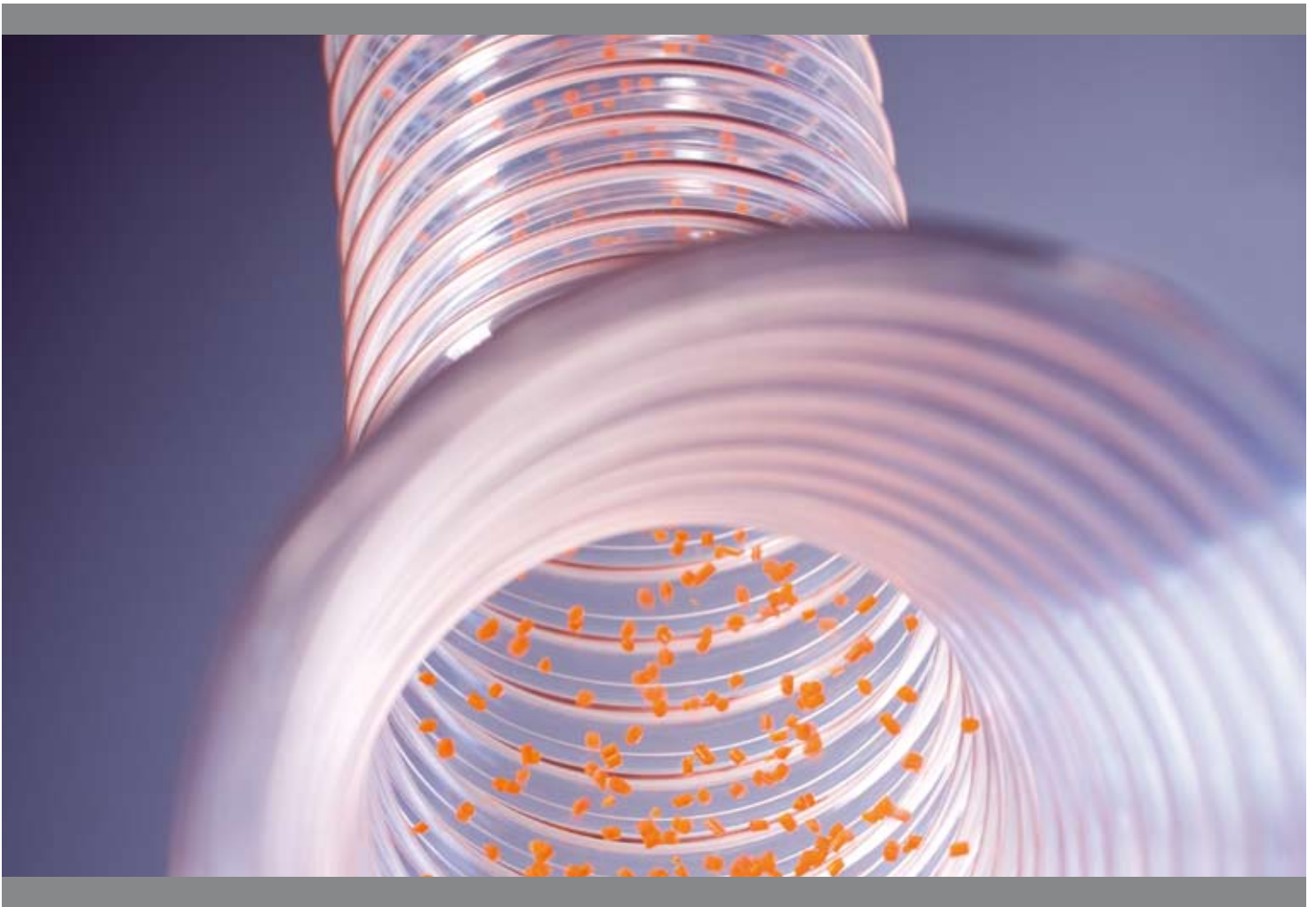
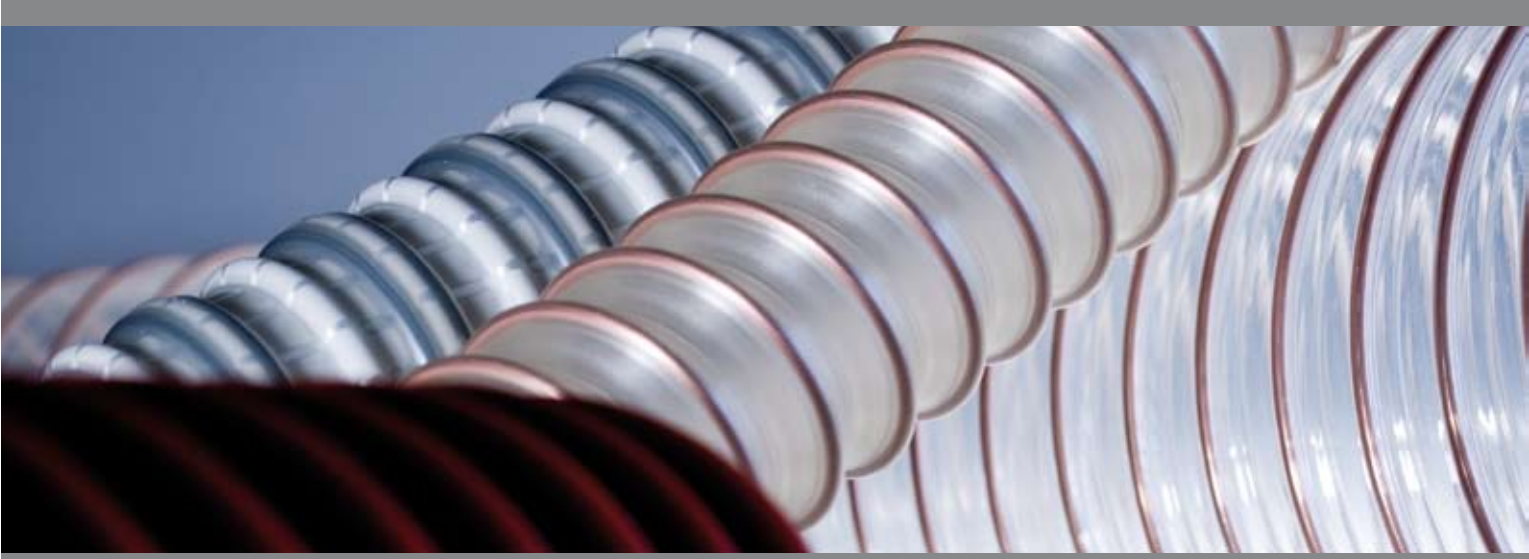




ELASTOMERE

IROGRAN® for spiral hoses





Flexible and strong, Huntsman's thermoplastic polyurethanes (TPUs) offer limitless possibilities for the production of a wide range of spiral hose systems. Well known for its outstanding versatility, Huntsman's IROGRAN® is the brand name for an exceptional range of polyester and polyether-based TPUs.

IROGRAN® TPUs are characterized by consistent quality and excellent processing properties that can be relied on for the most demanding and innovative applications. With superior flexibility and excellent wear resistance, IROGRAN® grades can be used for solutions individually tailored to meet a wide variety of customer requirements.

Typical applications

- Spiral hose production
- Manufacture of systems for conveying materials
- Highly flexible ventilation and exhaust systems
- Exhaust and suction systems
- Vacuum cleaner hoses.

Specifically, spiral and conveying hoses made from IROGRAN® are ideal for:

- Manufacturing hoses that can transport highly abrasive materials such as gravel or pebbles for flat roofing systems
- Systems for conveying materials such as TPU pellets
- Hose conveying systems for welding robots or for handling/automation systems
- Hose systems that require high chemical resistance.

Benefits of Huntsman TPU

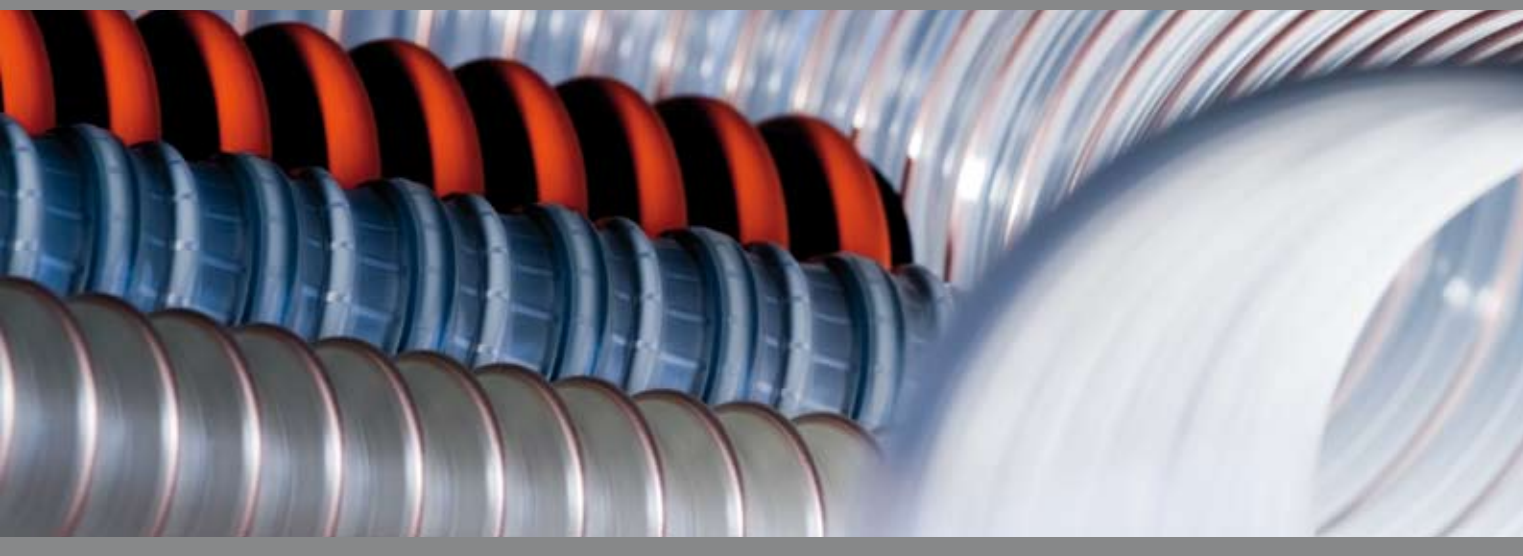
- High flexibility and elasticity
- Excellent abrasion resistance
- Very good tensile and cut resistance
- High dimensional stability
- Free of halogens
- Ability to recycle all polyurethanes.

Key value-added properties

Choosing Huntsman TPUs enables manufacturers to make cost efficiencies, improve product performance and gain competitive advantage.

Benefits include:

- **High melt stability**
increased production speed and excellent dimensional stability
- **High production speed**
better production rates to improve efficiencies
- **Excellent dimensional stability**
reduced start-up waste and downtime
- **Surfaces with low adhesion**
improved subsequent processing and minimized abrasion and wear
- **High welding speeds**
increased production rates.



Product overview

Product group	Product	Shore A	Shore D	Tensile strength (N/mm ²)	Ultimate elongation (%)	Tear strength (N/mm)	Melt volume ratio		Benefits (properties)
							(cm ³ /10 min)	UL 94 class.	
Standard	A 78 E 4723	80	29	45	650	60	40-55		high mechanical resistance
	A 80 D 4967 DP	82	32	40	500	75	25		broad processing window
	A 85 D 4968	85	35	45	500	75	30		broad processing window
	A 85 P 4934	85	34	35	550	48	30		excellent flame retardant properties
Premium	A 78 E 4506	77	26	45	650	60	20-25		dynamically highly loadable
	A 85 E 4607	87	36	45	600	70	15-25		excellent dimension stability
Specialties	A 78 P 4766NM	77	27	30	610	45	50	V0	excellent flame retardant properties
	A 85 P 5350	89	37	45	690	55	45	V2	excellent flame retardant properties
	A 86 E 4486	85	32	40	550	75	40-70	V2	high tear strength
	A 85 D 5001 DP	85	34	40	600	70	30-60		antistatic surface
FCM	A 85 E 4993 FCM	86	36	35	580	65	50-70		complies with FDA CFR 177.2600
	A 92 E 5670 FCM	90	38	42	570	83	50-70		complies with FDA CFR 175.105/177.2600

Drying

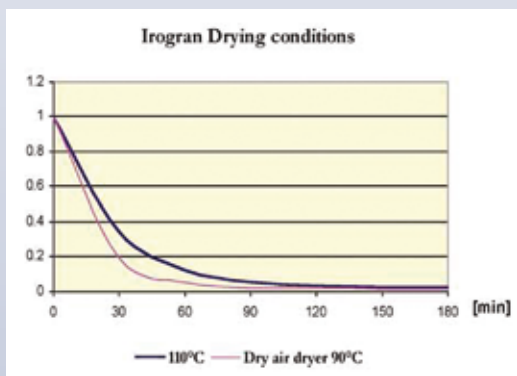
IROGRAN[®] grades are supplied in steam-tight bags or in octabins with PE-lining.

As IROGRAN[®] is hygroscopic, the granulate should always be pre-dried carefully as even the smallest amount of humidity or moisture can lead to uneven surfaces and blockages inside the nozzle.

Any re-absorption of humidity can be prevented by ensuring that IROGRAN[®] is stored in a dry atmosphere. Any moisture in the granulate can result in processing problems and poor quality assembly units.

Supply

Standard sales units are 25 kg bags, 1000 or 1125 kg/pallet. Gaylord bulk boxes, big bags and silo trucks are also available.



Huntsman Polyurethanes is committed to working closely with its customers and can offer a fast and flexible response to your needs. We offer direct links to our laboratories with full technical backup. Commercial support and dedicated customer service is available throughout Europe/India, the Middle East, Asia-Pacific and the Americas.



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About Huntsman

Huntsman is a global manufacturer and marketer of differentiated chemicals. Its operating companies manufacture products for a variety of global industries, including chemicals, plastics, automotive, aviation, textiles, footwear, paints and coatings, construction, technology, agriculture, health care, detergent, personal care, furniture, appliances and packaging. Originally known for pioneering innovations in packaging and, later, for rapid and integrated growth in petrochemicals, Huntsman today has more than 11,000 employees and operates from multiple locations worldwide. The Company had 2009 revenues of approximately \$ 8 billion. For more information about Huntsman, please visit the Company's website at www.huntsman.com

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Products may be toxic and require special precautions in handling. The user should obtain Safety datasheets from Huntsman Polyurethanes and Huntsman Performance Products 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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