Global Supplier to the Aerospace Industry.
Adding value for aviation customers throughout the aerospace supply chain

The Mitsubishi Chemical Corporation, with its several Regional Headquarters, has the organisation and infrastructure to realise local and global synergies among the vast network of Mitsubishi Chemical affiliate companies. With over 40,000 employees at 358 affiliates in 30 different countries, Mitsubishi Chemical can now provide innovative solutions more effectively for customer applications.

Thanks to the intensified collaboration and coordination this enables on a regional and global level, Mitsubishi Chemical group companies are uniquely positioned to meet the changing demands of key industries including automotive, aerospace, medical, packaging, 3D printing and so on.

The quickly globalising aerospace market needs strong global partners with a sustained commitment to the aircraft industry. Mitsubishi Chemical is not only a truly global company with manufacturing sites all over the world; our extensive experience in the aircraft industry and our long-term strategy of further investments in this sector are mandatory ingredients of lasting partnerships in the aerospace market. In addition to state-of-the-art material technology, Mitsubishi Chemical’s technology portfolio creates many opportunities for manufacturers to adapt their materials not only to today’s requirements but also to tomorrow’s. Raw materials from Mitsubishi Chemical are already widely used to produce and optimise a variety of aerospace materials.

The tremendous industry pressure for more efficient materials is met with a variety of lightweight products with enhanced processing properties.

Our technical service and development teams can help you select the right materials from our broad portfolio to ensure that the best and most cost-effective solution is chosen for your application.

Considering that millions of component parts are needed to build just one aircraft, it is not surprising that the existing or developing supply chain is a key factor for the aerospace industry. The high degree of backward integration permits tight control over the quality of Mitsubishi Chemical materials as well as a smooth and flawless global supply chain that has become one of the most important determinants in the aircraft industry.

Mitsubishi Chemical’s global approach to the industry is invaluable for customers throughout the world. Our material seminars and application assistance benefit both prime contractors and tier 1 and 2 suppliers. We offer a total solution approach in which either semi-finished products like prepregs and shapes, chemical raw materials and carbon fibres or finished solutions such as adhesive tape and composite parts are supplied through one of our Technical Centres or Fabrication Partners.

Global footprint with 358 subsidiaries and affiliates*  

*As at April 2018
Mitsubishi Chemical’s technology portfolio for the aerospace industry

Offering the largest portfolio of valuable products that are able to add something new to the aerospace industry. Our offering for the aircraft industry is illustrated through latest technologies based on high quality backward integrated materials.

### Mitsubishi Chemical’s Technology Portfolio for the Aerospace Industry

- **Additives for paints and adhesives**
  - Epoxy resin
  - High performance (PEEK and PEI) films
  - Alpolics aluminium composites
  - MAFTEC – aluminium fibres

- **Carbon fibres (Pyrofil PAN & Dialead Pitch)**
  - Grafil – PAN fibres
  - Carbon fibre prepregs (phenolic, vinyl, epoxy-based)
  - SMC compounds
  - Prepregs for composite tool manufacturing
  - Aircraft damping panels
  - GLARE fibre reinforced metal sheets
  - Toeing technology

- **PMMA raw materials and compounds**
  - Kyron®Tex - fibre reinforced thermoplastic composites
  - Engineering plastics shapes for machining
  - Engineered solutions and parts
  - TP pipes and tubes
  - Support materials for composite manufacturing
  - KyronMAX® – high strength compound
  - High precision moulded and machined parts and subassemblies

- **GEMINI**
  - Engineering services for composites

- **MITSUBISHI CHEMICAL**
  - Composite parts

- **G-Tape**
  - Adhesive tapes for flooring and MRO
  - G-Polymer – water soluble core material

- **RYOKO CO., LTD.**
  - Metallised PC sheet

- **Mitsubishi Engineering Polymers**
  - Thermoplastic engineering polymers eg Polycarbonate

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*Mitsubishi Engineering Plastics is a joint venture between Mitsubishi Gas Chemical (50%) and Mitsubishi Chemical (50%).*
A great challenge for the aerospace industry

For aircraft maintenance, repair and overhaul (MRO) providers, maximising punctuality is key to maximising profitability. Aircraft and components are extremely costly resources and downtime can take a heavy toll on the airline.

Mitsubishi offers materials and technical solutions that not only improve the reliability of components and reduce the complexity of subassemblies; they also allow systems to be optimised for longer maintenance cycles.

Several products offer opportunities for implementing advanced materials and technologies while upgrading aircraft. The consistently high quality and availability of these products over a long period of time can only be guaranteed if effective control exists over the upstream supply chain. Aviation MRO companies must maintain their operational agility if they are to provide more services and increase their profit.

Tooling solutions
Our special service and know-how

With composite technology becoming more and more dominant in the aerospace industry, Mitsubishi Chemical has developed an extensive portfolio of elements to take composite manufacturing to the next level.

Whereas zero CLTE prepregs are used in the manufacture of high precision tooling, water soluble polymers like G-Polymer or accurately machined, high temperature resistant core materials pave the way for designing new structures. Furthermore, Mitsubishi Chemical's wide range of film products opens up new avenues for composite manufacturers.
A fully integrated and independent supply chain – our greatest strength

**SOLUTIONS**
- Composite part manufacturing technology
- FEM analysis
- CAE design
- Metal replacement
- High precision machining
- Downstream operations (assembly)

**TECHNOLOGIES**
- Thermoplastic processing technologies
- CFRP prepreg manufacturing
- PCM
- CFRTP
- Adhesive tapes for removal without tools

**MATERIALS**
- Epoxy polymers
- Thermoplastic polymers
- PAN and pitch based carbon fibres
- Fibre reinforced sheets
- Damping materials
- High performance plastic compounds
- Aluminium composite materials

**CHEMICALS**
- MMA monomer and derivatives
- Acrylonitrile and related products
- Curable materials (monomers, oligomers and polymers)
- Raw materials and modifiers for coatings, adhesives and polymers

Mitsubishi Chemical Corporation
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KAITEKI Value for Tomorrow
Mitsubishi Chemical Holdings Group

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