

Plastics for Spacecraft Applications



BENEFITS OF PLASTIC:

Specialty plastic materials with the following characteristics are often specified for spacecraft applications.

- Low outgassing
- Ability to operate in vacuum
- Wide operating temperature range
- Good sealing characteristics
- Resistance to corrosive chemicals
- Resistance to radiation
- Resistance to erosion from atomic oxygen
- Excellent flammability characteristics
- Vibration damping characteristics

Engineering materials to fulfill your needs

Curbell Plastics has a broad inventory of plastic materials to meet the demanding performance requirements of space vehicles, satellites, and spacecraft instrumentation for the spacecraft industry. We know this industry requires materials that stand up to extreme operating environments, and strictly adhere to specifications with lot and batch traceability.

Plastics are used for a wide range of spacecraft applications including bearings, optical lens centering rings, valve and regulator components, electrical insulators, radomes, and magnetometer components.

Material selection, expert advice

"We had a spacecraft valve application that involved corrosive chemicals and cryogenic temperatures. Curbell worked with us to find a plastic material that we could use for the sealing surfaces of the valve."

– Curbell Customer Feedback

TYPICAL APPLICATIONS:

- Antenna components including bearings, electrical insulators, and radomes
- Bearings and bushings
- Centering rings for optical lenses
- Electrical connectors
- Electrical insulators
- Magnetometer components
- Polymer locking elements for locking fasteners
- Poppets
- Seals
- Spline couplings
- Thermal insulators
- Valve seats
- Valve, solenoid, actuator, and regulator components
- Wheels and rollers

COMMON MATERIALS:

- ABS
- Acetal
- DuPont™ Vespel® Polyimide
- ECTFE
- ETFE
- FEP
- KYDEX® Thermoplastic Sheet
- Noryl®
- Nylon
- PAI
- PCTFE
- PEEK
- PFA
- Polycarbonate
- Polyester Film
- PPS
- PTFE
- PVDF
- Ultem®
- Polyimide Tapes
- MOMENTIVE® Silicone Adhesives



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