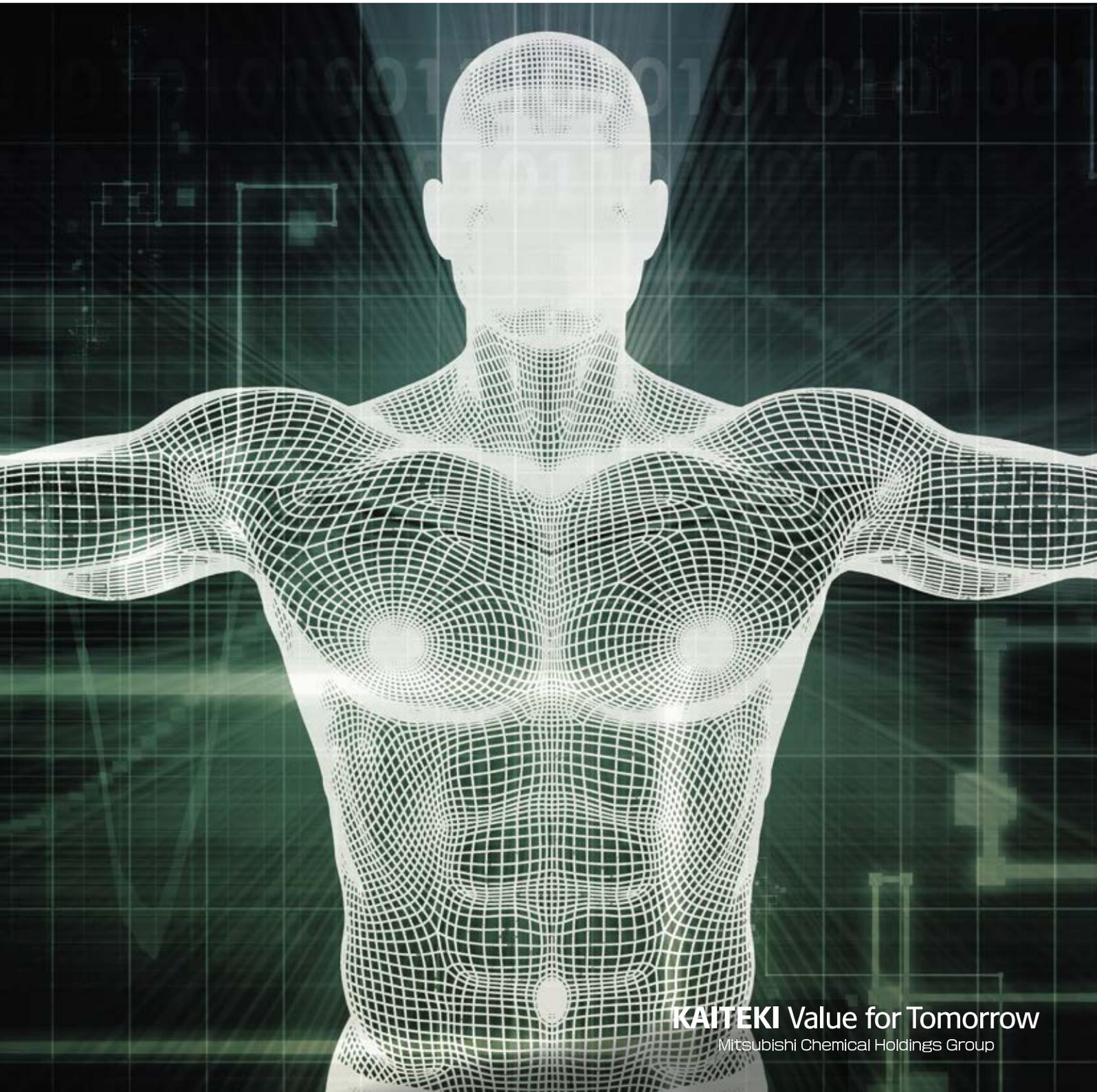




Chemicals. Materials. Technology. Solutions.
Global supplier to the medical and healthcare industry



KAITEKI Value for Tomorrow
Mitsubishi Chemical Holdings Group



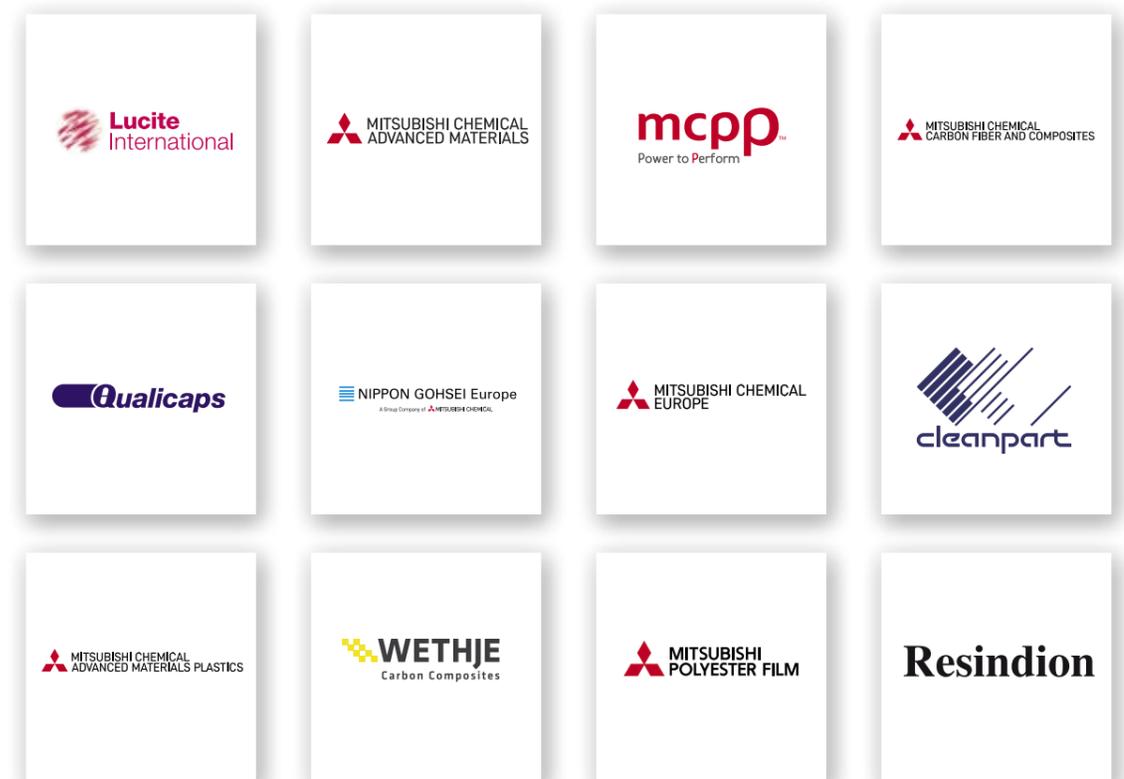
Medical and healthcare solutions – bringing KAITEKI Value to everyone

Mitsubishi Chemical and its group companies are dedicated to the medical and healthcare industry bringing KAITEKI Value for tomorrow to everyone.

Mitsubishi Chemical group companies integrate a wide range of proprietary technologies and services for the medical and healthcare industry. Our offering includes various solutions ranging from raw materials to finished goods and services in different sectors like medical devices, implant materials, dental, medical packaging, pharmaceutical applications and diagnostics.

The increasing medical and healthcare sector is a complex industry in which customers value our technologies and solutions that we offer and create through use of highly specified materials, innovative engineering capabilities, product development know-how, services and its state-of-the-art manufacturing sites.

As a leading chemical company we aim to create technological, industrial and true social value.



Medical devices and services

As a leading chemical company we offer a full solution, ranging from high-performance materials to development and production and various services for medical technology. Cooperating closely with medical device manufacturers we understand technical compliance and regulatory aspects associated with the use of polymers in medical and Life Science applications, including materials for medical implants. Therefore, Mitsubishi Chemical can provide you with the right technical choice supported by regulatory and compliance expertise.

Development and Production

Combining our engineering capabilities and technical knowledge with high quality materials, modern manufacturing sites, including cleanroom facilities, and a high degree of automation and automated quality assurance, many customers value our product development and production know-how. Production processes include machining and injection moulding.

Our high performance materials

The product range includes life science grade materials and parts, acrylic bead polymers, carbon fiber compounds as well as polyester films e.g. for use in optical applications, as orthopedic target devices and trail implants, for light-weight structural applications etc.

Materials we offer:

- Life Science Grades (LSG) PEEK, PPSU, PSU, PEI, PC, Proteus
- Diakon® Acrylic bead polymer
- Carbon Fiber Forged Molding Compound (CF-FMC)
- Pre-Impregnated Carbon Fibers
- Hostaphan® Polyester Film

Cleaning, surface treatment and coatings

Our services include selective and biocompatible DLC coating with IKOS-Dynamant® for dental implant drills as well as macro- and microstructuring of dental implants by grit blasting and chemical surface etching.





Implant material

We support Medical Device Manufacturers and Life Science companies with a team of material and industry experts fulfilling compliance and biocompatibility requirements. Our offering includes products which comply with FDA, ISO 10993 and USP guidelines for biocompatibility testing of materials, saving testing costs and time while providing full traceability from raw material to stock shape. We also supply acrylic polymers and resins for use in bone cements and implantable mouldings.

Implantable UHMW-PE and PEEK

Our implant products have long-term record in orthopaedic joint replacement; such as Hip, Knee, Elbow, Shoulder and Spine. MediTECH's medical grade UHMW-PE is manufactured to ISO 13485. Our Extrulene™ product is a ram extrusion based material available in various rod and profile diameters utilizing our newest Near Net Shape Technology. Our Chirulen® product is a compression molded material available in multiple forms including sheets, rods, cut-to-size and custom preforms. All products are market leading for use in today's highly cross-linked Polyethylenes and as per customer requirements. Our products are completed by antioxidant additives like Vitamin E, HALS, customers antioxidants and others.

Additionally we offer implantable PEEK (Zeniva® PEEK) as extruded stock shapes. Stock shapes produced from Zeniva® PEEK are high-performance biocompatible polymers used primarily for spinal implants, pacemaker components, and cardiovascular connectors.

Acrylic bone cements

Acrylic bone cement powders formulated with our Colacryl® (PMMA) resins manufactured to ISO 13845 are used during arthroplasty procedures to secure hip, knee and shoulder joints. They are also used in vertebroplasty and kyphoplasty operations for repair of vertebral compression fractures.

Acrylic implantable mouldings

PMMA resins can also be used to prepare mouldings use as femoral stem centralisers and spacers.





Dental

Highest quality acrylic polymer for the dental market. We have established a comprehensive range that includes: Heat cure denture polymers, auto-polymerizing polymers for full and partial dentures, tooth polymers and orthodontic polymers.

Highest quality acrylic polymer

Over the last seventy years we have established an outstanding reputation for supplying high-quality acrylic polymers to the international dental market. Today, we have a comprehensive range of Colacryl® and Lucite® branded acrylic resins, and are committed to continuously improving our products to meet future requirements.

Quality assured in all we do

Our close relationships with the world's leading dental manufacturers, alongside industry experts specializing in cutting-edge technologies, allow us to continuously innovate. Our manufacturing and quality systems are certified to the design standards ISO 9001:2015 and ISO 13485:2016.

Comprehensive product range

- Heat cure denture polymers: a range of performance characteristics with the flexibility to be fast or slow cured without porosity
- Auto-polymerizing polymers: for full and partial dentures, repairs and relines
- Tooth polymers: high molecular weight and cross-linked polymers for increased hardness
- Orthodontic polymers: acrylic powders with free flow behaviour and rapid absorption of dental liquid
- Specialist applications: covering crown and bridge polymers, tray polymers, chair-side reline polymers and ear mold polymers





Medical Packaging

We offer different film materials and solutions with excellent physical and hygienic properties, low specific gravity that enables lightweight products and excellent flexibility. Recommended for medical applications such as medical packaging, infusion bags/bottles, tubes and seals.

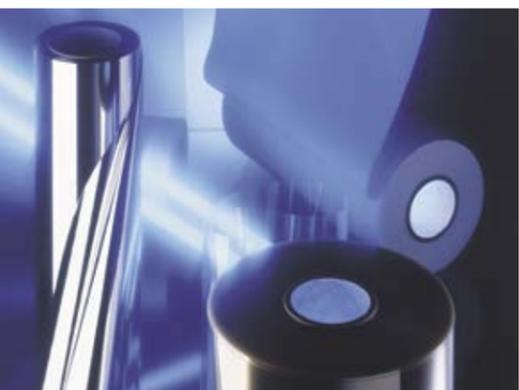
Polyester Films

Lifestyle diseases, shifts in the age pyramid and the associated age-related illnesses are only some of the drivers for numerous new developments in the medical sector. Materials such as oriented polyester films often play an important role.

Adherence to complex documentation and regulatory requirements, sound knowledge and experience in demanding applications, delivery consistency and a desire for long term cooperation are key aspects that distinguish HOSTAPHAN® as a high grade and recognised film in the market.

Water-soluble PVOH film

Our water-soluble PVOH film Hi-Selon® is used as packaging material for solidifying agents to ensure easy and safe handling of fluid waste from suction bags. They minimize the risk of accidental spills or contact with potentially infectious waste during transportation, making the working environment of nursing and cleaning staff safer.





Pharmaceutical application

We offer excipients such as Polyvinyl Alcohol (PVA) used as granulation binders, binding agents, film coatings and substrate for orally disintegrated films as well as pharmaceutical grade capsules and lubricants for tableting.

Polyvinyl Alcohol

A wide range of our highly purified Polyvinyl Alcohol (PVA), GOHSENOTM EG, enables customers to choose appropriate grades for their particular application.

Low viscosity grades are preferably used for binders and film coating agents due to their excellent solubility in water. The excellent barrier properties enhance the stability of drugs against oxygen and moisture and the superior binding strengths enables to increase API contents and decrease the size of tablets.

High viscosity grades are preferably used for liquids and gel patches due to their miscibility and adhesive properties and as thickeners for ophthalmic and nasal solutions as well as emulsifiers for preparation of microsphere.

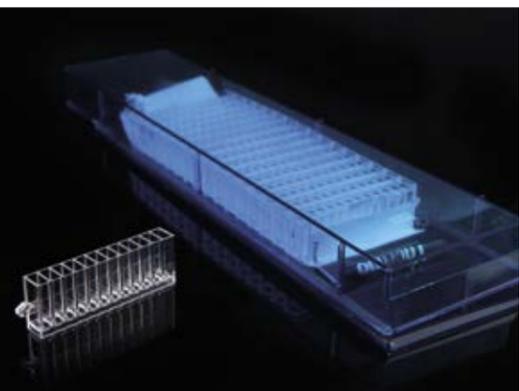
Capsules

We produce high-quality pharmaceutical grade gelatin and vegetal capsules, and offer them in a wide range of sizes, colors and print options for your product to stand out in the market.

Lubricant/Emulsifier

Our non-ionic emulsifiers are highly refined sucrose fatty acid esters available in a wide HLB range and used in many pharmaceutical applications. Our SURFHOP^E SE PHARMA grades are US DMF listed.





Diagnostics

In our diagnostics segment we have a wide offering of products ranging from high grade polyester films and raw materials like acrylic bead polymers to injection moulded solutions, diagnostic reagents and a small immuno analyzer.

Polyester Films

High grade polyester films which can be used in diagnostic strips such as blood glucose and coagulation strips.

Diagnostic Reagents

A broad range of diagnostics reagents as bulk/OEM material have been successfully adapted on a series of different clinical chemistry and coagulation analyzers.

Immuno Analyzer

The PATHFAST™ system is providing fast, differential diagnosis and is easy to operate, install and network. High precision makes the compact analyzer an adequate "satellite" of a full-scale laboratory on a cardiology, intensive care or emergency ward. Parallel processing enables the examination of six critical samples in only a few minutes from whole blood, serum or plasma.

Acrylic bead polymers

Our high quality acrylic bead polymer is used extensively for injection moulded diagnostic cuvettes. Diakon® PMMA Polymer bead is designed specifically to provide optical purity and excellent light transmission in both visible and UV regions.



Mitsubishi Chemical offers medical and healthcare solutions ranging from raw materials to finished goods and services in different sectors.



CHEMICALS



MATERIALS



TECHNOLOGIES



SOLUTIONS



Mitsubishi Chemical Corporation
www.m-chemical.co.jp

KAITEKI Value for Tomorrow

Mitsubishi Chemical Holdings Group

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