Material Solutions for the Food & Water Industries

Transforming industries and improving lives through material science.

The foundation of everything we do at DuPont centers around what our customers need. It's not just about the solutions we innovate, but also how we work with our customers.

Through our worldwide network of innovation and technical centers, our leading researchers work in close collaboration with customers, from concept to commercialization, using a wide range of processing, prototyping technologies and testing expertise.

Our company's longstanding history and commitment to innovation enables us to solve all challenges and explore all opportunities in these ever-evolving markets.

We offer a comprehensive range of engineered materials optimized specifically for components that come into contact with potable water and food. Our offerings are built on years of experience of providing polymers for use in a variety of food contact and potable water applications. Each product is available in a spectrum of grades that enable our customers to select the right materials for each project.

Market trends and challenges

The food and water industries have trended toward stringent regulations focused on safety—not only as it relates to end-use products and devices, but also as it applies to the assembling, handling and storage stages.

The industries are also increasingly in search of products that are more efficient, reliable and durable—products that, among other requirements, can withstand harsh cleaning agents and perform well in thermal shock environments.

DuPont solutions

Based on our offering of the broadest portfolio of engineered polymers available, DuPont has proven to be a reliable and innovative material supplier for the food and water industries.

DuPont engineered polymers, for example, provide global food packaging solutions that guarantee endurance through shipping, handling and storage, offering protection from external elements such as heat and contamination.

With Delrin® acetal homopolymer, Crastin® PBT and Rynite® PET, Zytel® polyamides and Hytrel® TPC-ET, DuPont offers a comprehensive range of resins optimized specifically for demanding markets.

All below listed DuPont materials are manufactured in accordance with Good Manufacturing Practice (GMP) principles and are supported in food contact applications in Europe (EU 10/2011) and the USA (Federal Food, Drug and Cosmetic Act) with limitations. Some grades are also recommended for potable water contact according to NSF 61, WRAS, ACS, KTW/KTW-BWGL as well as W270.

Prioritizing sustainability

DuPont makes it easy for customers to pursue both their short- and long-term sustainability goals. Our innovation culture embraces green chemistry principles, which guide everything we do in pursuit of our purpose—to empower the world with the essential innovations to thrive.

Renewable grades of Delrin® and Zytel® are available with food and water contact approval.

Delrin® Renewable Attributed (RA) base polymer, for example, is produced from 100% bio-feedstock from waste. It is produced from 100% certified renewable electricity, steam sourced via municipal waste energy recovery and offering the same quality, performance, processing and sensory experience as Delrin®.

The United Nations 17 Sustainable Development Goals served as guiding principles for DuPont's nine ambitious and measurable sustainability goals, to be achieved by 2030. Our annual sustainability report details our progress: dupont.com/sustainability.

Applications

Water

- Sanitary ware
- Plumbing
- Pumps, impellors and housing
- Filtration
- Meters

Food

- Food processing – appliances, equipment (mixers, bearings, wheels); professional utensils
- Food handling – conveyors, brushes, crates, kitchenware (utensils), shovels
- Food packaging – closures, capsules, casings, containers, dispensers

Our products

Crastin®

Designers, engineers, and manufacturers rely on Crastin® PBT for stiffness and toughness and exceptional surface finish. Crastin® is also preferred for its excellent dimensional properties and stability versus moisture, as well as its heat resistance. DuPont™ Crastin® PBT also offers manufacturers the advantage of superior flow qualities.

Portfolio Category	Product	Color	Food Contact			Potable Water Contact						
						U.S.		U.K.		France	Germany	
			FDA	EU10/ 2011	GMP (EC) 2023/ 2006	NSF 61		WRAS		ACS	KTW-BWGL	DVGW
						23°C	82°C	23°C	85°C	23°C	23°C	W270
Unreinforced PBT, medium/high viscosity	Crastin® FG6130	NC010	√	√	√							
Unreinforced PBT, low viscosity	Crastin® FG6131	NC010	√	√	√							
Unreinforced PBT, medium/high viscosity	Crastin® FG6134	NC010	√	√	√							
Unreinforced PBT, high viscosity	Crastin® FGS600F10	NC010	√	√	√			√		√	√	
Unreinforced PBT, low viscosity	Crastin® FGS600F40	NC010	√	√	√							
Unreinforced PBT, low viscosity	Crastin® FGS600F40	BK594	√	√	√							

√ = Meets standard

Delrin® acetal homopolymer

The ideal material in parts designed to replace metal. Combining low-friction and high-wear resistance with the high strength and stiffness. It provides a wide operating temperature range (-40 °C to 120 °C) and good colorability. The combination of excellent mechanical properties allows for thinner, lighter-weight parts and shorter molding cycles with potential cost reductions.

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						23°C	82°C	23°C	85°C	23°C	23°C	W270
High viscosity, designed for extrusion processes	Delrin® FG150	NC010	√	√	√	√	√					
High performance with best combination of toughness, impact strength and flow from high to low viscosity	Delrin® FG100	NC010	√	√	√	√	√	√	√	√	√	√
	Delrin® FG100P	NC010	√	√	√	√	√	√				
	Delrin® FG500	NC010	√	√	√	√	√					
	Delrin® FG500P	NC010	√	√	√	√	√	√				
	Delrin® FG900P	NC010	√	√	√							
Enhanced crystallization technology high performance for faster cycle times, excellent creep and fatigue resistance, and dimensional stability, high to low viscosity	Delrin® FG111DP	NC010	√	√	√							
	Delrin® FG311DP	NC010	√	√	√							
	Delrin® FG511DP	NC010	√	√	√	√	√	√	√			
	Delrin® FG911DP	NC010	√	√	√	√	√	√				
PTFE lubricated with low wear and low friction	Delrin® FG100TL	NC010	√	√	√							
	Delrin® FG500TL	NC010	√	√	√							
Advanced lubrication designed for low wear over time, low friction over time and low noise	Delrin® FG311SLF		√	√	√							
	Delrin® FG500AL	NC010	√	√	√							
Delrin® Renewable Attributed for lower Global Warming Potential	Delrin® RAFG100	NC010	√	√	√	√	√	√	√	√	√	√
	Delrin® RAFG500P	NC010	√	√	√	√	√	√				
	Delrin® RAFG511DP	NC010	√	√	√	√	√	√	√			

√ = Meets standard

Hytrel® TPC-ET

This plasticizer-free thermoplastic elastomer combines the flexibility of rubber with the strength and processability of thermoplastics. Manufacturers and designers prefer parts made with Hytrel® for their resilience, heat and chemical resistance, as well as their tear and fatigue resistance.

Hytrel® is available in a full range of Shore D hardness, offering a freedom for part design and processing.

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						23°C	82°C	23°C	85°C	23°C	23°C	W270
Low modulus, 40D hardness	Hytrel® 4053FG	NC010	√	√	√							
Low modulus, 40D hardness with fatty food approval	Hytrel® 4053FGF	NC010	√	√	√							
Low modulus, 40D hardness	Hytrel® 4068FG	NC010	√	√	√			√	√	√	√	√
Medium modulus, 50D hardness	Hytrel® 5033FG	NC010	√	√	√							
Medium modulus, 55D hardness	Hytrel® 5553FG	NC010	√	√	√							
Medium modulus, 63D hardness	Hytrel® 6359FG	NC010	√	√	√			√	√			

√ **= Meets standard**

Rynite®

With its lightweight, glass-reinforced composition, dimensional stability, durability, heat resistance and high-gloss finish, DuPont™ Rynite® is preferred across a wide range of applications, particularly for metal replacement. Its high fluidity facilitates thin parts filling.

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						23°C	82°C	23°C	85°C	23°C	23°C	W270
PET, 30% glass reinforced	Rynite® FG530	NC010	√	√	√					√	√	√

√ **= Meets standard**

Zytel®

Available in a spectrum of grades, Zytel® products enable our customers to select the right materials for each project. Toughness for impact resistance, excellent hydrolysis resistance for long term water exposure, excellent aging performance at high temperature.

Zytel® Long Chain Polyamides (LCPA) include PA10.10, PA6.10 and PA6.12 produced in standard and renewably sourced (RS) options. Zytel® LCPA grades give lower moisture pick up and offer excellent thermal, flexible, chemical and hydrolysis resistance properties. Zytel® LCPA is a suitable alternative to Nylon 11 & 12.

Zytel® HTN high performance polyamide resin is the choice for reducing weight, improving strength, enhancing durability and increasing thermal performance in more severe environments.

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			FDA	EU10/ 2011	GMP (EC) 2023/ 2006	NSF 61		WRAS		ACS	KTW-BWGL	DVGW
						23°C	82°C	23°C	85°C	23°C	23°C	W270
PA66, high viscosity	Zytel® FG42A	NC010	√	√	√	√	√	√				
PA66, high viscosity	Zytel® FG50	NC010	√	√	√							
PA66, very high viscosity	Zytel® FG53	NC010	√	√	√							
PA66, lubricated	Zytel® FG101L	NC010	√	√	√	√	√	√				
PA66, lubricated	Zytel® FG133F1	NC010	√	√	√							
PA66, 30% glass reinforced, heat stabilised, Hydrolysis resistant	Zytel® FG70G30HSR2	BK309	√	√	√			√	√	√	√	√
PA66, 30% glass reinforced, heat stabilised, Hydrolysis resistant	Zytel® FG70G30HSR3	BK309	√	√	√			√	√	√	√	√
PA66,33% glass reinforced	Zytel® FGFE5171		√	√	√	√	√					
PA6,12	Zytel® FG151L	NC010	√	√	√							
PA6,12	Zytel® FG158	NC010	√	√	√							
PA6,10, 50% glass reinforced, Renewably sourced	Zytel® RS FG30G50L	BK595	√	√	√	√	√	√	√	√		
PPA, 35% glass reinforced, heat stabilised	Zytel® HTN FG52G35HSLR	BK011	√	√	√			√	√	√	√	√
Amorphous transparent nylon, good barrier properties	Zytel® HTN FG301	NC010	√	√	√							

√ **= Meets standard**

Mobility & Materials

DuPont Mobility & Materials (M&M) delivers a broad range of technology-based products and solutions to the consumer goods, industrial, transportation, electronics and healthcare markets. M&M partners with customers to drive innovation by utilizing its expertise and knowledge in polymer and materials science. M&M works with customers throughout the value chain to enable material systems solutions for demanding applications and environments. For additional information about DuPont Mobility & Materials, visit dupont.com.

Global capability. Local solutions.

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Turkey
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- Arburn Hills, MI
- Silicon Valley, CA
- Wilmington, DE

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Taiwan
United States
- Wilmington, DE
- Marlborough, MA
- Midland, MI
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