

**E ELASTOMERS**

Hot and Warm Cast Elastomers



**SUPRASEC® MDI**



Designed to provide superior chemical, mechanical and abrasion resistance, hot and warm cast elastomers are used in a large number of industries such as mining, construction, heavy-duty equipment, transport, medical and oil.

These high performance polyurethane elastomers are based on a diisocyanate like Diphenylmethane diisocyanate (MDI), a high molecular weight hydroxyl terminated polyol and a low molecular weight diol or diamine as chain extender. Due to the nature of the raw materials and in order to obtain the superior properties, processing and cure needs to be performed at elevated temperature.

Huntsman Polyurethanes offers a broad range of MDI and MDI-variants, which can be processed via a one shot or quasi prepolymer route. When required, the elastomers can be cast directly onto rigid surfaces and form coverings of varying thicknesses to protect against chemical and mechanical damage.

**Huntsman product offer**

**1. Specialty isocyanates**

Based on our wide range of specialty isocyanates (MDI and MDI-variants) we are able to serve the elastomer market with robust isocyanate solutions. By changing the type of isocyanate while keeping the same polyol resin, one can vary the corresponding physical mechanical properties.

**SUPRASEC® MDI product range for hot and warm cast elastomers.**

	NCO (%)	FN	Viscosity 25°C (mPa.s)	Product description
SUPRASEC® 1306	33.5	2.0	Solid	Pure MDI for one shot system or prepolymer production, high resilience
SUPRASEC® 2020	29.6	2.1	40	Liquid pure for one shot or prepolymer production, dampening
SUPRASEC® 2010	26.2	2.1	140	Hard block prepolymer, superior toughness
SUPRASEC® 2021	23.2	2.0	975	Hard block prepolymer, superior toughness
SUPRASEC® 2444	20.2	2.0	950	PE prepolymer with excellent hydrolysis resistance
SUPRASEC® 2733	19.3	2.0	320	PE prepolymer with enhanced reactivity providing good basis for high elastic elastomers
SUPRASEC® 2783	19.0	2.0	1025	Hybrid prepolymer giving enhanced reactivity in combination with good physic mechanical properties
SUPRASEC® 2980	19.0	2.0	1100	Excellent solvent and oil resistance ( !! Not to be used in combination with Hg- catalysis )
SUPRASEC® 2982	16.0	2.0	2600	High performance prepolymer with excellent liquidity ( !! Not to be used in combination with Hg- catalysis )

The low functionality of the SUPRASEC® MDI-variants combined with the presence of high level 4-4' isomer makes those specialty isocyanates particularly suitable for hot cast elastomers.



### Benefits of MDI and MDI-based pre-polymers for elastomer applications

- outstanding mechanical properties such as toughness, abrasion resistance, durability, impact strength
- good adhesion to different substrates
- high chemical versatility of MDI
- low energy consumption
- EH&S friendly
- ease of processing
- wide formulation possibilities
- good low-temperature capability
- excellent chemical resistance
- oil and solvent resistance (except straight PE technology)
- high moisture resistance
- superb abrasion resistance
- high elastic elastomer (both compact or foamed)

### 2. Formulated systems

Upon request, we can provide fully and/or half formulated systems supported with guideline mechanical as well as dynamic properties when processed on conventional casting machinery. Our experienced commercial and technical team will assist you in finding the most efficient and economical solution for your business needs.

#### Typical applications.

#### Compact elastomers

##### **Wheels and castors**

A full range of polyether and ester grade high performance elastomers are available. All systems have excellent tear and abrasion properties. To date a hardness range from 80 up to 95 Shore A is covered but guidelines on modifications can be provided upon customer request. These characteristics are also valid for applications like liners, wheels and tires, rollers, mining screens, conveyor belts, engineering parts, in-line skate wheels, golf balls.

##### **Concrete moulds**

A machine-processable system that combines an excellent abrasion resistance, high tear and tensile resistance with improved solvent resistance.

##### **Paper rolls**

A range of high performance ether elastomers with excellent dynamical properties.

#### Foamed elastomers (fully water blown)

##### **Wheels**

Ideal combination of wear and tear excellence with minimal rolling resistance.

##### **High hysteresis foams ( good compression set )**

A unique system that combines high hysteresis properties with excellent compression set performance.

##### **Low hysteresis foams ( good compression set )**

A range of systems with excellent noise vibration dampening properties.

# HUNTSMAN

Enriching lives through innovation

Huntsman Polyurethanes is committed to your business and can offer fast and flexible response to your needs

Believing in confidential dialogue, we offer direct links into the laboratories with full technical backup. Commercial support and dedicated customer service is available throughout Europe, Asia and the US.



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## The Huntsman story

Global resources for local needs

Huntsman Polyurethanes is a business division of Huntsman Corporation. 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 rapid and integrated growth in petrochemicals, Huntsman today has 13,000 employees and 78 operations in 24 countries. The company had 2007 revenues of over \$ 10 billion.

Huntsman Polyurethanes warrants only that its products meet the specifications agreed with the buyer. Typical properties, where stated, are to be considered as representative of current production and should not be treated as specifications.

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