

High Performance Polymers

AURUM™ Thermoplastic Polyimide

naturally PFAS-free!

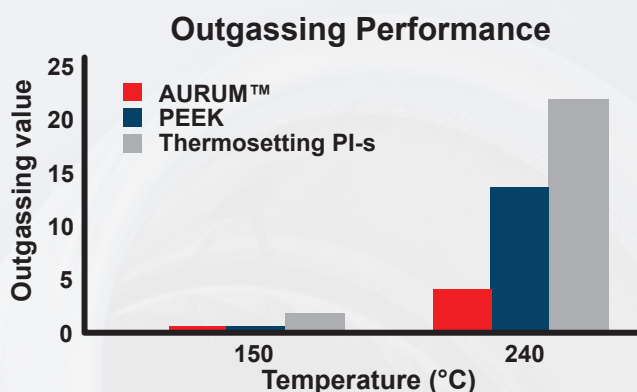
AURUM™, a thermoplastic polyimide resin by Mitsui Chemicals, distributed by BIEGLO GmbH is gaining increasing attention for its exceptional performance.

Growth is driven by its unique combination of thermoplastic processability — enabling injection molding and extrusion — together with outstanding heat resistance, mechanical strength, and electrical properties.



AURUM™ offers the processability of a thermoplastic and superior wear and friction properties of advanced thermoset.

AURUM™ production removes impurities to such an extent, that it is used in laboratory equipment and satellites, applications where low outgasing properties at high temperatures are essential.



AURUM™	Grades (Pellet form)	Application Examples
Natural	PL450C	films, tubes, semiconductor manufacturing equipment and cable coatings
	PD450 powder	Bus-bar and other powder-coatings
Glass Fiber	JGN 3030	machine components as insulated bushes and gears Electrical and Electronic parts including sockets and connectors
Carbon Fiber	JCN 3030	structural parts in aircraft, automotive applications and industrial equipment
Wear & Friction	JCL 3030	seals, washers, bearings - industrial equipment components and HDD parts



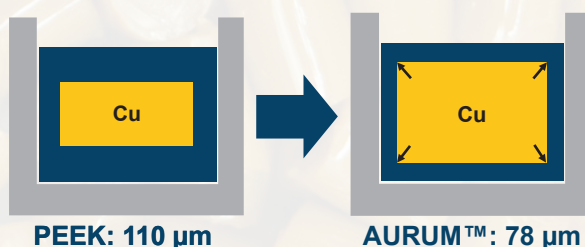
Thermoplastic Polyimide Electrical Insulation

AURUM™ enables high efficiency production of cables: High Temperature resistance and good elasticity coupled with strong adhesion on metals are the mechanical advantages. Polyimides also resist very well to Hydrocarbons as in cooling oils and prove to have good electrical insulation properties. AURUM™ contain no PFAS.



Challenges	Our Solution – AURUM™
Heat Dissipation inside the engine	translucent AURUM excels
Production efficiency	Extrusion coating – 1 layer of thermoplastic
Move to 800 V and 1.000 V	AURUM™ allows for higher copper fill factor
Thinner and lighter cables	AURUM™ enables cable-producer to improve
Higher power density	High Tg of 245°C – highest of any thermoplastic

Compared to PEEK an AURUM™ insulation can be 25% thinner or at same Insulation thickness a 15% higher voltage can be achieved



Calculated PDIV: 1000 V from dielectric constant at 200 °C



naturally PFAS-free!

Property	Unit	AURUM™	PEEK	PAI	Epoxy
Coating Process		Extrusion	Extrusion	Dipping	Dipping
Tg /Tm	°C	245/388	143/343	275 / -	~200 / -
Breakdown Voltage	23°C	28	21	24	-
	180°C	36	23	-	-
Dielectric Constant	1 kHz	3.3	3.2	4.0~4.6	3.4~4.4 (1 GHz)
	200°C	3.2 (1.0 kHz)	4.5 (50 kHz)	4.2 (1.5 kHz)	-
PDIV* 100 µm, 200°C	V	(1,100)**	(960)**	(990)**	-

* Partial discharge inception voltage

** Calculated from Dakin formula

