

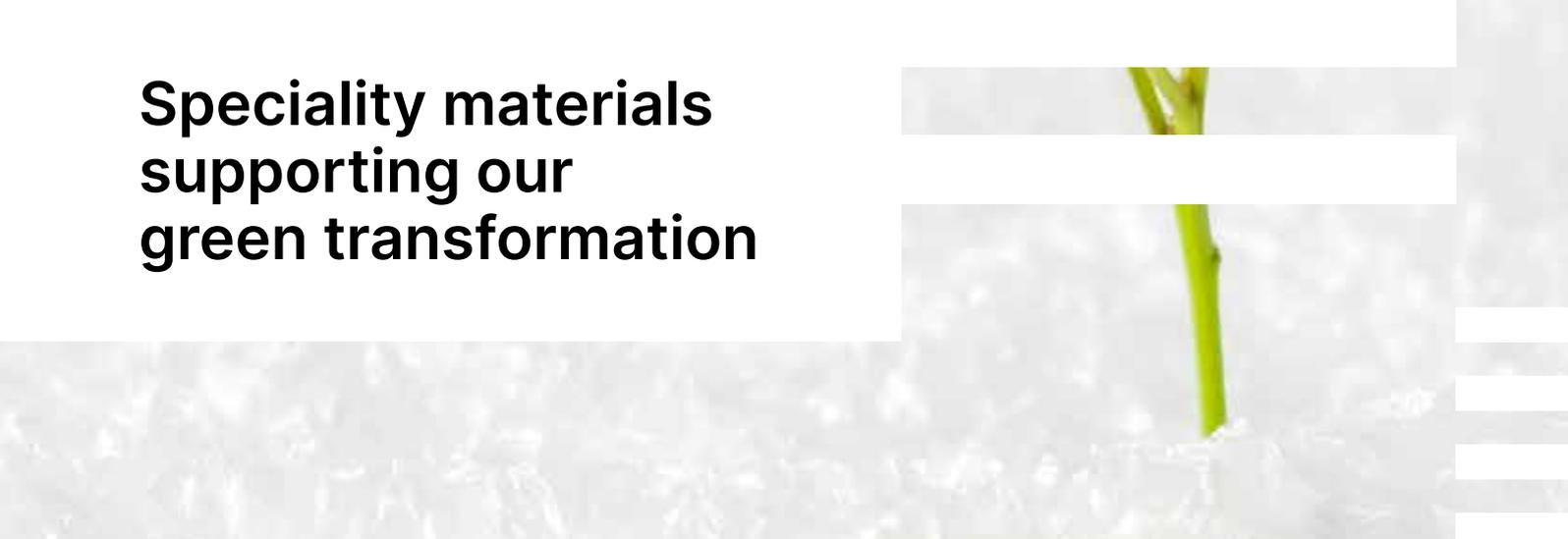


Innovative packaging

Global Solution Provider



**Speciality materials
supporting our
green transformation**



Innovative packaging solutions for any case

- Raw Materials
- Processing
- Packaging Solutions
- Recycling
- Compostability



With a vast network of affiliate companies, the Mitsubishi Chemical Group has both the organisation and infrastructure to realise local and global synergies. Over 70,000 employees work in 30 different countries to deliver innovative solutions for customer applications.

Thanks to the intensified collaboration and coordination 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 and 3D printing.

The quickly globalising packaging market is in need of strong global partners with a sustained commitment to the packaging industry. Mitsubishi Chemical Group is a truly global company with manufacturing sites all over the world. Our extensive experience in the packaging industry and our

long-term strategy of further investments in this sector are crucial ingredients for a lasting partnership with the packaging industry. In addition to state-of-the-art material technology, Mitsubishi Chemical Group's technology portfolio creates many opportunities for manufacturers to adapt their materials to the requirements of today and tomorrow. Materials from Mitsubishi Chemical Group are widely used to produce and optimise a variety of packaging materials.

The tremendous industry pressure for more environmentally friendly materials is met with a variety of innovative products with enhanced processing properties.

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



End of life options as a new opportunity for the packaging industry

Reduce, Re-use, Recycle

Beyond the actual functionality and performance of packaging, end of life considerations are of growing importance when designing state-of-the-art packaging.

Our materials support our customers to fulfil market demands by offering added values in different levels of the supply chain:

- High functionality for packaging weight and resource reduction
- High gas barrier properties and chemical resistance
- Adhesion and compatibility
- Biobased products
- Compostable solutions (organic recycling) for waste recovery and reduction
- Films with high PCR-content
- Monomaterials
- As Mitsubishi Chemical Group we can even offer the full range of materials to design compostable barrier structures.

Processing

In addition to materials for the actual packaging, we also offer high performance semi-finished shapes and finished machined parts to support efficient processing of the packages during filling, packing and other levels of the supply chain.

Tooling solutions

Our special service and know-how

Combining the expertise and know-how of our global teams, we gladly support you in addressing your individual challenges. In the portfolios of our respective divisions, you will find everything from films to additives and coatings to all important building blocks for the construction of solutions that are practical, safe and also sustainable.



Mitsubishi Chemical Group's technology portfolio for the packaging industry

Barrier Packaging

SOARNOL™

Ethylene-vinyl alcohol copolymer (EVOH) is a sophisticated high gas barrier resin mainly used to produce packaging materials for preserving freshness and flavor whilst reducing food waste. SOARNOL™ can be extruded by all main processing techniques (cast or blown film, blow molding, coating, etc.) and provides as well excellent transparency, thermoformability, orientability and chemical resistance.

Nichigo G-Polymer™

Nichigo G-Polymer™, a butenediol-vinyl alcohol copolymer (BVOH), is the next generation of vinyl-alcohol resins. With several unique properties based on proprietary "G-Technology", the key benefits for barrier packaging include superior gas barrier properties, high transparency while also providing biodegradability and extrudability for use in compostable or in conventional high gas barrier packaging.

MODIC™

High performance anhydride grafted tie-resins and specialised peelable solutions providing high performance in multi-layer barrier structures. Our MODIC™ tie-resin portfolio includes innovative solutions for dilution, high orientation and as compounding specialists we also offer customised solutions based on customer requirements.

Food and liquid storage

TEFABLOC™

Customised TPE solutions designed for easy molding on conventional plastics as well as technical plastics, soft touch effects and improved grip. Suitable for closures and sealing for reusable / reclosable packaging and food storage boxes.

Biodegradeable/Biobased and water soluble

Hi-Selon™

An eco-friendly, water-soluble polyvinyl alcohol (PVOH / PVA) film suitable for packaging detergents, agrochemicals and other chemicals.

GOHSENL™

GOHSENL™ a poly-vinyl alcohol (PVOH), is an environmentally friendly, biodegradable, water-soluble synthetic resin. Its superior properties make it ideal for use as paper processing chemical, emulsion, suspension, adhesive and binder in diverse fields.

GOHSENX™

GOHSENX™ is a series of specially modified poly-vinyl alcohol resins. They include: GOHSENX™ Z series which provides easy cross-link ability and water resistance and GOHSENX™ T series which provides excellent water solubility and cross-link ability.

FORZEAS™

Our range of customised compostable compounds, designed to pass the most stringent composting standards for flexible and rigid packaging, with or without any barrier, in respect to international standards and local policies.

BioPBS™

BioPBS™ (bio-based polybutylene succinate) is a bio-based and biodegradable polymer, developed based on advanced technology from Mitsubishi Chemical Group. Derived from natural resources, such as corn or sugarcane, BioPBS™ has been designed to be compostable in dedicated facilities into biomass, carbon dioxide and water, in respect to international standards and local policies.

DURABIO™

DURABIO™ is a bio-based polycarbonate resin derived mainly from plant-based isosorbide. Main properties of DURABIO™ are high transparency, excellent optical properties, good chemical resistance and outstanding scratch resistance. Its puncture impact behaviour is comparable to those of PC. DURABIO™ has excellent durability and is therefore not biodegradable.

Films

HOSTAPHAN® for Monomaterial Packaging

This HOSTAPHAN® film is a biaxially oriented polyester film for monomaterial packaging e.g. food trays. The thermoformable ultra clear bottom film fits to the ultra clear lidding film. Our brand new solution for ovenable and microwave applications.

TECHBARRIER™

TECHBARRIER™ is a SiOx vacuum coated high gas barrier film based on PET and a special top coat with extraordinary barrier properties. Due to our unique technology, the film keeps its high barrier properties even after printing and lamination processing. In addition, we are developing advanced OPP-based films with high performance to satisfy the current strong demand for monomaterials.

HISHIFLEX™

HISHIFLEX™ is a multilayer co-extruded film for thermoforming packaging. Main applications are meat and cheese packaging. The characteristics of various resins are utilized to add functions such as formability, pinhole resistance, transparency and sealing properties to films. PA-FREE composition is being launched for environmental friendliness.

DIAWRAP® polyolefin stretch film

DIAWRAP® is a multilayer, coextruded, clear polyolefin stretch film with optimal properties. The film exhibits excellent processing behaviour. It is free of solvents and phthalate plasticisers. Further, due to its 3-layer construction, it offers an excellent seal via melting of both surface layers.

Thermoplastic Stock Shapes

Ertalyte® TX PET-P

Ertalyte® TX is a polyethylene terephthalate compound incorporating a uniformly dispersed solid lubricant. This premium, internally lubricated material is bearing grade with outstanding wear resistance and, compared to standard PET-P, an even lower coefficient of friction and higher pressure velocity capabilities. Ertalyte® TX stock shapes feature a food contact compliant composition for processing and packaging applications.

Acetron® VMX Food Grade POM-C

This unique POM-C thermoplastic outperforms all other leading brands as the most consistently detectable material across multiple food types and conditions. The material is the leading industry choice for food safety and efficiency today. Key characteristics include optimal balance of stiffness and impact strength, superior dimensional stability, continuous use temperature up to 105°C (221°F) and a highly visible blue color. Applications are scrapers, funnels, guiders, grippers, gears, and cutting blades.

TIVAR® HPV UHMW-PE

This high performance UHMW-PE grade provides high wear resistance combined with a near zero level of "stick-slip" which is mostly associated with chatter and/or squeaking. It provides high motion control for precision applications in the packaging industry.

Ketron® TX PEEK

This product has been developed especially for applications that require food contact compliant composition combined with internal lubrication. The material offers superior wear and frictional performance making it especially suitable for a wide variety of bearing and wear applications within 100 to 200 °C service temperature range.

Offering products that
make a positive contribution
to our environment



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