

Polyurethanes (PUs and TPUs)



A comprehensive range of products that provide comfort and convenience in countless ways

SONGWON offers an extensive range of polymers. "Solution" (thermosetting and/or thermoplastic) polyurethanes (PUs), thermoplastic polyurethanes (TPUs) and polyester diols, based on esterification technology are used in ink binders, adhesives, and other applications requiring solution PUs and TPUs.

Super absorbent polymers (SAPs) are suitable for applications where high water absorbance and excellent stability, regardless of heat and light, is required.

It's all about **the chemistry™**



Polyurethanes (PUs and TPUs)

One of the most versatile plastic materials available today, polyurethanes enhance industrial and consumer products, providing comfort and convenience in countless ways. They are used in furniture and household appliances, construction and electronics, the automotive sector, and for footwear and packaging.

Polyurethanes are either thermosetting or thermoplastic. Thermosetting polyurethane does not melt when heated because it reacts with the curing agent to form a net-like structure, while thermoplastic polyurethane (TPU) can be melted and molded as required.

With a long tradition and high experience in the sector, SONGWON offers both "solution-type" (thermosetting and/or thermoplastic, depending on hardener) and thermoplastic polyurethanes (TPUs).

SONGWON's solution-type polyurethane products are used in the production of synthetic leather (wet and dry process) and flexible packaging, and as ink binders on different plastic films.

Thermoplastic polyurethanes (TPUs) are highly suitable for extrusion and injection molding thanks to their physical properties, which are far superior to those of conventional cast-type polyurethane elastomers.

Solution-Type Polyurethanes (PUs)



PUs – Dry Process

Artificial Leather

	Non-Volatile (%)	Viscosity (cps/room temp.)	Solvent	Film Properties: 100% MD (Kg/cm ²)	Film Properties: Tensile Strength (Kg/cm ²)
HI-THANE™ S-1070	29 ~ 31	60000 ~ 100000	DMF, MEK	25 ~ 30	400 ~ 500
HI-THANE™ S-1090	29 ~ 31	60000 ~ 100000	DMF, MEK	90 ~ 95	500 ~ 600
HI-THANE™ S-1013	29 ~ 31	60000 ~ 100000	DMF, MEK	180 ~ 200	350 ~ 450
HI-THANE™ S-1082H	29 ~ 31	70000 ~ 110000	DMF, MEK	60 ~ 70	500 ~ 600
HI-THANE™ S-1082H-7	29 ~ 31	70000 ~ 110000	DMF, MEK	60 ~ 70	500 ~ 600
HI-THANE™ S-2434	19 ~ 21	50000 ~ 80000	DMF, MEK, IPA	50 ~ 60	500 ~ 600
HI-THANE™ S-2434F6	19 ~ 21	50000 ~ 80000	DMF, MEK, IPA	50 ~ 60	500 ~ 600
HI-THANE™ S-1088 / 1088H	29 ~ 31	60000 ~ 100000	DMF, MEK	70 ~ 80	500 ~ 600
HI-THANE™ S-1089	29 ~ 31	70000 ~ 110000	DMF, MEK	70 ~ 80	500 ~ 600
HI-THANE™ S-1900NY	30 ~ 32	60000 ~ 100000	DMF, MEK	80 ~ 90	450 ~ 550
HI-THANE™ S-1090F	29 ~ 31	60000 ~ 100000	DMF, MEK	80 ~ 90	450 ~ 550
HI-THANE™ S-1090FA	22 ~ 24	10000 ~ 15000	DMF, MEK	55 ~ 65	250 ~ 350
HI-THANE™ S-1090NS	29 ~ 31	60000 ~ 100000	DMF, MEK	100 ~ 110	550 ~ 600
HI-THANE™ S-1162	30 ~ 32	60000 ~ 100000	DMF, MEK	80 ~ 90	500 ~ 600
HI-THANE™ S-1363	30 ~ 32	40000 ~ 70000	DMF, MEK	60 ~ 70	500 ~ 600

Film Properties: Elongation (%)	Characteristics	Applications	
500 ~ 600	<ul style="list-style-type: none"> • Good low temperature resistance • Good elasticity • Soft touch • Good heat resistance • Excellent water pressure 	<ul style="list-style-type: none"> • For wigs • Thin PUs • Garments • Water- and windproof treatment 	HI-THANE™ S-1070
400 ~ 500	<ul style="list-style-type: none"> • Less tackiness • Good solvent resistance • Good hydrolysis resistance • Good heat resistance 	<ul style="list-style-type: none"> • For wigs • Thin PUs • Garments • Water- and windproof treatment • Hard type PUs 	HI-THANE™ S-1090
200 ~ 250	<ul style="list-style-type: none"> • Two tone type • Less tackiness 	<ul style="list-style-type: none"> • Two tone type PUs • Water- and windproof treatment 	HI-THANE™ S-1013
400 ~ 500	<ul style="list-style-type: none"> • Good low temperature resistance • Good elasticity • Good hydrolysis resistance • Good heat resistance 	<ul style="list-style-type: none"> • Shoes upper • Bags 	HI-THANE™ S-1082H
400 ~ 500	<ul style="list-style-type: none"> • Good low temperature resistance • Good elasticity • Good hydrolysis resistance • Good heat resistance • Excellent UV resistance • Good NOx resistant 	<ul style="list-style-type: none"> • Shoes upper • Bags 	HI-THANE™ S-1082H-7
300 ~ 400	<ul style="list-style-type: none"> • Good NOx resistant • Good hydrolysis resistance • Good elasticity 	<ul style="list-style-type: none"> • Vehicle interiors • Furniture 	HI-THANE™ S-2434
300 ~ 400	<ul style="list-style-type: none"> • Good NOx resistant • Waxy touch • Good hydrolysis resistance • Good elasticity 	<ul style="list-style-type: none"> • Vehicle interiors • Furniture 	HI-THANE™ S-2434F6
400 ~ 500	<ul style="list-style-type: none"> • Good low temperature resistance • Good elasticity • Good hydrolysis resistance 	<ul style="list-style-type: none"> • Shoes upper • Bags 	HI-THANE™ S-1088
400 ~ 500	<ul style="list-style-type: none"> • Good low temperature resistance • Good elasticity • Good hydrolysis resistance 	<ul style="list-style-type: none"> • Shoes upper • Bags 	HI-THANE™ S-1089
450 ~ 550	<ul style="list-style-type: none"> • No tackiness • Good NOx resistant 	<ul style="list-style-type: none"> • Balls • Enamel type for shoes upper 	HI-THANE™ S-1900NY
450 ~ 550	<ul style="list-style-type: none"> • Good low temperature resistance • Less tackiness • Good scratch resistance 	<ul style="list-style-type: none"> • Shoes upper • Semi hard type PUs 	HI-THANE™ S-1090F
350 ~ 450	<ul style="list-style-type: none"> • Good low temperature resistance • Less tackiness • Good scratch resistance 	<ul style="list-style-type: none"> • Micro gravure coatings 	HI-THANE™ S-1090FA
400 ~ 500	<ul style="list-style-type: none"> • No swelling • Less tackiness • Good hydrolysis resistance 	<ul style="list-style-type: none"> • Shoes upper • Semi hard type PUs 	HI-THANE™ S-1090NS
550 ~ 650	<ul style="list-style-type: none"> • Good heat resistance • Good scratch resistance • Good hydrolysis resistance • Wet touch 	<ul style="list-style-type: none"> • Soccer shoes upper 	HI-THANE™ S-1162
400 ~ 500	<ul style="list-style-type: none"> • Good heat resistance • Good scratch resistance • Good hydrolysis resistance • Wet touch 	<ul style="list-style-type: none"> • Shoes upper 	HI-THANE™ S-1363

	Non-Volatile (%)	Viscosity (cps/room temp.)	Solvent	Film Properties: 100% MD (Kg/cm ²)	Film Properties: Tensile Strength (Kg/cm ²)
HI-THANE™ S-2533B	29 ~ 31	70000 ~ 110000	DMF, MEK	70 ~ 80	500 ~ 600
HI-THANE™ S-5145	28 ~ 31	60000 ~ 100000	DMF, MEK	60 ~ 70	500 ~ 600
HI-THANE™ S-1082D	29 ~ 31	70000 ~ 110000	DMF, MEK	60 ~ 70	500 ~ 600
HI-THANE™ S-1082D-7	29 ~ 31	70000 ~ 110000	DMF, MEK	60 ~ 70	500 ~ 600
HI-THANE™ S-6000B	29 ~ 31	60000 ~ 100000	DMF, MEK	50 ~ 60	500 ~ 600

Water- and Windproofing

HI-THANE™ S-1019A	38 ~ 42	60000 ~ 100000	IPA, MEK, TOL	15 ~ 20	150 ~ 250
HI-THANE™ S-1157	28 ~ 31	30000 ~ 70000	DMF, MEK	25 ~ 35	350 ~ 450
HI-THANE™ S-1510A	28 ~ 31	30000 ~ 50000	DMF, MEK, TOL	50 ~ 60	500 ~ 600
HI-THANE™ S-5346	38 ~ 42	60000 ~ 100000	DMF, MEK, TOL	5 ~ 15	30 ~ 100
HI-THANE™ SA-8500A	53 ~ 57	40000 ~ 80000	DMF, MEK, TOL	15 ~ 25	100 ~ 200
HI-THANE™ SP-1500G	28 ~ 32	40000 ~ 70000	DMF, MEK	50 ~ 60	500 ~ 600

Direct Coating

HI-THANE™ S-1056	48 ~ 52	110000 ~ 150000	DMF, MEK	20 ~ 25	400 ~ 500
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Film Properties: Elongation (%)	Characteristics	Applications	
400 ~ 500	<ul style="list-style-type: none"> • Good low temperature resistance • Good elasticity • Good hydrolysis resistance • Excellent UV resistant • Good NOx resistant 	<ul style="list-style-type: none"> • Shoes upper • Bags 	HI-THANE™ S-2533B
400 ~ 500	<ul style="list-style-type: none"> • Good low temperature resistance • Good elasticity • Good hydrolysis resistance • Good heat resistance 	<ul style="list-style-type: none"> • Shoes upper • Semi hard type PUs 	HI-THANE™ S-5145
400 ~ 500	<ul style="list-style-type: none"> • Good low temperature resistance • Good elasticity • Good hydrolysis resistance • Good heat resistance 	<ul style="list-style-type: none"> • Shoes upper • Bags 	HI-THANE™ S-1082D
400 ~ 500	<ul style="list-style-type: none"> • Good low temperature resistance • Good elasticity • Good hydrolysis resistance • Good heat resistance • Excellent UV resistant • Good NOx resistant 	<ul style="list-style-type: none"> • Shoes upper • Bags 	HI-THANE™ S-1082D-7
500 ~ 600	<ul style="list-style-type: none"> • Good elasticity • Soft touch • Good heat resistance • Excellent water pressure resistance 	<ul style="list-style-type: none"> • Thin PUs • Garments 	HI-THANE™ S-6000B

750 ~ 850	<ul style="list-style-type: none"> • Good waterproofing and moisture permeability • Good hydrolysis resistance 	<ul style="list-style-type: none"> • Thin PUs • Garments • Base coating for breathable treatment 	HI-THANE™ S-1019A
650 ~ 750	<ul style="list-style-type: none"> • Good waterproofing and moisture permeability • Good hydrolysis resistance 	<ul style="list-style-type: none"> • Thin PUs • Garments • Top coating for breathable treatment 	HI-THANE™ S-1157
450 ~ 550	<ul style="list-style-type: none"> • Good waterproofing and moisture permeability • Good hydrolysis resistance 	<ul style="list-style-type: none"> • Laminating skin for breathable treatment 	HI-THANE™ S-1510A
250 ~ 350	<ul style="list-style-type: none"> • Good waterproofing and moisture permeability • Good hydrolysis resistance 	<ul style="list-style-type: none"> • Thin PUs • Garments • Base coating for breathable treatment 	HI-THANE™ S-5346
350 ~ 450	<ul style="list-style-type: none"> • Good waterproofing and moisture permeability • Less swelling • Good hydrolysis resistance • Lamination type 	<ul style="list-style-type: none"> • Laminating adhesive for breathable treatment 	HI-THANE™ SA-8500A
450 ~ 550	<ul style="list-style-type: none"> • Good waterproofing and moisture permeability • No swelling • Good hydrolysis resistance • Lamination type 	<ul style="list-style-type: none"> • Laminating skin for breathable treatment 	HI-THANE™ SP-1500G

400 ~ 500	<ul style="list-style-type: none"> • Soft type • High density • High viscosity 	<ul style="list-style-type: none"> • Thin PUs • Garments • Base coating for water- and windproof treatment 	HI-THANE™ S-1056
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HI-THANE™ S-1056S	48 ~ 52	60000 ~ 100000	DMF, MEK	90 ~ 100	500 ~ 600
HI-THANE™ S-1063D	38 ~ 42	60000 ~ 100000	DMF, MEK, TOL	50 ~ 60	300 ~ 400
HI-THANE™ S-1064B	58 ~ 62	60000 ~ 100000	DMF, MEK	1 ~ 3	1 ~ 3
HI-THANE™ S-1070J	29 ~ 31	60000 ~ 100000	DMF, EA	40 ~ 45	500 ~ 600
HI-THANE™ S-1075J	34 ~ 36	70000 ~ 110000	DMF, MEK	40 ~ 45	450 ~ 550
HI-THANE™ S-1004H	29 ~ 31	60000 ~ 100000	DMF, MEK	70 ~ 80	400 ~ 500
HI-THANE™ S-1008ND	29 ~ 31	60000 ~ 100000	DMF, MEK	20 ~ 25	400 ~ 500
HI-THANE™ S-1040K	39 ~ 41	60000 ~ 100000	DMF, MEK, TOL	5 ~ 15	300 ~ 400
HI-THANE™ S-1066L	48 ~ 52	70000 ~ 110000	DMF, MEK	90 ~ 100	500 ~ 600
HI-THANE™ S-3060E	34 ~ 36	50000 ~ 90000	DMF, MEK, TOL	25 ~ 35	400 ~ 500
HI-THANE™ S-2018	48 ~ 52	60000 ~ 100000	DMF, EA, TOL	10 ~ 20	30 ~ 100
HI-THANE™ S-2018D	48 ~ 52	60000 ~ 100000	DMAc, EA, TOL	10 ~ 20	30 ~ 100
HI-THANE™ S-3011B	32 ~ 36	60000 ~ 100000	IPA, MEK(EA), TOL	8 ~ 10	50 ~ 60
HI-THANE™ S-3050W	29 ~ 31	50000 ~ 90000	DMF, MEK, TOL	40 ~ 50	400 ~ 500
HI-THANE™ S-3126B	48 ~ 52	80000 ~ 120000	DMF, EA	100 ~ 110	300 ~ 400

400 ~ 500	<ul style="list-style-type: none"> • High density • Less tackiness 	<ul style="list-style-type: none"> • Thin PUs • Garments • Top coating for water- and windproof treatment 	HI-THANE™ S-1056S
450 ~ 550	<ul style="list-style-type: none"> • Good low temperature resistance • Excellent water pressure resistance 	<ul style="list-style-type: none"> • Thin PUs • Garments • Top coating for water- and windproof treatment 	HI-THANE™ S-1063D
900 ~ 1000	<ul style="list-style-type: none"> • Soft type • High density 	<ul style="list-style-type: none"> • Thin PUs • Garments • Base coating for water- and windproof treatment 	HI-THANE™ S-1064B
450 ~ 550	<ul style="list-style-type: none"> • Good low temperature resistance • Good elasticity • Soft touch • Good heat resistance • Excellent water pressure resistance 	<ul style="list-style-type: none"> • Thin PUs • Garments • Water- and windproof treatment 	HI-THANE™ S-1070J
450 ~ 550	<ul style="list-style-type: none"> • Good low temperature resistance • Good elasticity • Good heat resistance • Excellent water pressure resistance • Good solvent resistance 	<ul style="list-style-type: none"> • Thin PUs • Garments • Water- and windproof treatment 	HI-THANE™ S-1075J
450 ~ 550	<ul style="list-style-type: none"> • Less tackiness • Good hydrolysis resistance • Good solvent resistance 	<ul style="list-style-type: none"> • Thin PUs • Garments • Water- and windproof treatment 	HI-THANE™ S-1004H
500 ~ 600	<ul style="list-style-type: none"> • Soft touch • Good hydrolysis resistance 	<ul style="list-style-type: none"> • Thin PUs • Garments • Water- and windproof treatment 	HI-THANE™ S-1008ND
800 ~ 900	<ul style="list-style-type: none"> • Soft type • High density 	<ul style="list-style-type: none"> • Thin PUs • Garments • Base coating for water- and windproof treatment 	HI-THANE™ S-1040K
350 ~ 450	<ul style="list-style-type: none"> • High density • Less tackiness 	<ul style="list-style-type: none"> • Thin PUs • Garments • Top coating for water- and windproof treatment 	HI-THANE™ S-1066L
650 ~ 750	<ul style="list-style-type: none"> • No yellowing 	<ul style="list-style-type: none"> • Thin PUs • Garments • Top coating for water- and windproof treatment 	HI-THANE™ S-3060E
350 ~ 450	<ul style="list-style-type: none"> • Good low temperature resistance • Good elasticity • High density • Good water pressure resistance • Good adhesion melting temperature (110 ~ 120°C) 	<ul style="list-style-type: none"> • Garments • Base coating for water- and windproof treatment 	HI-THANE™ S-2018
350 ~ 450	<ul style="list-style-type: none"> • Good low temperature resistance • Good elasticity • High density • Good water pressure resistance • Good adhesion melting temperature (110 ~ 120°C) 	<ul style="list-style-type: none"> • Garments • Bags • Base coating for water- and windproof treatment 	HI-THANE™ S-2018D
750 ~ 850	<ul style="list-style-type: none"> • Good low temperature resistance • Good elasticity • Good heat resistance • Excellent water pressure resistance • Good tear strength 	<ul style="list-style-type: none"> • Thin PUs • Garments • Base coating for water- and windproof treatment 	HI-THANE™ S-3011B
400 ~ 500	<ul style="list-style-type: none"> • Non yellowing • Less tackiness 	<ul style="list-style-type: none"> • Thin PUs • Garments • Top coating for water- and windproof treatment 	HI-THANE™ S-3050W
300 ~ 400	<ul style="list-style-type: none"> • Good elasticity • Good water pressure resistance • High density • No tackiness 	<ul style="list-style-type: none"> • Garments • Top coating for water- and windproof treatment 	HI-THANE™ S-3126B

PUs – Wet Process

Smooth Layer

	Non-Volatile (%)	Viscosity (cps/room temp.)	Solvent	Film Properties: 100% MD (Kg/cm ²)	Film Properties: Tensile Strength (Kg/cm ²)
HI-THANE™ SW-1034I	29 ~ 31	120000 ~ 160000	DMF	20 ~ 30	450 ~ 550
HI-THANE™ SW-1034L	22 ~ 24	15000 ~ 20000	DMF	20 ~ 30	450 ~ 550
HI-THANE™ SW-1135	29 ~ 32	90000 ~ 130000	DMF	30 ~ 40	400 ~ 500
HI-THANE™ SW-4089	34 ~ 36	130000 ~ 170000	DMF	35 ~ 45	450 ~ 550
HI-THANE™ SW-5809	29 ~ 31	130000 ~ 170000	DMF	50 ~ 60	450 ~ 550
HI-THANE™ SW-6035	34 ~ 36	130000 ~ 170000	DMF	38 ~ 48	450 ~ 550
HI-THANE™ SW-6045	34 ~ 36	130000 ~ 170000	DMF	40 ~ 50	450 ~ 550
HI-THANE™ SW-6059	34 ~ 36	130000 ~ 170000	DMF	38 ~ 48	450 ~ 550
HI-THANE™ SW-7068	34 ~ 36	130000 ~ 170000	DMF	42 ~ 52	400 ~ 500
HI-THANE™ SW-7085	34 ~ 36	130000 ~ 170000	DMF	50 ~ 60	550 ~ 650
HI-THANE™ SW-7085B	32 ~ 34	130000 ~ 170000	DMF	50 ~ 60	550 ~ 650
HI-THANE™ SW-8059	34 ~ 36	140000 ~ 180000	DMF	50 ~ 60	450 ~ 550

Film Properties: Elongation (%)	Characteristics	Applications	
650 ~ 750	<ul style="list-style-type: none"> • Good buffing properties • Good heat resistance • Good hydrolysis resistance • Soft and wet touch • Good UV, NOx resistance 	<ul style="list-style-type: none"> • Volley balls • Golf gloves 	HI-THANE™ SW-1034I
950 ~ 1050	<ul style="list-style-type: none"> • Good buffing properties • Good heat resistance • Good hydrolysis resistance • Soft and wet touch • Good UV, NOx resistance 	<ul style="list-style-type: none"> • Volley balls • Golf gloves 	HI-THANE™ SW-1034L
750 ~ 850	<ul style="list-style-type: none"> • Good buffing properties • Good heat resistance • Good hydrolysis resistance • Good UV, NOx resistance 	<ul style="list-style-type: none"> • Hot stamping labels 	HI-THANE™ SW-1135
650 ~ 750	<ul style="list-style-type: none"> • Good buffing properties • Good heat resistance • Good hydrolysis resistance • Good UV, NOx resistance 	<ul style="list-style-type: none"> • Shoes • Films 	HI-THANE™ SW-4089
600 ~ 700	<ul style="list-style-type: none"> • Good buffing properties • High adhesive strength • Good heat resistance 	<ul style="list-style-type: none"> • Nubuck for shoes 	HI-THANE™ SW-5809
650 ~ 750	<ul style="list-style-type: none"> • Good buffing properties • Good hydrolysis resistance • Good heat resistance • Good UV, NOx resistance 	<ul style="list-style-type: none"> • Shoes • Film • Balls 	HI-THANE™ SW-6035
600 ~ 700	<ul style="list-style-type: none"> • Good buffing properties • Excellent hydrolysis resistance • Good heat resistance • Good UV, NOx resistance 	<ul style="list-style-type: none"> • Shoes • Film • Balls 	HI-THANE™ SW-6045
650 ~ 750	<ul style="list-style-type: none"> • Good buffing properties • Good hydrolysis resistance • Good heat resistance • Good UV, NOx resistance 	<ul style="list-style-type: none"> • Shoes • Film • Balls 	HI-THANE™ SW-6059
600 ~ 700	<ul style="list-style-type: none"> • Good buffing properties • Good hydrolysis resistance • Good heat resistance 	<ul style="list-style-type: none"> • Nubuck for shoes 	HI-THANE™ SW-7068
600 ~ 700	<ul style="list-style-type: none"> • Good buffing properties • Good hydrolysis resistance • Good heat resistance • Good UV, NOx resistance 	<ul style="list-style-type: none"> • Shoes • Semi hard type PUs 	HI-THANE™ SW-7085
600 ~ 700	<ul style="list-style-type: none"> • Good buffing properties • Good hydrolysis resistance • Good heat resistance • Good UV, NOx resistance 	<ul style="list-style-type: none"> • Shoes • Semi hard type PUs 	HI-THANE™ SW-7085B
550 ~ 650	<ul style="list-style-type: none"> • Excellent embossing properties 	<ul style="list-style-type: none"> • Basket balls 	HI-THANE™ SW-8059

Dipping

	Non-Volatile (%)	Viscosity (cps/room temp.)	Solvent	Film Properties: 100% MD (Kg/cm ²)	Film Properties: Tensile Strength (Kg/cm ²)
HI-THANE™ SW-3061	30 ~ 32	60000 ~ 90000	DMF	45 ~ 55	450 ~ 550
HI-THANE™ SW-5109	29 ~ 31	80000 ~ 120000	DMF	70 ~ 85	500 ~ 600
HI-THANE™ SW-55P	29 ~ 32	60000 ~ 100000	DMF	55 ~ 60	450 ~ 550

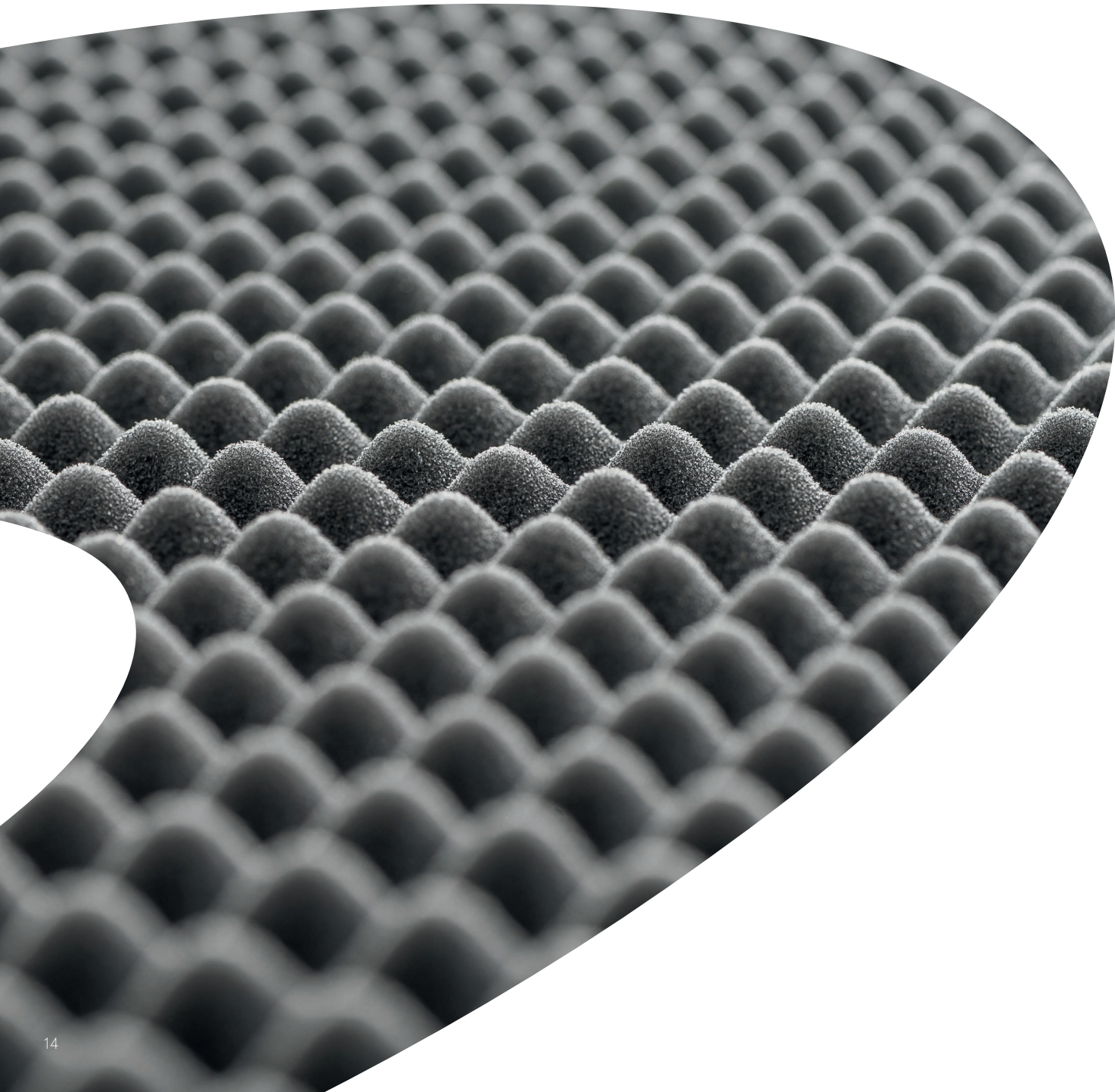
Gloves

HI-THANE™ SW-2030	29 ~ 31	140000 ~ 180000	DMF	20 ~ 30	400 ~ 500
HI-THANE™ SW-8040A	27 ~ 29	130000 ~ 180000	DMF	70 ~ 80	600 ~ 700
HI-THANE™ SW-8075J	29 ~ 31	120000 ~ 160000	DMF	35 ~ 45	500 ~ 600
HI-THANE™ SW-8075JM	27 ~ 29	60000 ~ 90000	DMF	35 ~ 45	500 ~ 600
HI-THANE™ SW-8075JN	29 ~ 31	150000 ~ 190000	DMF	35 ~ 45	500 ~ 600
HI-THANE™ SW-8079	29 ~ 31	140000 ~ 180000	DMF	30 ~ 40	450 ~ 550
HI-THANE™ SW-8083	29 ~ 31	140000 ~ 180000	DMF	20 ~ 30	450 ~ 550
HI-THANE™ SW-8085D	29 ~ 31	140000 ~ 200000	DMF	28 ~ 38	500 ~ 600
HI-THANE™ SW-8085L	29 ~ 31	40000 ~ 60000	DMF	28 ~ 38	500 ~ 600
HI-THANE™ SW-8087	29 ~ 31	140000 ~ 200000	DMF	25 ~ 35	500 ~ 600

Film Properties: Elongation (%)	Characteristics	Applications	
550 ~ 650	<ul style="list-style-type: none"> • Excellent in pigment blends 	<ul style="list-style-type: none"> • Toners 	HI-THANE™ SW-3061
500 ~ 600	<ul style="list-style-type: none"> • Suitable for dipping process • Less tackiness • Excellent hydrolysis resistance 	<ul style="list-style-type: none"> • Dipping for shoes 	HI-THANE™ SW-5109
550 ~ 650	<ul style="list-style-type: none"> • Good low temperature resistance 	<ul style="list-style-type: none"> • Dipping for shoes • Polishing pads 	HI-THANE™ SW-55P
650 ~ 750	<ul style="list-style-type: none"> • Suitable for dipping process • Good heat resistance • Very easy removal from the mold 	<ul style="list-style-type: none"> • Dipping for gloves 	HI-THANE™ SW-2030
500 ~ 600	<ul style="list-style-type: none"> • Good in mar resistance • Suitable for dipping process • Good heat resistance 	<ul style="list-style-type: none"> • Dipping for gloves • Semi hard type PUs 	HI-THANE™ SW-8040A
550 ~ 650	<ul style="list-style-type: none"> • Suitable for dipping process • Easy removal from the mold • Good heat resistance 	<ul style="list-style-type: none"> • Dipping for gloves 	HI-THANE™ SW-8075J
550 ~ 650	<ul style="list-style-type: none"> • Good in mar resistance • Suitable for dipping process • Good heat resistance 	<ul style="list-style-type: none"> • Dipping for gloves 	HI-THANE™ SW-8075JM
550 ~ 650	<ul style="list-style-type: none"> • Suitable for dipping process • Easy removal from the mold • Good heat resistance 	<ul style="list-style-type: none"> • Dipping for gloves 	HI-THANE™ SW-8075JN
650 ~ 750	<ul style="list-style-type: none"> • Suitable for dipping process • Easy removal from the mold • Good heat resistance 	<ul style="list-style-type: none"> • Dipping for gloves 	HI-THANE™ SW-8079
650 ~ 750	<ul style="list-style-type: none"> • Good in mar resistance • Suitable for dipping process • Good heat resistance • Good wet touch 	<ul style="list-style-type: none"> • Dipping for gloves 	HI-THANE™ SW-8083
550 ~ 650	<ul style="list-style-type: none"> • Good in mar resistance • Suitable for dipping process • Good heat resistance 	<ul style="list-style-type: none"> • Dipping for gloves 	HI-THANE™ SW-8085D
550 ~ 650	<ul style="list-style-type: none"> • Good in mar resistance • Suitable for dipping process • Good heat resistance • Good anti-blocking 	<ul style="list-style-type: none"> • Dipping for gloves 	HI-THANE™ SW-8085L
550 ~ 650	<ul style="list-style-type: none"> • Suitable for dipping process • Good heat resistance • Very easy removal from the mold 	<ul style="list-style-type: none"> • Dipping for gloves 	HI-THANE™ SW-8087

Water- and Windproofing

HI-THANE™ SW-305	29 ~ 32	90000 ~ 130000	DMF	40 ~ 50	450 ~ 550
HI-THANE™ SW-508	29 ~ 32	130000 ~ 170000	DMF	50 ~ 60	450 ~ 550
HI-THANE™ SW-903	19 ~ 22	60000 ~ 100000	DMF	80 ~ 90	450 ~ 550



500 ~ 600	<ul style="list-style-type: none"> • Good waterproofing and moisture permeability 	<ul style="list-style-type: none"> • Garments for breathable treatment 	HI-THANE™ SW-305
500 ~ 600	<ul style="list-style-type: none"> • Good waterproofing and moisture permeability • Good buffing properties 	<ul style="list-style-type: none"> • Garments for breathable treatment 	HI-THANE™ SW-508
350 ~ 450	<ul style="list-style-type: none"> • Good waterproofing and moisture permeability 	<ul style="list-style-type: none"> • Garments for breathable treatment 	HI-THANE™ SW-903

PUs – Adhesives

Artificial Leather

	Non-Volatile (%)	Viscosity (cps/room temp.)	Solvent	Film Properties: 100% MD (Kg/cm ²)	Film Properties: Tensile Strength (Kg/cm ²)
HI-THANE™ A-1080HM	35 ~ 37	3000 ~ 4000	DMF, MEK	20 ~ 30	200 ~ 300
HI-THANE™ A-1081HM	35 ~ 37	6000 ~ 12000	DMAC, MEK	20 ~ 30	200 ~ 300
HI-THANE™ A-1212HM	49 ~ 51	11000 ~ 16000	DMF, MEK	20 ~ 30	80 ~ 90
HI-THANE™ A-1212HM-L	49 ~ 51	11000 ~ 16000	DMF, MEK	10 ~ 20	50 ~ 60
HI-THANE™ A-1830HM-1	29 ~ 31	10000 ~ 15000	DMF, MEK	25 ~ 35	300 ~ 400
HI-THANE™ A-2014	34 ~ 36	80000 ~ 120000	DMF, MEK, TOL	10 ~ 15	200 ~ 250
HI-THANE™ A-205	48 ~ 52	40000 ~ 70000	DMF, MEK	–	–
HI-THANE™ A-2075	73 ~ 77	150 ~ 450	ET-AC	–	–
HI-THANE™ A-2083HM	34 ~ 36	11000 ~ 15000	DMF, EA, TOL	50 ~ 60	150 ~ 200
HI-THANE™ A-2090HM	43 ~ 47	10000 ~ 14000	DMF, ET-AC	–	–
HI-THANE™ A-BWP	33 ~ 35	100 ~ 500	MEK, TOL	BWP / CA-35BL = 9 ~ 10/1	
HI-THANE™ A-3310D	68 ~ 72	70000 ~ 110000	DMF, MEK	–	–
HI-THANE™ A-7004	43 ~ 47	70000 ~ 110000	DMF, EA, TOL	75 ~ 80	400 ~ 500
HI-THANE™ A-7004YS	43 ~ 47	70000 ~ 110000	DMF, EA	75 ~ 80	400 ~ 500
HI-THANE™ A-7005	43 ~ 47	30000 ~ 60000	MEK, TOL	25 ~ 35	300 ~ 400
HI-THANE™ A-7026	73 ~ 77	60000 ~ 100000	MEK	10 ~ 15	150 ~ 200
HI-THANE™ A-7028	68 ~ 72	40000 ~ 70000	MEK, TOL	10 ~ 15	150 ~ 200
HI-THANE™ A-7069C	68 ~ 72	90000 ~ 130000	DMF, MEK	15 ~ 25	300 ~ 400
HI-THANE™ A-7069M	68 ~ 72	90000 ~ 130000	MEK	15 ~ 25	300 ~ 400
HI-THANE™ A-7070	68 ~ 72	80000 ~ 120000	DMF, MEK, TOL	20 ~ 30	400 ~ 500
HI-THANE™ A-8006H	58 ~ 62	60000 ~ 100000	TOL	15 ~ 20	300 ~ 400
HI-THANE™ A-8006HL	58 ~ 62	5000 ~ 10000	TOL	15 ~ 20	300 ~ 400
HI-THANE™ A-8007	44 ~ 46	80000 ~ 120000	DMF, MEK, TOL	60 ~ 65	500 ~ 550
HI-THANE™ A-8070	44 ~ 46	80000 ~ 120000	DMF, MEK, TOL	70 ~ 75	500 ~ 550
HI-THANE™ A-8802	78 ~ 82	20000 ~ 40000	MEK, TOL	10 ~ 15	300 ~ 400
HI-THANE™ A-9401	29 ~ 31	10000 ~ 14000	DMF, MEK	20 ~ 30	150 ~ 250
HI-THANE™ A-9404	29 ~ 31	40000 ~ 50000	DMF, MEK	20 ~ 30	300 ~ 400

Film Properties: Elongation (%)	Characteristics	Applications	
600 ~ 700	<ul style="list-style-type: none"> Hot melt type Melting temperature 100 ~ 110°C 	<ul style="list-style-type: none"> Garments 	HI-THANE™ A-1080HM
600 ~ 700	<ul style="list-style-type: none"> Hot melt type Melting temperature 100 ~ 110°C 	<ul style="list-style-type: none"> Garments 	HI-THANE™ A-1081HM
550 ~ 650	<ul style="list-style-type: none"> Hot melt type Melting temperature 100 ~ 115°C 	<ul style="list-style-type: none"> Garments 	HI-THANE™ A-1212HM
450 ~ 550	<ul style="list-style-type: none"> Hot melt type Melting temperature 70 ~ 80°C 	<ul style="list-style-type: none"> Garments 	HI-THANE™ A-1212HM-L
500 ~ 600	<ul style="list-style-type: none"> Hot melt type Melting temperature 130°C 	<ul style="list-style-type: none"> Garments 	HI-THANE™ A-1830HM
900 ~ 1000	<ul style="list-style-type: none"> Soft type 	<ul style="list-style-type: none"> Garments 	HI-THANE™ A-2014
—	<ul style="list-style-type: none"> Semi 2-component type adhesive Good initial tack 	<ul style="list-style-type: none"> Shoes Bags 	HI-THANE™ A-205
—	<ul style="list-style-type: none"> Additive Adhesion Promotor 	<ul style="list-style-type: none"> Gravure ink for PET films 	HI-THANE™ A-2075
750 ~ 850	<ul style="list-style-type: none"> Hot melt type Melting temperature 60 ~ 70°C 	<ul style="list-style-type: none"> Garments 	HI-THANE™ A-2083HM
—	<ul style="list-style-type: none"> Hot melt type Melting temperature 50 ~ 60°C Excellent UV resistance 	<ul style="list-style-type: none"> Shoes Bags 	HI-THANE™ A-2090HM
BWP / CA-35BL = 9 ~ 10/1	<ul style="list-style-type: none"> Excellent adhesion between wood and plastic Heat press type 	<ul style="list-style-type: none"> Glass fiber / wood lamination 	HI-THANE™ A-BWP
—	<ul style="list-style-type: none"> Semi 2-component type adhesive Good adhesion 	<ul style="list-style-type: none"> Vehicles 	HI-THANE™ A-3310D
400 ~ 500	<ul style="list-style-type: none"> Excellent adhesion to PVC, nylon Good hydrolysis resistance 	<ul style="list-style-type: none"> General type PUs 	HI-THANE™ A-7004
400 ~ 500	<ul style="list-style-type: none"> Excellent adhesion to PVC, nylon Good hydrolysis resistance 	<ul style="list-style-type: none"> General type PUs 	HI-THANE™ A-7004YS
400 ~ 500	<ul style="list-style-type: none"> Excellent adhesion to PVC, nylon Good adhesion resistance 	<ul style="list-style-type: none"> General type PUs 	HI-THANE™ A-7005
400 ~ 500	<ul style="list-style-type: none"> Excellent adhesion to PVC Dry lamination type 	<ul style="list-style-type: none"> General type PUs Stamping foils 	HI-THANE™ A-7026
400 ~ 500	<ul style="list-style-type: none"> Excellent adhesion to PVC Good hydrolysis resistance 	<ul style="list-style-type: none"> General type for PVC leathers 	HI-THANE™ A-7028
400 ~ 500	<ul style="list-style-type: none"> Excellent adhesion Good low temperature flexibility 	<ul style="list-style-type: none"> General type PUs 	HI-THANE™ A-7069C
400 ~ 500	<ul style="list-style-type: none"> Excellent adhesion Good low temperature flexibility 	<ul style="list-style-type: none"> Artificial leathers for furniture 	HI-THANE™ A-7069M
500 ~ 550	<ul style="list-style-type: none"> Good hydrolysis resistance 	<ul style="list-style-type: none"> Artificial leathers for sport shoes 	HI-THANE™ A-7070
400 ~ 450	<ul style="list-style-type: none"> Dry lamination Good initial tack 	<ul style="list-style-type: none"> General type PUs Stamping foils 	HI-THANE™ A-8006H
400 ~ 450	<ul style="list-style-type: none"> Dry lamination Good initial tack 	<ul style="list-style-type: none"> General type PUs Stamping foils 	HI-THANE™ A-8006HL
250 ~ 300	<ul style="list-style-type: none"> Semi-hard type Good elasticity Good adhesion 	<ul style="list-style-type: none"> Bags 	HI-THANE™ A-8007
250 ~ 300	<ul style="list-style-type: none"> Hard type Good hydrolysis resistance Good adhesion 	<ul style="list-style-type: none"> Bags 	HI-THANE™ A-8070
550 ~ 650	<ul style="list-style-type: none"> Foaming type Multipurpose adhesion to PVC 	<ul style="list-style-type: none"> General type PUs 	HI-THANE™ A-8802
450 ~ 550	<ul style="list-style-type: none"> Good electromagnetic shielding binder 	<ul style="list-style-type: none"> Binder for metal powders 	HI-THANE™ A-9401
600 ~ 700	<ul style="list-style-type: none"> Good electromagnetic shielding binder 	<ul style="list-style-type: none"> Binder for metal powders 	HI-THANE™ A-9404

PUs – Adhesives for Flexible Packaging

One Component

	Non-Volatile (%)	Viscosity (cps/room temp.)	Solvent	NCO content (%)
HI-THANE™ A-8200	100	800 ~ 1300 (80°C)	None	4.8 ~ 5.8
HI-THANE™ A-8400	73 ~ 77	3000 ~ 5000	ET-AC	2 ~ 3

Two Component

HI-THANE™ A-2050LM	68 ~ 72	2000 ~ 5000	MeOH	–
HI-THANE™ A-2070LM	67 ~ 73	2000 ~ 5000	MeOH	–
HI-THANE™ A-2100S	63 ~ 67	2000 ~ 5000	ET-AC	–
HI-THANE™ A-2232	33 ~ 37	250 ~ 500	ET-AC, EtOH	–
HI-THANE™ A-2750	73 ~ 77	4000 ~ 8000	ET-AC	–
HI-THANE™ A-3065	63 ~ 67	2000 ~ 5000	ET-AC	–
HI-THANE™ A-3070	68 ~ 72	8000 ~ 12000	ET-AC	–
HI-THANE™ A-3100S	63 ~ 67	2000 ~ 5000	ET-AC	–
HI-THANE™ A-3110	48 ~ 52	2000 ~ 5000	ET-AC	–
HI-THANE™ A-3110T	48 ~ 52	2000 ~ 5000	ET-AC	–
HI-THANE™ A-3360E	58 ~ 62	400 ~ 800	ET-AC	–
HI-THANE™ A-4210R	58 ~ 62	2000 ~ 5000	ET-AC	–
HI-THANE™ A-4650R	63 ~ 67	2000 ~ 5000	ET-AC	–
HI-THANE™ A-5100B	58 ~ 62	2000 ~ 5000	ET-AC	–
HI-THANE™ A-6200	100	600 ~ 1000 (40°C)	None	–
HI-THANE™ A-6301	100	700 ~ 1300 (40°C)	None	–
HI-THANE™ A-720M	73 ~ 77	4000 ~ 8000	ET-AC	–
HI-THANE™ A-7300	100	600 ~ 1000 (40°C)	None	–
HI-THANE™ A-7332	100	600 ~ 1000 (40°C)	None	–
HI-THANE™ A-9506	64 ~ 68	2000 ~ 5000	ET-AC	–
HI-THANE™ A-2150A	52 ~ 56	350 ~ 650	ET-AC	–

Characteristics	Applications	
• Moisture cured type	PET, OPP/CPP, OPP/VM films, OPP/AL leaf	HI-THANE™ A-8200
• Moisture cured type	PET, OPP/CPP, OPP/VM films, OPP/AL leaf	HI-THANE™ A-8400
• Good adhesion for generic plastic films	PET, OPP/CPP, PET, OPP/AL leaf, PET, OPP/VM films, etc.	HI-THANE™ A-2050LM
• Good adhesion for generic plastic films	PET, OPP/CPP, PET, OPP/AL leaf, PET, OPP/VM films, etc.	HI-THANE™ A-2070LM
• Good adhesion for generic plastic films	PET, OPP/CPP, PET, OPP/AL leaf, PET, OPP/VM films/LLDPE, T-die anchor coating, etc.	HI-THANE™ A-2100S
• Good adhesion for paper films	Paper binding resin	HI-THANE™ A-2232
• Good adhesion for generic plastic films	PET, OPP/CPP, PET, OPP/AL leaf, PET, OPP/VM films/LLDPE, T-die anchor coating, etc.	HI-THANE™ A-2750
• Good adhesion for plastic films	PET, OPP/CPP, PET, OPP/AL leaf, PET, OPP/VM films/LLDPE, T-die anchor coating, etc.	HI-THANE™ A-3065
• Good adhesion for plastic films	PET, OPP/CPP, PET, OPP/AL leaf, PET, OPP/VM films/LLDPE, T-die anchor coating, etc.	HI-THANE™ A-3070
• Good adhesion for generic plastic films • Good initial tack	PET, OPP/CPP, PET, OPP/AL leaf, PET, OPP/VM films/LLDPE, T-die anchor coating, etc.	HI-THANE™ A-3100S
• Excellent adhesion for generic plastic films • Good initial tack • Outstanding heat resistance	PET, OPP/CPP, PET, OPP/AL leaf, PET, OPP/VM films/LLDPE, T-die anchor coating, etc.	HI-THANE™ A-3110
• Good adhesion for generic plastic films	PET, OPP/CPP, PET, OPP/AL leaf, PET, OPP/VM films/LLDPE, T-die anchor coating, etc.	HI-THANE™ A-3110T
• Good initial tack	PET, OPP/CPP, PET, OPP/AL leaf, PET, OPP/VM films/LLDPE, T-die anchor coating, etc.	HI-THANE™ A-3360E
• Excellent adhesion for generic plastic films • Good initial tack • Outstanding heat resistance	PET, OPP/CPP, PET, OPP/AL leaf, PET, OPP/VM films/LLDPE, T-die anchor coating, etc.	HI-THANE™ A-4210R
• Excellent adhesion for generic plastic films • Good initial tack • Outstanding heat resistance	PET, OPP/CPP, PET, OPP/AL leaf, PET, OPP/VM films/LLDPE, T-die anchor coating, etc.	HI-THANE™ A-4650R
• Excellent adhesion for generic plastic films • Good initial tack • Outstanding heat resistance	PET, OPP/CPP, PET, OPP/AL leaf, PET, OPP/VM films/LLDPE, T-die anchor coating, etc.	HI-THANE™ A-5100B
• A-7332/A-6200 = 100 / 40 ~ 50	PET, OPP/CPP, OPP/AL leaf, OPP, PET/VM films/LLDPE	HI-THANE™ A-6200
• A-7300/A-6301 = 100 / 40 ~ 50	PET, OPP/CPP, OPP/AL leaf, OPP, PET/VM films/LLDPE	HI-THANE™ A-6301
• Good adhesion for generic plastic films • Good initial adhesion	PET, OPP/CPP, PET, OPP/AL leaf, PET, OPP/VM films, etc.	HI-THANE™ A-720M
• A-7300/A-6301 = 100 / 40 ~ 50	PET, OPP/CPP, OPP/AL leaf, OPP, PET/VM films/LLDPE	HI-THANE™ A-7300
• A-7332/A-6200 = 100 / 40 ~ 50	PET, OPP/CPP, OPP/AL leaf, OPP, PET/VM films/LLDPE	HI-THANE™ A-7332
• Good adhesion for generic plastic films	PET, OPP/CPP, PET, OPP/AL leaf, PET, OPP/VM films, T-die anchor coating, etc.	HI-THANE™ A-9506
• Good adhesion for generic plastic films • Good initial tack	PET, OPP/CPP, PET, OPP/AL leaf, PET, OPP/VM films/LLDPE, Flexible aluminum duct coating, etc.	HI-THANE™ A-2150A

PUs – Ink Binders

	Non-Volatile (%)	Viscosity (cps/room temp.)	Solvent	Characteristics	Applications
HI-THANE™ A-2013	34 ~ 36	400 ~ 700	ET-AC, IPA	<ul style="list-style-type: none"> • Excellent adhesion to films • Resolubility for solvent • Outstanding heat resistance 	<ul style="list-style-type: none"> • PET • OPP • Nylon
HI-THANE™ A-3033A	29 ~ 31	200 ~ 500	MEK, ET-AC, IPA	<ul style="list-style-type: none"> • Excellent adhesion to films • Resolubility for solvent • Outstanding heat resistance 	<ul style="list-style-type: none"> • PET • OPP • Nylon
HI-THANE™ A-7006	49 ~ 51	130000 ~ 180000	MEK, TOL	<ul style="list-style-type: none"> • Excellent adhesion to films • Resolubility for solvent 	<ul style="list-style-type: none"> • PET • OPP • Nylon
HI-THANE™ A-860	29 ~ 31	800 ~ 1300	ET-AC, IPA	<ul style="list-style-type: none"> • Excellent adhesion to films • Resolubility for solvent • Outstanding heat resistance 	<ul style="list-style-type: none"> • PET • OPP • Nylon
HI-THANE™ A-890L	29 ~ 31	400 ~ 700	ET-AC, IPA	<ul style="list-style-type: none"> • Excellent adhesion to films • Resolubility for solvent • Outstanding heat resistance 	<ul style="list-style-type: none"> • PET • OPP • Nylon
HI-THANE™ A-890K	29 ~ 31	400 ~ 700	ET-AC, IPA	<ul style="list-style-type: none"> • Excellent adhesion to films • Resolubility for solvent 	<ul style="list-style-type: none"> • PET • OPP • Nylon
HI-THANE™ A-9000	47 ~ 51	8000 ~ 12000	ET-OH, ET-AC	<ul style="list-style-type: none"> • For flexo and gravure ink • No yellowing type PU • Excellent adhesion to films 	<ul style="list-style-type: none"> • PET • OPP • Nylon
HI-THANE™ A-9001E	29 ~ 31	500 ~ 800	ET-AC, IPA	<ul style="list-style-type: none"> • Excellent adhesion to films • Resolubility for solvent • Outstanding heat resistance 	<ul style="list-style-type: none"> • PET • OPP • Nylon
HI-THANE™ A-9004B	29 ~ 31	400 ~ 700	ET-AC, IPA	<ul style="list-style-type: none"> • Excellent adhesion to films • Resolubility for solvent • Outstanding heat resistance 	<ul style="list-style-type: none"> • PET • OPP • Nylon
HI-THANE™ A-9004HL	34 ~ 36	400 ~ 700	ET-AC, IPA	<ul style="list-style-type: none"> • Excellent adhesion to films • Resolubility for solvent • Outstanding heat resistance 	<ul style="list-style-type: none"> • PET • OPP • Nylon
HI-THANE™ A-9005B	29 ~ 31	900 ~ 1400	ET-AC, IPA	<ul style="list-style-type: none"> • Excellent adhesion to films • Resolubility for solvent • Outstanding heat resistance 	<ul style="list-style-type: none"> • PET • OPP • Nylon
HI-THANE™ A-9015	33 ~ 37	600 ~ 1000	MEK, IPA	<ul style="list-style-type: none"> • Excellent adhesion to films • Resolubility for solvent 	<ul style="list-style-type: none"> • PET • OPP • Nylon
HI-THANE™ A-9301B	29 ~ 31	850 ~ 1500	ET-AC, IPA	<ul style="list-style-type: none"> • Excellent adhesion to films • Resolubility for solvent 	<ul style="list-style-type: none"> • PET • OPP • Nylon
HI-THANE™ A-9301E	29 ~ 31	850 ~ 1500	ET-AC, IPA	<ul style="list-style-type: none"> • Excellent adhesion to films • Resolubility for solvent 	<ul style="list-style-type: none"> • PET • OPP • Nylon

PUs – Adhesive Hardeners

	Non-Volatile (%)	Viscosity (cps/room temp.)	Solvent	NCO Content (%)	Characteristics	Applications
HI-THANE™ CA-295H	73 ~ 77	2000 ~ 5000	ET-AC	4.5 ~ 5.0	• No yellowing	• Hardener for A-720M
HI-THANE™ CA-35BL	33 ~ 36	–	ET-AC	–	• Block type	• Hardener for A-BWP
HI-THANE™ CA-50H	48 ~ 52	5 ~ 100	BT-AC, ET-AC	8.5 ~ 9.5	• Inks	• Hardener for gravure inks
HI-THANE™ CA-50NY	48 ~ 52	20 ~ 50	MEK	6.5 ~ 7.5	• No yellowing	• Hardener for general adhesives
HI-THANE™ CA-75	73 ~ 77	1000 ~ 3000	ET-AC	12.5 ~ 13.5	• General type	• Hardener for general adhesives
HI-THANE™ CA-75NY	73 ~ 77	2000 ~ 5000	MEK	10 ~ 12	• No yellowing	• Hardener for general adhesives
HI-THANE™ CA-100EP	100	11000 ~ 14000	None	–	• Epoxy	• Hardener for A-2050LM, A-2070LM



PUs – Curing Accelerators

	Non-Volatile (%)	Solvent	Characteristics	Applications
HI-THANE™ AT-222R2	1.8 ~ 2.2	TOL	• General tin type	• Accelerator for two component type
HI-THANE™ AT-Q HI-THANE™ AT-V	AT-Q: 1.3 ~ 1.7 AT-V: 2.8 ~ 3.2	TOL	• High activity tin type	• Accelerator
HI-THANE™ AT-S	20	TOL, MEK	• Very high activity tin type	• Accelerator
HI-THANE™ C-300	10	MEK	• Very high activity tin type	• Accelerator
HI-THANE™ C-309	10	MEK	• Very high activity tin type • No MBT, DBT, TBT	• Accelerator
HI-THANE™ C-380	9 ~ 11	MEK	• Very high activity tin type • No MBT, DBT, TBT	• Accelerator
HI-THANE™ AD-30CL	48 ~ 52	DMF	• Suitable for Synthetic Leather	• Additive for UV resistance
HI-THANE™ AD-3000	48 ~ 52	ET-AC	• Suitable for PET film	• Adhesion Promotor for gravure inks
HI-THANE™ AD-5000	21 ~ 23	ET-AC, MEK, TOL, IPA	• Suitable for OPP film	• Adhesion Promotor for gravure inks (OPP)

PUs – Beads

	Appearance	Odor	Particle size (um)	Oil Absorbency Linseed Oil (ml/100g)	Microbiology	Bulk Density (g/ml)	Arsenic, Lead	Isocyanate	Solvent
HI-THANE™ UB-17	White PW	Odorless	17 ± 3	50 ± 5	< 100 organisms/g, no pathogens	0.58 ± 0.03	< 0.001%	< 0.001%	< 0.001%
HI-THANE™ UB-26	White PW	Odorless	26 ± 3	45 ± 5	< 100 organisms/g, no pathogens	0.63 ± 0.03	< 0.001%	< 0.001%	< 0.001%
Test method used	Visual	Organo-leptic	COULTER LS-230	ASTM D 281-84	Current USP microbial limit	ASTM D 1895-89	ASTM D 3335	GC HP-1 column	GC SP-2250 column

Thermoplastic Polyurethanes (TPUs)



SONGSTOMER™

P1000 (Polyester based)

Characteristics			Standard grade				
Processing			Injection molding, Extrusion				
Main Applications			Pneumatic hoses, Mobile phone cases, Snow chains				
Properties	Test Method	Units	P-1155D	P-1160D	P-1164D	P-1168D	P-1175D
Hardness	ASTM D2240	Shore A	—	—	—	—	—
		Shore D	58 ± 3	61 ± 3	63 ± 3	68 ± 3	72 ± 3
Specific Gravity	ASTM D792	g/cm³	1.22	1.23	1.23	1.24	1.24
Tensile Strength	ASTM D412	kgf/cm²	450	450	500	450	400
Tensile Stress at 100% Modulus	ASTM D412	kgf/cm²	130	170	180	200	240
Tensile Stress at 300% Modulus	ASTM D412	kgf/cm²	220	250	300	300	300
Ultimate Elongation	ASTM D412	%	400	350	350	400	400
Tear Strength	ASTM D624	kgf/cm	160	190	195	200	210
Taber Abrasion (H18 Wheel, 1000 g Load)	ASTM D4060	mg/1,000 cycle	60	80	90	100	105
Mold Shrinkage	ASTM D955	m/m	0.0045	0.0045	0.0040	0.0040	0.0040
Vicat Softening Temperature	ASTM D1525	°C	129	141	150	155	164
Injection Molding Conditions	Feed Barrel	°C	200	205	210	210	210
	Transition		205	210	215	215	215
	Metering		210	215	220	220	220
	Nozzle		210	215	220	220	220
	Mold		20 ~ 40	20 ~ 40	20 ~ 40	20 ~ 40	20 ~ 40
Extrusion Conditions	Zone 1	°C	200	—	—	—	—
	Zone 2		205	—	—	—	—
	Zone 3		210	—	—	—	—
	Adapter		215	—	—	—	—
	Die		210	—	—	—	—

SONGSTOMER™

P3100 (Polyester based)

Characteristics			Standard grade								
Processing			Injection molding, Extrusion								
Main Applications			Pneumatic hoses, Mobile phone cases, Snow chains								
Properties	Test Method	Units	P-3160A	P-3170A	P-3175A	P-3180A	P-3185A	P-3190A	P-3190A-NB	P-3195A	P-3198A
Hardness	ASTM D2240	Shore A	65 ± 2	70 ± 2	78 ± 2	82 ± 2	87 ± 2	90 ± 2	92 ± 2	95 ± 2	97 ± 2
		Shore D	—	—	—	—	—	—	—	—	—
Specific Gravity	ASTM D792	g/cm³	1.13	1.14	1.19	1.19	1.20	1.21	1.21	1.22	1.22
Tensile Strength	ASTM D412	kgf/cm²	200	220	300	350	400	450	480	500	450
Tensile Stress at 100% Modulus	ASTM D412	kgf/cm²	20	25	40	40	60	70	90	100	130
Tensile Stress at 300% Modulus	ASTM D412	kgf/cm²	40	45	90	90	100	150	180	200	220
Ultimate Elongation	ASTM D412	%	700	750	500	450	450	450	400	400	400
Tear Strength	ASTM D624	kgf/cm	50	60	80	90	100	110	120	140	160
Taber Abrasion (H18 Wheel, 1000 g Load)	ASTM D4060	mg/1,000 cycle	15	15	20	25	30	35	40	50	60
Mold Shrinkage	ASTM D955	m/m	0.0085	0.0085	0.0080	0.0060	0.0055	0.0050	0.0050	0.0050	0.0045
Vicat Softening Temperature	ASTM D1525	°C	72	73	80	81	101	105	115	126	129
Injection Molding Conditions	Feed Barrel	°C	175	175	180	185	190	195	200	200	200
	Transi-tion		180	180	185	190	195	200	205	205	205
	Metering		185	185	190	195	200	205	210	210	210
	Nozzle		185	185	190	195	200	205	210	210	210
	Mold		20 ~ 40	20 ~ 40	20 ~ 40	20 ~ 40	20 ~ 40	20 ~ 40	20 ~ 40	20 ~ 40	20 ~ 40
Extrusion Conditions	Zone 1	°C	175	175	180	185	190	195	200	200	200
	Zone 2		180	180	185	190	195	200	205	205	205
	Zone 3		185	185	190	195	200	205	210	210	210
	Adapter		190	190	195	200	205	210	215	215	215
	Die		185	185	190	195	200	205	210	210	210

SONGSTOMER™

P3200 (Polyether based)

Characteristics			Standard grade				
Processing			Injection molding, Extrusion				
Main Applications			Cable sheath, Fire hoses				
Properties	Test Method	Units	P-3275A	P-3280A	P-3285A	P-3290A	P-3295A
Hardness	ASTM D2240	Shore A	75 ± 2	82 ± 2	86 ± 2	92 ± 2	95 ± 2
		Shore D	—	—	—	—	—
Specific Gravity	ASTM D792	g/cm³	1.11	1.11	1.12	1.13	1.14
Tensile Strength	ASTM D412	kgf/cm²	250	280	300	350	400
Tensile Stress at 100% Modulus	ASTM D412	kgf/cm²	35	40	60	100	120
Tensile Stress at 300% Modulus	ASTM D412	kgf/cm²	65	70	110	150	220
Ultimate Elongation	ASTM D412	%	500	450	450	450	400
Tear Strength	ASTM D624	kgf/cm	60	70	95	110	120
Taber Abrasion (H18 Wheel, 1000 g Load)	ASTM D4060	mg/1,000 cycle	20	20	35	40	45
Mold Shrinkage	ASTM D955	m/m	0.0060	0.0045	0.0040	0.0035	0.0030
Vicat Softening Temperature	ASTM D1525	°C	64	78	87	103	121
Injection Molding Conditions	Feed Barrel	°C	180	185	190	195	195
	Transition		185	190	195	200	200
	Metering		190	195	200	205	205
	Nozzle		190	195	200	205	205
	Mold		20 ~ 40	20 ~ 40	20 ~ 40	20 ~ 40	20 ~ 40
Extrusion Conditions	Zone 1	°C	180	185	190	195	195
	Zone 2		185	190	195	200	200
	Zone 3		190	195	200	205	205
	Adapter		195	200	205	210	210
	Die		190	195	200	205	205

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P2000 (Polyester based)

Characteristics			Transparency							
Processing			Injection molding, Extrusion							
Main Applications			Shoes components, Pneumatic hoses, Mobile phone cases							
Properties	Test Method	Units	P-2180A	P-2185A	P-2190A	P-2195A	P-2155D	P-2160D	P-2164D	P-2168D
Hardness	ASTM D2240	Shore A	82 ± 2	87 ± 2	92 ± 2	96 ± 2	—	—	—	—
		Shore D	—	—	—	—	58 ± 3	61 ± 3	63 ± 3	68 ± 3
Specific Gravity	ASTM D792	g/cm³	1.19	1.20	1.21	1.23	1.23	1.23	1.23	1.24
Tensile Strength	ASTM D412	kgf/cm²	350	420	450	450	400	450	480	450
Tensile Stress at 100% Modulus	ASTM D412	kgf/cm²	40	70	80	130	140	170	180	190
Tensile Stress at 300% Modulus	ASTM D412	kgf/cm²	90	130	150	230	230	250	300	330
Ultimate Elongation	ASTM D412	%	450	400	450	400	400	400	350	350
Tear Strength	ASTM D624	kgf/cm	80	100	100	130	140	180	185	190
Taber Abrasion (H18 Wheel, 1000 g Load)	ASTM D4060	mg/1,000 cycle	35	40	45	55	70	80	100	105
Mold Shrinkage	ASTM D955	m/m	0.0055	0.0050	0.0045	0.0045	0.0045	0.0045	0.0040	0.0040
Vicat Softening Temperature	ASTM D1525	°C	77	94	98	113	115	120	122	124
Injection Molding Conditions	Feed Barrel	°C	185	190	195	200	200	205	210	210
	Transi- tion		190	195	200	205	205	210	215	215
	Metering		195	200	205	210	210	215	220	220
	Nozzle		195	200	205	210	210	215	220	220
	Mold		20 ~ 40	20 ~ 40	20 ~ 40	20 ~ 40	20 ~ 40	20 ~ 40	20 ~ 40	20 ~ 40
Extrusion Conditions	Zone 1	°C	185	190	195	200	200	—	—	—
	Zone 2		190	195	200	205	205	—	—	—
	Zone 3		195	200	205	210	210	—	—	—
	Adapter		200	205	210	215	215	—	—	—
	Die		195	200	205	210	210	—	—	—

SONGSTOMER™

P4000 (Polyester based)

P6000 (Polyester based)

Characteristics	Transparency	Elastic recovery
Processing	Injection molding, Extrusion	Injection molding, Extrusion
Main Applications	Shoes components, Pneumatic hoses, Mobile phone cases	Straps for inner wear

Properties	Test Method	Units	P-4192A	P-4198A	P-6170A	P-6175A	P-6180A	P-6185A
Hardness	ASTM D2240	Shore A	93 ± 2	97 ± 2	72 ± 2	75 ± 2	82 ± 2	86 ± 2
		Shore D	—	—	—	—	—	—
Specific Gravity	ASTM D792	g/cm³	1.22	1.23	1.20	1.20	1.21	1.22
Tensile Strength	ASTM D412	kgf/cm²	420	400	250	300	350	400
Tensile Stress at 100% Modulus	ASTM D412	kgf/cm²	100	150	30	35	40	60
Tensile Stress at 300% Modulus	ASTM D412	kgf/cm²	200	230	45	50	60	90
Ultimate Elongation	ASTM D412	%	420	400	650	600	550	500
Tear Strength	ASTM D624	kgf/cm	120	160	65	70	80	95
Taber Abrasion (H18 Wheel, 1000 g Load)	ASTM D4060	mg/1,000 cycle	50	70	15	20	25	30
Mold Shrinkage	ASTM D955	m/m	0.0045	0.0045	0.0085	0.0080	0.0060	0.0055
Vicat Softening Temperature	ASTM D1525	°C	99	118	65	74	80	97
Injection Molding Conditions	Feed Barrel	°C	195	200	170	175	180	185
	Transition		200	205	175	180	185	190
	Metering		205	210	180	185	190	195
	Nozzle		205	210	180	185	190	195
	Mold		20 ~ 40	20 ~ 40	20 ~ 40	20 ~ 40	20 ~ 40	20 ~ 40
Extrusion Conditions	Zone 1	°C	195	200	170	175	180	185
	Zone 2		200	205	175	180	185	190
	Zone 3		205	210	180	185	190	195
	Adapter		210	215	185	190	195	200
	Die		205	210	180	185	190	195



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P7000 (Polyester based)

Characteristics			Transparency, Suitable for T-die extrusion						
Processing			Injection molding, Extrusion						
Main Applications			Sheets, Films						
Properties	Test Method	Units	P-7185A	P-7185A-2	P-7187A	P-7190A	P-7195A	P-7197A	P-7180D
Hardness	ASTM D2240	Shore A	87 ± 2	87 ± 2	85 ± 2	92 ± 2	96 ± 2	96 ± 2	—
		Shore D	—	—	—	—	—	—	77 ± 3
Specific Gravity	ASTM D792	g/cm³	1.20	1.20	1.20	1.21	1.23	1.23	1.24
Tensile Strength	ASTM D412	kgf/cm²	420	420	300	450	450	400	380
Tensile Stress at 100% Modulus	ASTM D412	kgf/cm²	70	70	55	80	130	140	280
Tensile Stress at 300% Modulus	ASTM D412	kgf/cm²	130	130	80	150	230	220	—
Ultimate Elongation	ASTM D412	%	400	400	600	450	400	400	300
Tear Strength	ASTM D624	kgf/cm	100	100	80	100	130	140	240
Taber Abrasion (H18 Wheel, 1000 g Load)	ASTM D4060	mg/1,000 cycle	40	40	40	45	55	55	110
Mold Shrinkage	ASTM D955	m/m	0.0050	0.0050	0.0050	0.0045	0.0045	0.0045	0.0040
Vicat Softening Temperature	ASTM D1525	°C	94	94	89	98	113	111	130
Injection Molding Conditions	Feed Barrel	°C	190	190	185	195	200	200	215
	Transition		195	195	190	200	205	205	220
	Metering		200	200	195	205	210	210	225
	Nozzle		200	200	195	205	210	210	225
	Mold		20 ~ 40	20 ~ 40	20 ~ 40	20 ~ 40	20 ~ 40	20 ~ 40	20 ~ 40
Extrusion Conditions	Zone 1	°C	190	190	185	195	200	200	215
	Zone 2		195	195	190	200	205	205	220
	Zone 3		200	200	195	205	210	210	225
	Adapter		205	205	200	210	215	215	230
	Die		200	200	195	205	210	210	225

SONGSTOMER™

Characteristics
Processing
Main Applications

P8000 (Polyester based)

Easy Gelling	Suitable for inflation film extrusion
Calendering	Extrusion
Tarpaulin	Films

Properties	Test Method	Units	P-8185AC	P-8185AI	P-8190AI	P-8195AI
Hardness	ASTM D2240	Shore A	87 ± 2	88 ± 2	90 ± 2	95 ± 2
		Shore D	—	—	—	—
Specific Gravity	ASTM D792	g/cm³	1.20	1.21	1.22	1.22
Tensile Strength	ASTM D412	kgf/cm²	400	450	480	480
Tensile Stress at 100% Modulus	ASTM D412	kgf/cm²	60	65	75	100
Tensile Stress at 300% Modulus	ASTM D412	kgf/cm²	90	120	150	170
Ultimate Elongation	ASTM D412	%	450	400	400	400
Tear Strength	ASTM D624	kgf/cm	90	100	120	130
Taber Abrasion (H18 Wheel, 1000 g Load)	ASTM D4060	mg/1,000 cycle	35	30	30	40
Mold Shrinkage	ASTM D955	m/m	0.0050	0.0055	0.0055	0.0050
Vicat Softening Temperature	ASTM D1525	°C	71	95	97	110
Injection Molding Conditions	Feed Barrel	°C	—	—	—	—
	Transition		—	—	—	—
	Metering		—	—	—	—
	Nozzle		—	—	—	—
	Mold		—	—	—	—
Extrusion Conditions	Zone 1	°C	185	185	185	190
	Zone 2		190	190	190	195
	Zone 3		195	195	195	200
	Adapter		200	200	200	205
	Die		195	195	195	200

SONGSTOMER™

Characteristics
Processing
Main Applications

HM (Polyester based)

Hotmelt adhesives
Extrusion
Seam tapes, Emblem

Properties	Test Method	Units	HM-1000	HM-4000	HM-6000
Hardness	ASTM D2240	Shore A	76 ± 2	83 ± 2	94 ± 2
		Shore D	—	—	—
Specific Gravity	ASTM D792	g/cm³	1.19	1.16	1.19
Tensile Strength	ASTM D412	kgf/cm²	250	250	200
Tensile Stress at 100% Modulus	ASTM D412	kgf/cm²	30	45	40
Tensile Stress at 300% Modulus	ASTM D412	kgf/cm²	45	70	60
Ultimate Elongation	ASTM D412	%	700	600	700
Tear Strength	ASTM D624	kgf/cm	70	80	80
Appearance	—	—	Transparent	Transparent	Opaque
Tg by DSC	ASTM E1356	°C	-23°C	-19°C	-40°C
Kofler Melting Temperature	—	°C	110°C	115°C	80°C
Extrusion Conditions	Zone 1	°C	165	175	155
	Zone 2		175	185	165
	Zone 3		180	190	170
	Adapter		180	190	170
	Die		175	185	165

Standard Packaging

- **PUs – Dry and Wet Process:**
 - 100 kg Steel Drum
 - 110 kg Steel Drum
- **PUs – Adhesives :**
 - 80 kg Steel Drum
 - 100 kg Steel Drum
 - 110 kg Steel Drum
 - 190 kg Steel Drum
 - 200 kg Steel Drum
- **PUs – Adhesive for Flexible Packaging:**
 - 10 kg Can
 - 15 kg Can
 - 18 kg Can
 - 19 kg Can
 - 200 kg Steel Drum
- **PUs – Ink Binders:**
 - 170 kg Steel Drum
 - 180 kg Steel Drum
 - 200 kg Steel Drum
- **PUs – Adhesive Hardeners and Curing Accelerators:**
 - 10 kg Can
 - 15 kg Can
 - 18 kg Can
 - 20 kg Can
 - 170 kg Steel Drum
 - 180 kg Steel Drum
- **PUs – Beads:**
 - 10 kg Paper Box
- **TPUs:**
 - 25 kg Paper Bag (with inner PE Bag)
 - 25 kg PE Bag
 - 25 kg AL Bag

Key to Abbreviations of Physical Forms

- | | | | |
|------------------------|-------------------------------|---------------------------------|-----------------------------|
| • PW: Powder | • DW: Dispersion | • BD: Beads | • GR: Granule |
| • SB: Semi Bead | • MB: Micro Beads | • DF: Dust Free Flow | • FG: Fine Grind |
| • SL: Solid | • FC: Fusion Crystal | • CP: Crystalline Powder | • VL: Viscous Liquid |
| • FF: Free Flow | • LQ: Liquid or Molten | • PS: Pastilles | |



Transport and Storage

As a general guideline, we recommend storing the products mentioned in this brochure in their original sealed containers in a cold and dry place. For more detailed information on a specific product, please refer to the corresponding **Technical Data Sheet**.

By law, a number of chemical products must be labeled in respect of transport, storage and handling. Thus corresponding care is a prerequisite for their appropriate handling. Furthermore, local legal regulations may apply.

Detailed information is given in the respective **Safety Data Sheets**.

About SONGWON Industrial Group

A leader in the development, production and supply of specialty chemicals, SONGWON's products touch your life every day, everywhere. Since 1965, we've been driving innovation, partnering for progress and paving the way for a better more sustainable tomorrow with 360° customized solutions.

Headquartered in South Korea, SONGWON is the 2nd largest manufacturer of polymer stabilizers worldwide. With Group companies and world-class manufacturing facilities across the globe, we are dedicated to providing customers in over 60 countries with high-performance products that meet their individual needs and the best levels of service.

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