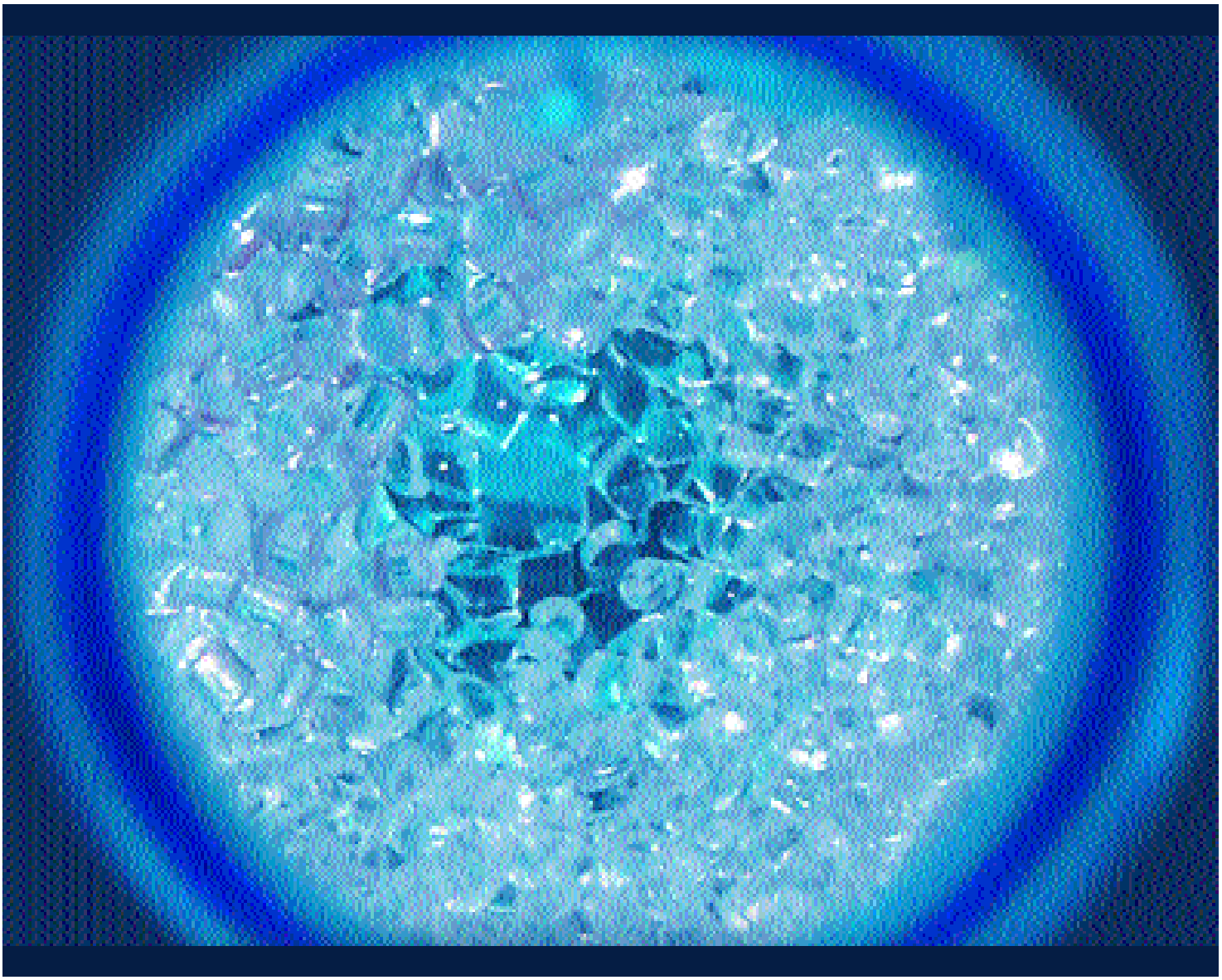
HUNTSMAN

Enriching lives through innovation

ADHESIVES

Thermoplastic Polyurethanes



IROSTIC®

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Thermoplastic Polyurethanes

IROSTIC® is the Huntsman trade name for a range of polyurethane based raw materials for the manufacture of TPU adhesives.

IROSTIC® is globally available in a broad range of base polyol and isocyanate chemistries and can be used as a one or two-component system with IRODUR® cross-linkers.

	MULTIPURPOSE GRADES							SPECIAL GRADES							MELT GRADES	
IROSTIC®	**S 6148**	**S 6514**	**S 7514**	**S 7614**	**S 8743**	**S 6440**	**S 6515**	**S 6530**	**S 6558**	**S 7730**	**S 8612**	**S 8735**	**S 9815**	**S 9827**	**M 8304**	**M 8520**
Viscosity range (15% solid in MEK @ 20°C) [mPa*s]	200 - 2000	60 - 700	100 - 1800	100 - 2100	700 - 1800	400 - 1600	70 - 130	70 - 130	500 - 900	400 - 1600	100 - 1400	100 - 600	200 - 1600	600 - 2000	LV - HV	
# viscosities available within grade	7	6	7	7	3	4	1	1	2	5	5	2	4	4	2	1
Activation temperature [°C]	25-40	50-55	50-55	60-65	70-75	40-45	50-55	50-55	50-55	70-75	60-65	70-75	80-85	80-85		
Processing temperature [°C]	150 - 190	130 – 170	170 – 190	130 - 190	170 - 190	170 - 190	130	130	190	150 - 190	130 - 190	130 - 150	160 – 190	170 - 190	130 - 190	110 - 190
Performance characteristics																
Excellent heat resistance	X			X	X										X	X
Good hydrolysis resistance	X				X				X				X			
Excellent green tack	X		X	X	X					X	X	X	X +	X	X	X
Crystalisation rate (min) (internal method)	10-26	11-38	20-28	6-30	4-7	12-16	30	25	12-17	9-16	4-20	11-15	4-10	3-5	7	10
Solubility																
MEK	+	+	+	+	+	+	+	+	+	+	+	+	+	+	-	-
Ethylacetate	-	+	+	-	-	+	+	+	-	-	+	+	-	-	-	-
Toluene	-	+	+	-	-	+	+	+	-	-	+	+	-	-	-	-
MEK / Toluene (8:2)	+	+	+	+	+	+	+	+	+	+	+	+	+	+	-	-
MEK / Ethylacetate (1:1)	+	+	+	+	+	+	+	+	+	+	+	+	+	-	-	-
Methylene Chloride	-	+	+	-	-	+	+	-	-	+	+	+	-	-	+	+
Applications																
Do It Yourself	X		X	X	X	X			X	X	X	X	X	X		
Rubber adhesive	X				X	X			X							
Reactive Hotmelt		X	X			X	X	X			X	X			X	X
Print industry											X	X				
Extrusion															X	X
Textile industry	X	X	X	X	X				X	X	X		X	X	X	X
Foam bonding	X				X	X			X							
Packaging industry	X				X	X	X	X	X						X	
Suggested use																
1 component	X			X	X				x	X	X	X	X	X	X	X
2 component (add crosslinker)	X	X	X	X		X	X	X			X	X				
Modifier for other grades		X				X										
Physical properties																
Hardness Shore A (DIN 53505) @ average viscosity	91-95	85-94	93-96	94-98	91-95	87-91	93	95	74-77	90-93	90-96	90-94	95-97	92-96	93-97	99
Hardness Shore D (DIN 53505) @ average viscosity	35-40	25-32	43-46	40-43	39-42	43-44	49	40	22-23	41-44	40 - 45	43-45	42-48	41-45	42-45	53
Flow point [°C] (ASTM 28) @ average viscosity	125 - 170	92 - 162	113 - 160	122 - 168	145 - 165	135 - 164	114	89	135-166	137-160	93 - 164	88 - 165	132 - 167	145 - 165	88 - 115	93
Tensile strength @ break [MPa]	24-28	6-19	26-35	17-28	22-27	21-26	18	24	15-17	26-36	13-24	12-19	17-30	23-28	4-10	6
Tensile strength @ yield [MPa]	5-6	3-3.5	5-7	5-6	6-7	3-4	3	5	2-3	7-8	6-7	7-8	6-7	6-7	8-10	11
Elongation @ break [%]	850-1400	850-1200	1300-1400	940-1300	1000-1300	1500-1700	1200	1400	>1200	1100-1400	850-1230	900-1000	1100-1350	1000-1300	200-900	300
SAFT (internal method) cotton-cotton 0.5 kg load (°C)	96-154	40-149	116-152	108-164	142-160	105-148	40	60	120-139	107-140	53-134	56-160	115-154	138-166	110-135	75
Excellent adhesion to																
paper	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
PVC	X	X		X	X	X	X		X	X	X	X	X	X		
wood	X	X		X	X	X	X		X	X	X	X	X	X		
textile	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X
rubber	X	X		X	X	X	X		X							
leather	X	X		X	X	X	X		X	X	X	X	X	X		
PE								X								
PP								X								
Appearance after solvent-evaporation																
Talc added to low viscosity grades		X					X									

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Handling and usage

IROSTIC® products can be applied by various methods.

Hot melt

IROSTIC® can be applied with typical hot melt equipment. It is used for direct lamination processes or can be manufactured into adhesive films or webs.

Additives in reactive hot melts

IROSTIC® can be added to a polyol blend prior to the isocyanate addition to enhance the initial strength of the reactive hot melt.

Solvent based adhesives (one or two-component)

IROSTIC® can be dissolved in appropriate solvents. After drying, the adhesives films are simply re-activated by heat. If used as a two-component adhesive, reactivation must be carried out within a 6-12 hour period. Reactivation takes place under infrared light for approximately 1 minute. Where IROSTIC® is used as a two-component adhesive, the pot life must be taken into account. Even at room temperature, the cross-linking reaction starts at the moment the cross-linking agent is added to the adhesive solution. The viscosity will gradually increase.

Packaging and order size

The Product range is globally available in minimum quantity orders of 600 kg, packed in 25 kg boxes. Only IROSTIC® S 7730 and IROSTIC® S 9815 are available in 750 kg oder sizes.

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.