



# Advanced Fluid Management Technology

Technology | Chemistry | Durability | Sustainability





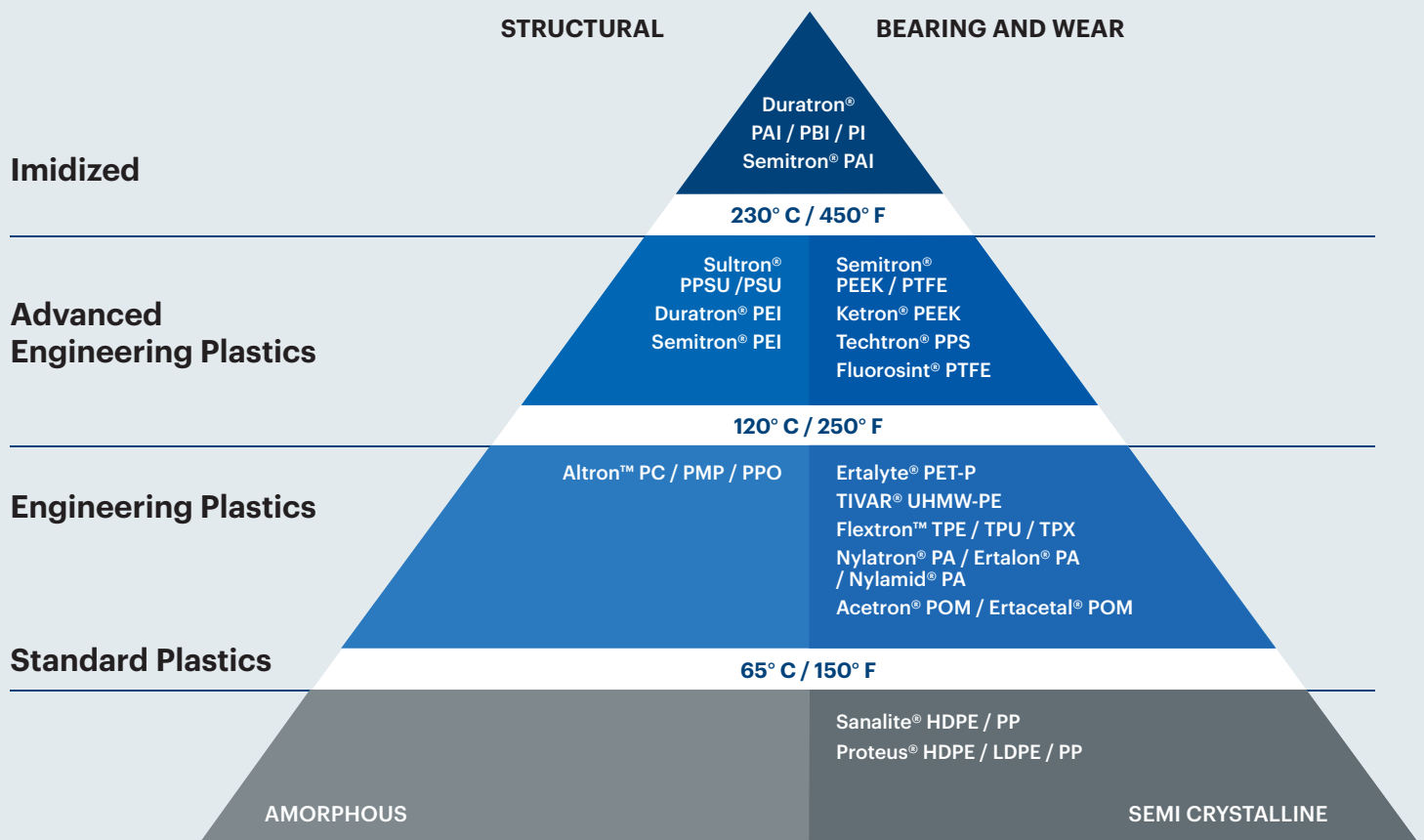


# Custom Fluid Management Solutions

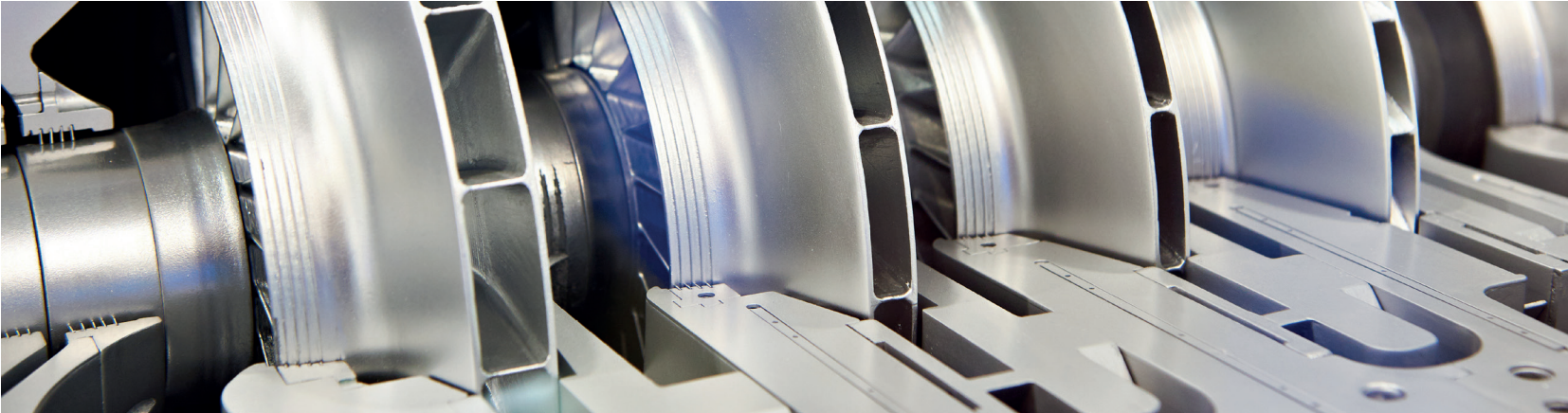
Mitsubishi Chemical Group is a leader in the development of advanced materials used in the transport and processing of gas and fluids across applications in various industries, including the Energy Market. We are vertically integrated with proven high-performance thermoplastics, advanced manufacturing equipment, robotics, applications engineers, and business teams that share market knowledge to support your idea to a finished component.

## Making Innovation Possible in Advanced Fluid Management

Developed to meet and exceed global and regional OEM specifications, our extensive portfolio of advanced engineering materials enables more durable, safe, and efficient operations. Due to extended service life considerations and our commitment to sustainability, our broad range of engineering plastics helps deliver both economic and environmental benefits across fluid management applications.



\*Materials should be considered for applications up to approximate maximum temperature. Selecting a plastic material for use in a high temperature environment requires careful review of material properties data. This chart is for comparison purposes only.



## High-Performing Polymers

Our high-performing polymers offer a range of properties engineered to maximize chemical and thermal resistance and provide mechanical endurance at extreme temperatures and pressures.

Product	Description	Temperature Range
Fluorosint® PTFE	Specifically designed to excel in demanding bearing and seal applications.	250°F to 450°F
Ketron® PEEK	Semi-crystalline advanced engineering material that exhibits a unique combination of high mechanical properties, temperature resistance, and excellent chemical resistance.	250°F to 450°F
Techtron® PPS	Offers the broadest resistance to chemicals of any advanced engineering plastic, has excellent electrical characteristics, and is inherently flame retardant.	250°F to 450°F
Duratron® PAI	Highest-performing, melt-processable plastic that has superior resistance to elevated temperatures.	450°F - 800°F
Kyron	MCG uses a proprietary process to produce Kyron composites to maximize chemical, thermal resistance, and mechanical properties over standard polymer materials to assure performance in extreme and high-pressure applications (Nylon, PPA, PPS, PEEK, and others).	Varies based on composition



# Advanced Fluid Management Applications

## Application: Compressor Valve Plate & Labyrinth Seals

- Improved fatigue resistance and toughness
- OD sizes from 3 in. to 16 in. (7.6 cm to 40.6 cm)
- Tight tolerance flatness and stress-free
- Blanks offered in-ground or underground finishes

## Application: Dissolvable Components

- Industry-leading mechanical performance
- High compressive strength and impact resistance
- High-pressure/high-temperature applications
- Kyron custom formulation

## Application: Custom Machine Components

Our expertise in machining and fabricating custom components comes from understanding the factors critical to component design, the influence of reinforcements, additives, and the effects of processing and tool design. This includes creating backup rings, seals, wear pads, bushings, bearings, gears, rollers, valve plates, poppets, connectors, frac balls, bridge plugs, dissolvable components, bumpers, sheaves, and other critical or demanding (subsea and land rig) components up to **800° F.**





# Engineering Capabilities and Technical Services

## Material Selection Assistance

- Material selection for optimal performance and cost efficiency
- Customer-formulated materials for customer-specific applications
- Reverse engineering and material identification

## Design Assistance and Evaluation

- Metal-to-plastic conversion expertise and structural failure consultation
- Design parts for ease of manufacturing and cost reduction
- Composite materials design assistance and education

## FEA Structural Mold Analysis

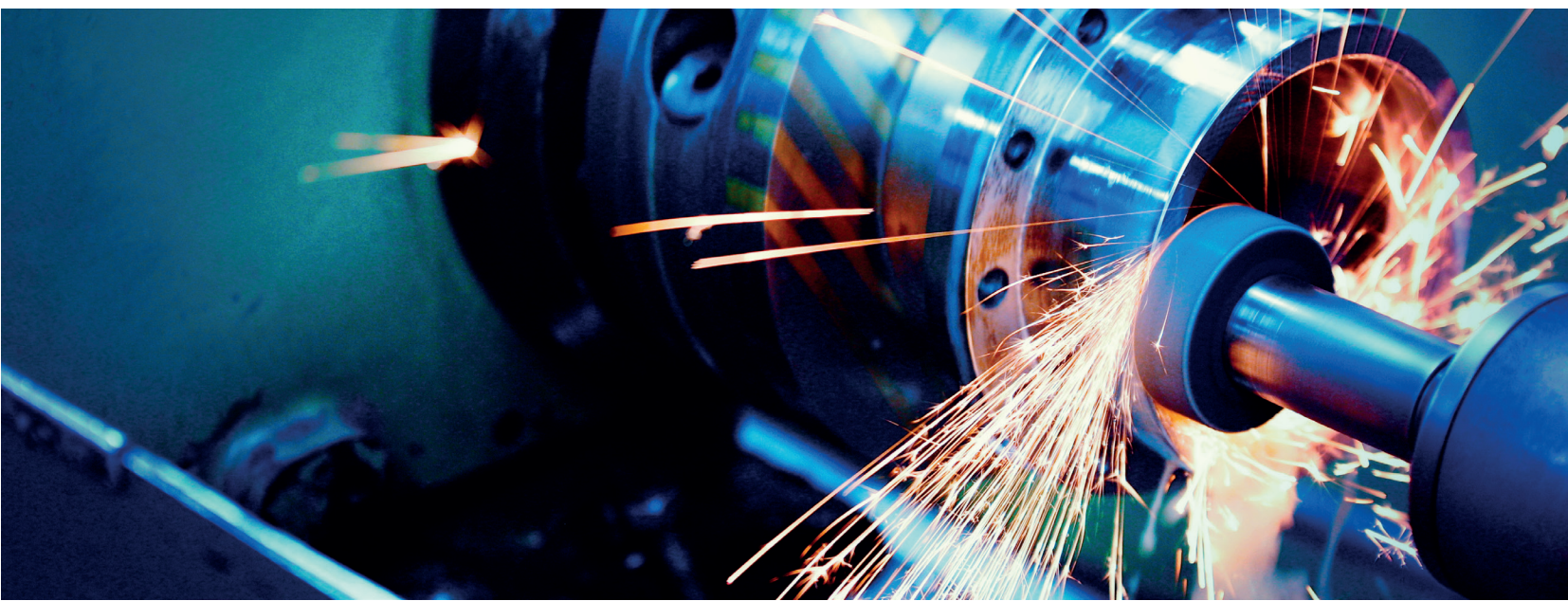
- Part design assistance for optimal mechanical performance
- Structure analysis for non-uniform properties due to fiber orientation
- Evaluate part stress and effects with various polymers

## CNC Machining, Injection Molded Finished Parts, and Robotic-Assisted Manufacturing

- Tight tolerance CNC machining and precision injection molding
- Near net process technology to produce thick section, porosity-free structural parts
- Material optimization tailored to engineering requirements

## Additive Manufacturing

- Faster, more affordable product development and design flexibility
- Economic, low-volume production
- Quick prototyping and accurate manufacturing of high-strength parts







## Sustainability

Our technologies and services make lead times quicker, keep parts in use longer, and provide better value – all with expert support from concept to functional part. Through extensive collaboration with chemists and engineers, our portfolio of long-lasting, and sustainable materials improves safety, durability, and efficiency across advanced fluid management.

In line with our KAITEKI philosophy, our offering also helps enable a circular economy and reduce the carbon footprint, while also ensuring that our customers' equipment won't fail and harm the environment.





**[www.mcam.com](http://www.mcam.com)**

Engineering & Design | Polymer Development | Precision Machining | Injection Molding | Additive Manufacturing | Distribution  
ISO 9001 | ISO 13485

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