



HUNTSMAN

Enriching lives through innovation

Materials you can trust

TPU elastomers for regulated
Water and Food Contact applications

Experts in elastomers

Our polyurethanes business division is a leading developer of polyurethane (PU) and thermoplastic polyurethane (TPU) materials. Combining global reach with decades of experience in material innovation, we are experts in urethane-based elastomers and have in-depth knowledge of their application across a vast range of industries.

A trusted partner for food and drink producers

A leading global producer of TPU elastomers, we were a pioneer in our sector in the implementation of good manufacturing practice (GMP) procedures. Trusted as an international GMP partner, we have excellent credentials in the food contact materials (FCM) sector and offer a range of high quality IROGRAN® FCM TPU elastomers that comply with the most rigorous safety standards.

We deliver:

- A continuously evolving portfolio of GMP elastomer grades
- Fully traceable materials safe for food and drink products
- Certified manufacturing facilities
- Robust quality assurance
- Comprehensive regulatory technical expertise.

Our materials comply with:

- FDA and EU Plastics Regulations
- Migration and smell tests from the potable water industry such as NSF / ANSI / CAN 61 standard (National Sanitation Foundation) or KTW guidelines from the Umweltbundesamt.





Full flexibility for every food or drink need

Tough, reliable and extremely versatile, we have a dedicated range of IROGRAN®FCM TPU elastomers that will deliver long-lasting performance in food and drink applications.

Easily processed via technical extrusion (film, sheet, cable, hose, tube), injection molding and calendaring techniques, our elastomers deliver a range of benefits to manufacturers throughout the global food and drink supply chain.

We offer:

- Polyester-based elastomers for standard food and drink applications
- Specialty polyether-based elastomers for enhanced water and microbial resistance.

Conveyor belts

Manufacturers producing belts and profiles for food conveyor systems require reliable raw materials from suppliers that have an excellent FCM track record.

Durable thanks to high abrasion, fatigue and hydrolysis resistance, plus tolerant to harsh cleaning conditions, our range of IROGRAN® FCM TPU elastomers are easy to process - bonding well to carrier fabrics rather than the rolls used to process them.

Benefits:

- High wear and tear resistance
- Chemical resistance, particularly to fatty substances and cleaning agents
- Low temperature flexibility and ductility.

Film & sheet

Our specialty IROGRAN® TPU formulations offer good elasticity at low temperatures - meeting the requirements of the frozen food sector - and demonstrate resistance to washing cycles, making cleaning and hygiene control easy. Our IROGRAN® FCM TPUs can also be used as a barrier material in cure-in-place pipes (CIPP) where hydrolysis resistance is a key criteria.

Benefits:

- High microbial resistance
- High melt stability
- Good hydrolysis resistance
- High thermal stability.





Hoses & tubes

Our IROGRAN® FCM TPU elastomers are widely used to manufacture hoses and tubes that dispense both solid and liquid foodstuffs in processing and packaging plants.

Approved for use in potable water applications, our polyether-based elastomers are fully compliant with US Food and Drug Administration standards and are NSF 61 certified. Easy to clean, and with a high tolerance to microbial attack, they offer high transparency and low temperature flexibility.

Benefits:

- Excellent hydrolysis resistance, even at high temperatures
- Good abrasion and chemical resistance
- High kink resistance
- High transparency.

Infinite scope for innovation

Deeply committed to the FCM sector, our IROGRAN® FCM TPU elastomers can be customized to create a variety of items for the food and drink industry. We are also constantly working to extend our portfolio of certified materials according to NSF/ANSI 61 or KTW guidelines for use in potable water applications.

IROGRAN® TPUs: Key products

Physical properties	Norm	Unit	A 70 P 5124 FCM	A 80 P 5039 FCM	A 85 P 5054 FCM	A 85 P 5118 FCM	A 85 P 5115 UV FCM	A 85 P 4394 FCM
			IROGRAN® ether-based					
GENERAL								
Hardness	ASTM D 2240	Shore A	70	81	85	87	89	85
Hardness	ASTM D 2240	Shore D	N/A	33	35	40	41	40
Density	ASTM D 792	g/cm ³	1.07	1.10	1.12	1.12	1.12	1.12
MECHANICAL								
Tensile strength	ASTM D 412	psi	4630	5660	3300	8500	6960	6850
Elongation @ break	ASTM D 412	%	730	620	700	510	550	560
Tensile stress @ 100% elongation	ASTM D 412	psi	475	680	900	950	930	930
Tensile stress @ 300% elongation	ASTM D 412	psi	770	1140	1500	2300	1800	1730
Tear strength	ASTM D 624	pli	320	380	550	470	510	470
Abrasion	ISO 4649	mm ³	N/A	34	25	30	30	31
THERMAL								
TMA low melt range	Huntsman	°C	156	141	145	160	160	157
TMA high melt range	Huntsman	°C	170	156	160	170	172	170
OTHER FEATURES								
Transparent			x	x	x	x	x	x
PROCESSING								
Injection molding				x		x	x	x
Extrusion			x	x		x	x	x
Calendering					x			
MARKET APPLICATIONS								
Compounding								
Film & sheet	Flat-die extrusion		x	x		x	x	x
	Blown-film extrusion			x		x	x	x
Belting - Conveyor belts			x	x	x	x	x	x
Extruded parts - Hoses, tubes & profiles			x	x		x	x	x

Further technical data about individual products plus best practice advice for handling and processing our elastomers is available by contacting your local sales representative or by visiting our online product finder tool:

<http://www.huntsman-tpu.com/>

A 85 P 4441 FCM	A 90 P 5055 FCM	A 92 P 4637 FCM	CA 9068-201 FCM	A 85 E 4719 FCM	A 85 E 4993 FCM	PS440-200 FCM	A 92 E 5670 FCM	A 92 E 5068 FCM
IROGRAN[®] ester-based								
87	89	91	73	87	86	88	90	91
39	44	45	25	43	36	42	42	38
1.11	1.12	1.14	1.17	1.20	1.21	1.22	1.21	1.21
6960	2900	7100	3000	6960	4020	8110	7200	5800
580	650	500	560	570	700	520	500	590
980	1000	1300	470	890	970	940	1100	1200
1560	1600	2860	990	1720	1650	2550	2520	2220
480	550	550	320	470	590	530	540	520
48	35	33	N/A	30	25	34	38	25
155	150	167	112	146	145	159	154	150
169	170	181	131	160	160	173	167	160
	x	x	x	x	x	x	x	x
x		x				x		
x		x	x	x	x	x		
	x			x	x		x	x
			x		x			x
x		x	x	x	x	x		
x		x	x	x	x	x	x	x
x	x	x	x	x	x	x	x	x
x		x	x			x		

Global elastomers experts

Committed to customers: We build partnerships with our customers and work across an international network of R&D and manufacturing locations to help solve complex challenges and deliver the highest levels of technical support and customer care.

Committed to quality: Wherever we are, whatever we are doing, we prioritize environmental, health and safety protection, and we are always rigorous about quality control and assurance.

Committed to innovation: We keep pace with the most innovative trends in plastics processing by using the latest equipment and making regular investments in our formulation, manufacturing and R&D capabilities.

Committed to sustainability: We create solutions that contribute to a more sustainable society by helping to conserve energy, preserve natural resources and reduce our overall carbon footprint.



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About Huntsman:

Huntsman Corporation is a publicly traded corporation headquartered in The Woodlands, Texas, in the United States of America. Huntsman is a global downstream, differentiated, and specialty chemicals company. For more than 50 years, we have been using science and ingenuity to innovate and create products that enable more sustainable and comfortable lives for millions of people around the world. In 2023, Huntsman had more than 6,000 associates working in nearly 60 manufacturing, research and development (R&D), and operations facilities in 25 countries. Through our three divisions, we produce approximately 6,250 products to serve a broad and diverse range of consumer and industrial end markets including aerospace, transportation, building and construction, consumer goods, energy and fuels, and food preservation.

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Products may be toxic and require special precautions in handling. The user should obtain Safety Data Sheets from Huntsman Polyurethanes containing detailed information on toxicity, together with proper shipping, handling and storage procedures, and should comply with all applicable safety and environmental standards. Hazards, toxicity and behaviour of the products may differ when used with other materials and are dependent on the manufacturing circumstances or other processes. Such hazards, toxicity and behaviour should be determined by the user and made known to handlers, processors and end users.

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