+357 96 030922
info@marketpublishers.com

The Global Market for Space Materials 2026–2036: Shielding, Thermal Management, Propulsion and Structures for the New Space Economy

https://marketpublishers.com/r/G9621DA73FFDEN.html
Date: August 2026
Pages: 329
Price: US$ 1,500.00 (Single User License)
ID: G9621DA73FFDEN

Abstracts

Space materials are the shielding, insulation, structures, propellants, cells and coatings that make a spacecraft survivable. They are a small fraction of programme cost but a first-order constraint on what can be flown, and the market for them is being reshaped faster than at any point since the Apollo era.

The driver is volume. Global orbital launches passed 250 in 2024 and are trending toward 400 or more by the end of the decade, while cost-per-kilogram to low Earth orbit is falling below USD 1,500 on heavy reusable systems. Mega-constellations — Starlink, Kuiper, OneWeb/Eutelsat, IRIS?, Guowang and Qianfan — imply more than 60,000 satellites on orbit by 2036, turning satellite production into something closer to a manufacturing line than a bespoke build. That change inverts the traditional material trade-space. Where mass-optimisation once justified almost any price premium, cost-sensitive constellation platforms now favour cheaper, higher-volume alternatives, and the qualification premium that separates a space-grade material from its terrestrial equivalent is under sustained pressure.

At the same time, demand is broadening. Artemis and the parallel Chinese, European, Indian, Japanese and Emirati lunar programmes create requirements that constellations do not: radiation shielding for crewed transit, regolith-based construction, high-power electric propulsion and ISRU feedstocks. Defence space is funding proliferated, hardened architectures with shorter design lives and faster replenishment. In-space manufacturing remains the most speculative segment — no space-manufactured product is yet available for sale on Earth, and in-orbit research still costs USD 25,000 to 100,000 per kilogram — but pharmaceutical seed crystals, gold nanospheres and semiconductor-grade crystals are converging on the point where per-gram value covers the journey.

+357 96 030922
info@marketpublishers.com

Supply is the vulnerability. The market depends on a small number of chokepoints: ADN from a single European source, xenon and krypton from a concentrated noble gas supply chain, pitch-based carbon fibre dominated by Japanese producers, plus rhenium, niobium C-103 and germanium substrates. Industrial policy is responding. Analysis of South Korea's three-hub cluster strategy captures the wider pattern: governments still account for up to seventy per cent of upstream revenue, late entrants must master advanced materials and precision manufacturing simultaneously rather than sequentially, and defence-space convergence is the route most states are taking. Sovereign materials capability has become a strategic objective in its own right, not a by-product of space programmes, and export controls now shape supplier selection as firmly as price or performance.

The Global Market for Space Materials 2026–2036: Shielding, Thermal Management, Propulsion and Structures for the New Space Economy quantifies and analyses the global market for space-qualified materials over the period 2026 to 2036. It covers the materials that go into launch vehicles, satellites, crewed spacecraft, lunar and planetary platforms and in-space manufacturing systems — and, critically, it measures the value captured by materials suppliers rather than by the spacecraft primes and launch providers who buy from them.

Contents include:

Market drivers and the new space economy — launch cadence and reusability, cost-per-kilogram trajectory, mega-constellations, lunar and Mars programmes, defence space, OSAM, material qualification frameworks (NASA-STD-6016, ECSS, MIL-STD-1540, AS9100), the space environment, debris mitigation and demisability, and ITAR/EAR/EU dual-use export controls.

Radiation shielding materials — hydrogen-rich polymers, boron nitride nanotubes and h-BN composites, lithium-based shielding, multifunctional structural shielding, active shielding concepts, rad-hard electronics packaging and regolith-based habitat shielding.

Thermal management — multi-layer insulation, heat pipes and loop heat pipes, radiators, phase-change materials, thermal interface materials, pyrolytic graphite and carbon straps, thermal coatings and optical solar reflectors, cryogenic systems and emerging metamaterial radiators.

Structural composites — carbon fibre grades and resin systems, manufacturing routes, thermoplastics, sandwich structures, COPVs, cryogenic tanks, fairings, satellite buses, optical benches, nozzles and motor cases.

Chemical propulsion — storable and cryogenic propellants, hydrazine REACH phase-out, solid propellants, green monopropellants including ASCENT and LMP-103S, the ADN supply chain, and chamber, throat and nozzle materials.

Electric propulsion — Hall effect, gridded ion, FEEP and colloid thrusters; channel, cathode and grid materials; and the xenon, krypton, iodine and argon propellant transition.

Space-qualified photovoltaics, re-entry thermal protection systems, in-space manufacturing feedstocks and ISRU materials, and cross-cutting enabling materials.

Barriers to growth, supply chain analysis, full market forecasts 2026–2036, 136 company profiles and appendices covering standards, patents, regulation and research methodology.

Companies profiled include Agile Space Industries, Agnikul Cosmos, Airbus Defence and Space, Albany Engineered Composites, American Boronite Corporation, Arceon, ArianeGroup, Arinna, Arnold Magnetics, Astradyne, Astrobotic Technology, Astral Materials, Astroscale, ATI – Allegheny Technologies, Avio S.p.A., AZ Technology, AZUR SPACE Solar Power, BAE Systems Space, Bayern-Chemie / MBDA, Bellatrix Aerospace, Beyond Gravity, Blue Canyon Technologies, Blue Orbit Space, Blue Origin, BNNano, BNNT LLC, Boeing Space, Busek Co., Calyos, Canada Rocket Company, Carbice Corporation, Carbon Fly, CESI, COI Ceramics, Composite Technology Development (CTD), Cosmic Shielding Corporation, Ensign-Bickford Aerospace & Defense (TiNi), ENPULSION, Epsilon Composite, EURENCO Bofors, Euro-Composites, Exotrail, Firefly Aerospace, Flexell Space, geCKo Materials, GKN Aerospace, Goodfellow, Helios, Hexcel Corporation, IberEspacio, ICON, IHI Aerospace, Impulse Space, Infraprint, INNOSPACE, Interlune, Intuitive Machines, ispace inc., Isar Aerospace, Kl?ber Lubrication, Kongsberg NanoAvionics, KULR Technology Group, L3Harris Technologies, Leonardo S.p.A., Lockheed Martin Space, Lunar Outpost, Lunar Resources Inc., Magdrive, Markforged and more...

+357 96 030922
info@marketpublishers.com

Contents

7 ELECTRIC PROPULSION MATERIALS

+357 96 030922
info@marketpublishers.com

+357 96 030922
info@marketpublishers.com

+357 96 030922
info@marketpublishers.com

+357 96 030922
info@marketpublishers.com

List Of Tables

LIST OF TABLES

+357 96 030922
info@marketpublishers.com

+357 96 030922
info@marketpublishers.com

+357 96 030922
info@marketpublishers.com

List Of Figures

LIST OF FIGURES

+357 96 030922
info@marketpublishers.com

+357 96 030922
info@marketpublishers.com

+357 96 030922
info@marketpublishers.com

I would like to order

Product name: The Global Market for Space Materials 2026–2036: Shielding, Thermal Management, Propulsion and Structures for the New Space Economy

Product link: https://marketpublishers.com/r/G9621DA73FFDEN.html

Price: US$ 1,500.00 (Single User License / Electronic Delivery)

If you want to order Corporate License or Hard Copy, please, contact our Customer Service:
info@marketpublishers.com

Payment

To pay by Credit Card (Visa, MasterCard, American Express, PayPal), please, click button on product page https://marketpublishers.com/r/G9621DA73FFDEN.html