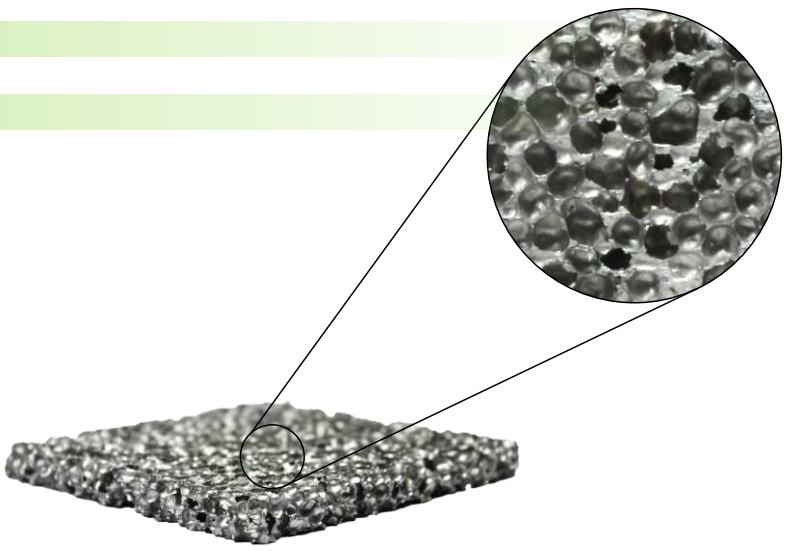
Stock No.	Purity	Pore Size	Dimension	Porosity
NS6130-10-1214	99.9%	2-11 mm (Closed Cell)	100 x 100 x 10 mm	60-90%

Properties of Metal Foam

The key properties of metal foam are as follows:

- Ultralight material (75–95% of the volume consists of void spaces)
- Very high porosity
- High compression strengths combined with good energy absorption characteristics
- Thermal conductivity is low
- High stiffness
- High melting point
- Better damping
- Thermal insulation

Purity
99.9%



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Aluminium

CHARACTERISTICS OF METAL FOAMS

Ultra-lightweight aluminum foams possess unique microstructural characteristics and physical properties that make them attractive for automotive, as well as other applications:

- Ultra-lightweight foam
- Alluring porous structure and the microstructures tailorable over the range 40 to 80% porosity
- High stiffness-to-weight and strength-to-weight ratios
- Ability to absorb energy from impact, crash, and explosive blasts
- Vibration damping and sound absorption
- Fire resistance and thermal insulating properties
- Metal foams are readily recycled

Applications Of Aluminium Metal Foam

- Through aluminium foam, ships become lighter and consumed less fuel
- Provide individual and unique architecture
- Enhance the crashworthiness design of the vehicle
- Assists in the assembly process of a vehicles
- Protects the battery from external impacts and provide safety in battery failure
- Reduced manufacturing steps in High- speed trains
- Blast mitigation panels in military vehicles
- Foams blot up the sound, vibrations and shocks
- Weight reducing components of Al foam use in aircraft or automotive applications
- Matrix for chemical beds and scrubbers
- Filters and mist elimination of water and oils
- Forged super insulated building
- Mitigate the heating and airconditioning requirements in buildings
- Foamed aluminum cores for aluminium castings
- Heat sinks and exchangers
- Core structure for high strength panels
- Utilizable as catalyst carrier

Al

ISO 9001:2015
CERTIFIED COMPANY

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