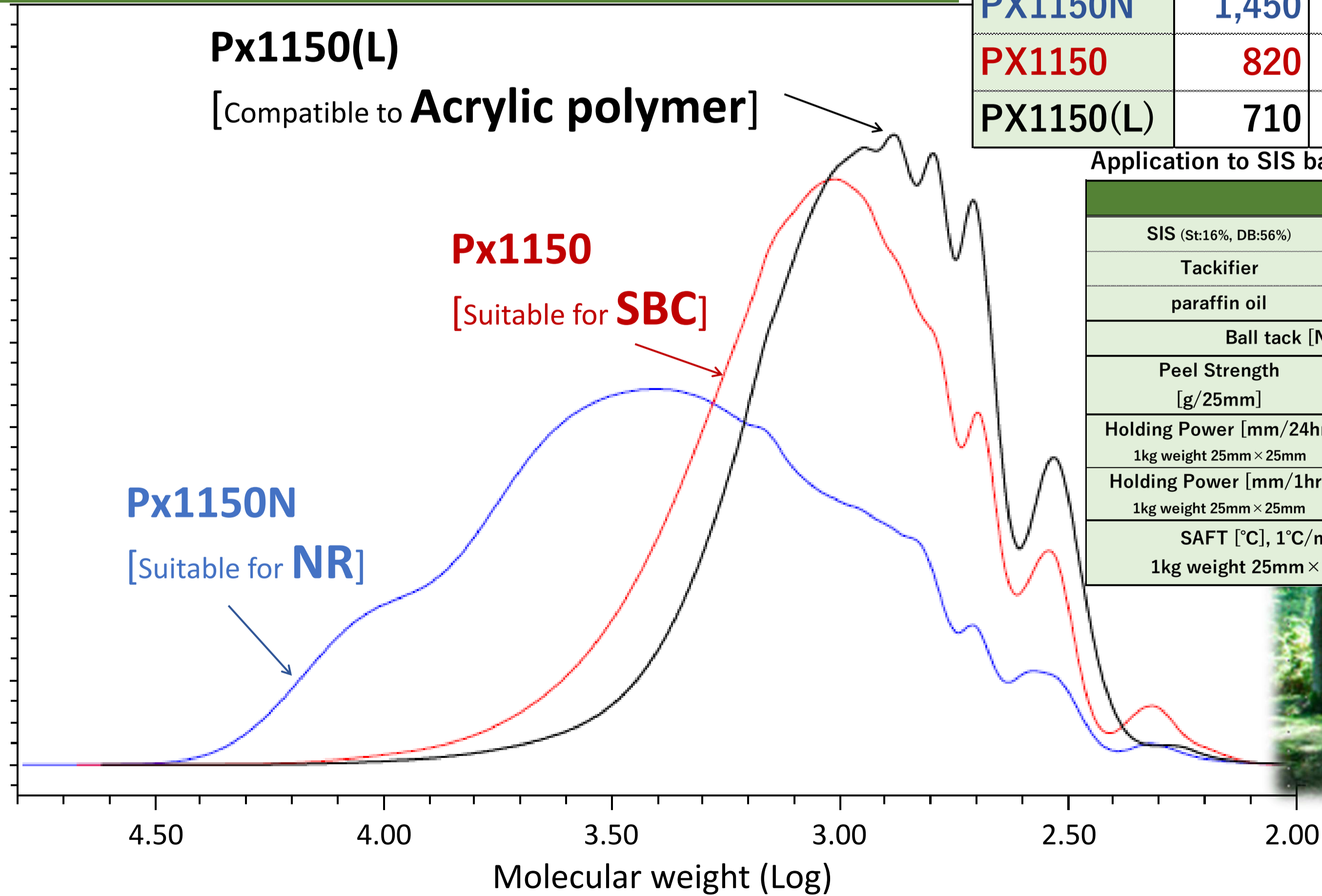


YS Resin PX and PX-N

- High bio rate(greater than 90%)
- Availability of MW controlled version(chance to be effectively used in Acrylics)
- Good compatibility to various base materials

GPC chart comparison of Yasuhara Chemical's straight terpene resins



	Mn	Mw	Mz	Mp	Mw/Mn (PDI)
PX1150N	1,450	3,660	7,560	3,765	2.52
PX1150	820	1,380	2,540	1,130	1.68
PX1150(L)	710	1,050	1,770	760	1.48

Application to SIS base PSA

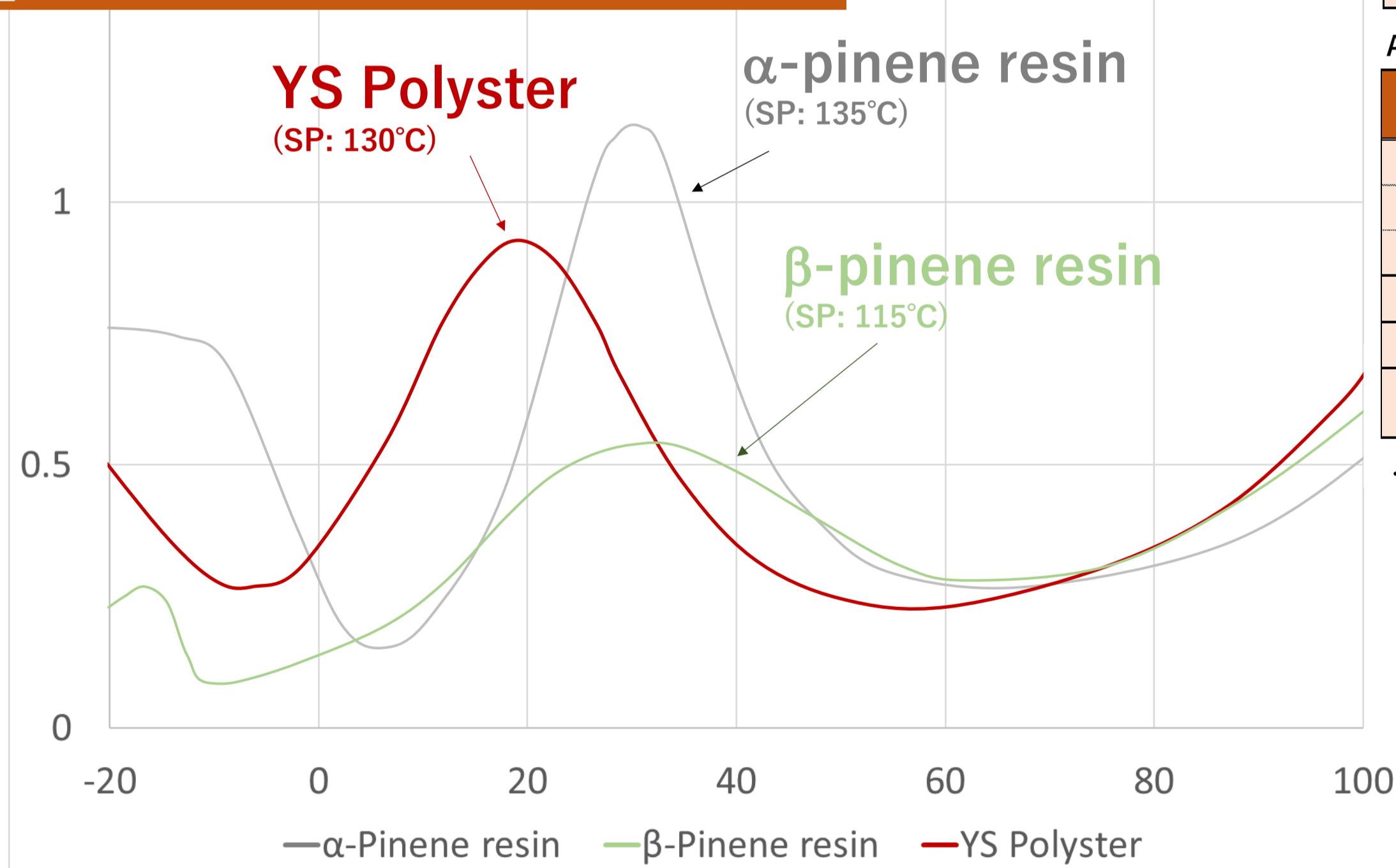
			PX1150N	PX1150	PX1150(L)
SIS (St:16%, DB:56%)	parts		100	100	100
Tackifier	parts		100	100	100
paraffin oil	parts		30	30	30
Ball tack [No.], 23°C			3	6	7
Peel Strength [g/25mm]	23°C	SUS	2,110	1,480	1,440
Holding Power [mm/24hr]	50°C	SUS	1.9	0.6	0.8
1kg weight 25mm×25mm					
Holding Power [mm/1hr]	70°C	SUS	2.2	0.6	0.9
1kg weight 25mm×25mm					
SAFT [°C], 1°C/min		SUS	92	91	92
1kg weight 25mm×25mm					



YS Polyster U, T, S, G, K, TH and UH

- High bio rate (up to 70%)
- Variety of phenol modification providing compatibility in wide range of materials (SBC to acrylate)
- High-low softening point (up to 160deg. C)
- T series proven offset for alpha pinene resin
- Thermally stable hydrogenated versions (TH and UH)

DMA chart of SBS-Tackifier compound



<Sample> SBS (st: 30%)/TF = 1/1, (Thickness: 2 mm), <DMA analysis> [Instrument] Rheosol-G5000(UBM)/Parallel mode, [Measuring condition] Temp.: -100~100°C, 3°C/min, Frequency: 1Hz.

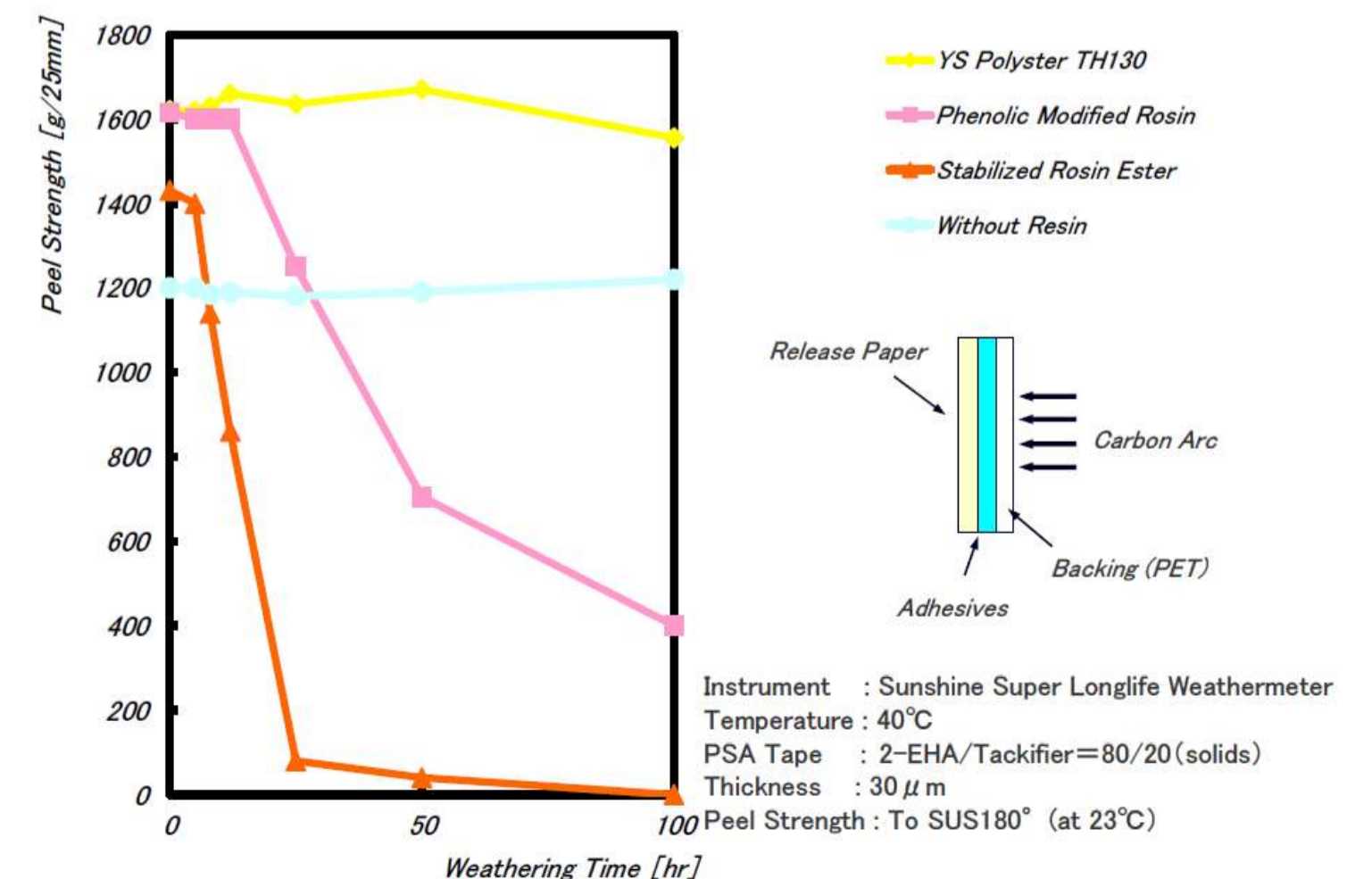
Application to SIS base PSA (comparison with α -pinene resins)

		T130	α -pinene resin (SP 115°C)	α -pinene resin (SP 125°C)
SIS (St:16%, DB:56%)	parts	100	100	100
Tackifier	parts	100	100	100
paraffin oil	parts	30	30	30
Ball tack [No.], 23°C		4	6	6
Peel Strength [g/25mm]	23°C SUS	1,755	1,540	1,685
Holding Power [mm/24hr] 1kg weight 25mm × 25mm	50°C SUS	1.8	2.7	2.1

Application to SBS base PSA (comparison with α -pinene resins)

		T130	α -pinene resin (SP 115°C)	α -pinene resin (SP 125°C)
SBS (St:30%, DB:0%)	parts	100	100	100
Tackifier	parts	100	100	100
paraffin oil	parts	30	30	30
Ball tack [No.], 23°C		4	4	4
Peel Strength [g/25mm]	23°C SUS	1,173	1,490	1,550
Holding Power [mm/24hr] 1kg weight 25mm × 25mm	50°C SUS	0.3	1.0	0.1

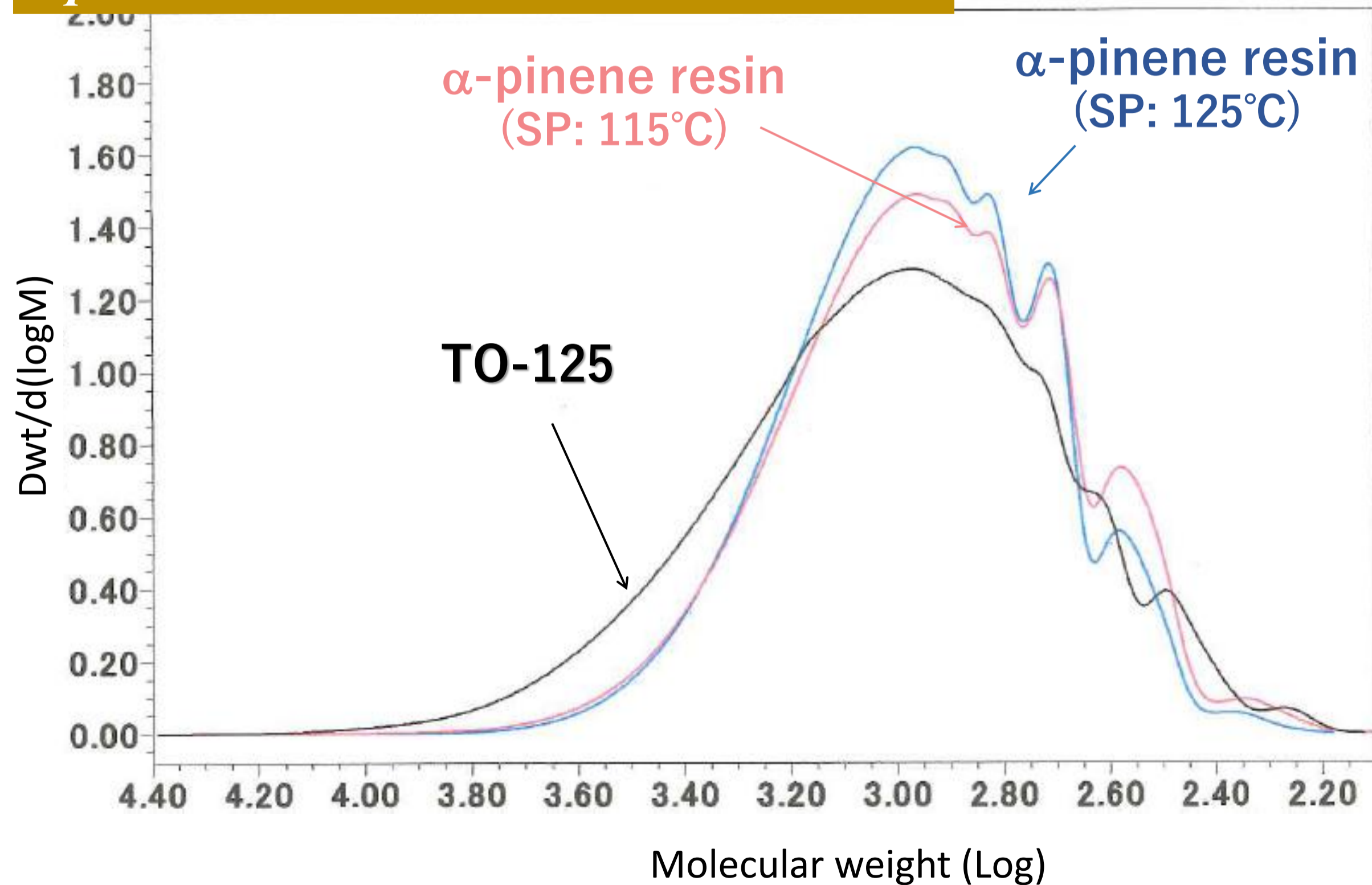
Thermal stability of TH



YS Resin TO

- High bio rate (approx. 70%)
- Proven offset for alpha pinene resin
- Good compatibility to SBCs and Acrylics (thanks to narrow PDI)
- Provide well balanced tack/adhesion/cohesion (chance to replace alpha pinene resin)

GPC chart of YS resin TO and α -pinene resins



- Low dimer content
- Sufficient molecular distribution



Possible to increase shear strength without decreasing low-temperature adhesion of SBC adhesives

Application to SIS base PSA (comparison with α -pinene resins)

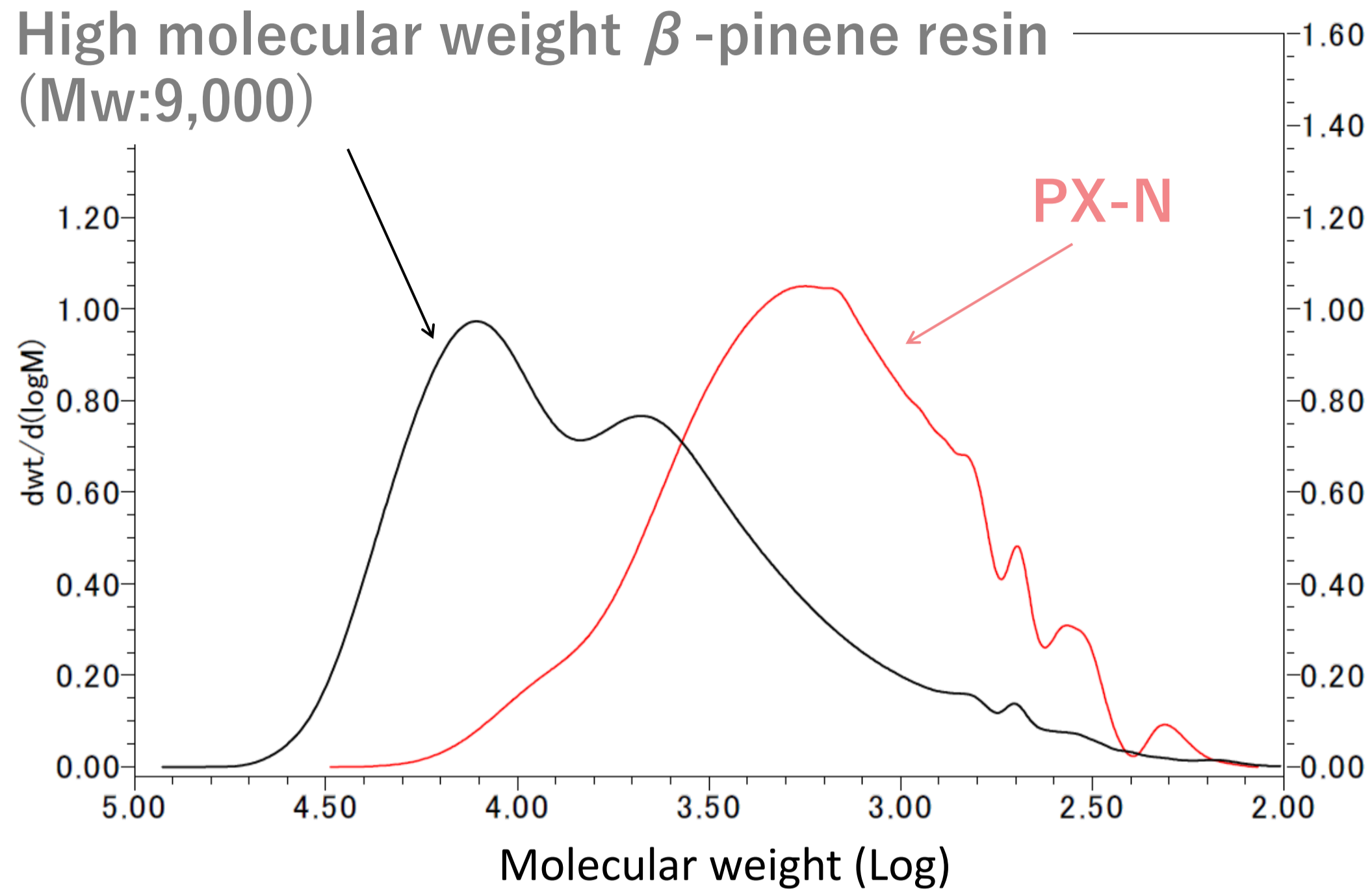
		TO125	α -pinene resin (SP 115°C)	α -pinene resin (SP 125°C)
SIS (St:16%, DB:56%)	parts	100	100	100
Tackifier	parts	100	100	100
paraffin oil	parts	30	30	30
Ball tack [No.], 23°C		5	6	6
Peel Strength [g/25mm]	23°C SUS	1,335	1,540	1,685
Holding Power [mm/24hr] 1kg weight 25mm × 25mm	50°C SUS	1.0	2.7	2.1

Application to SBS base PSA (comparison with α -pinene resins)

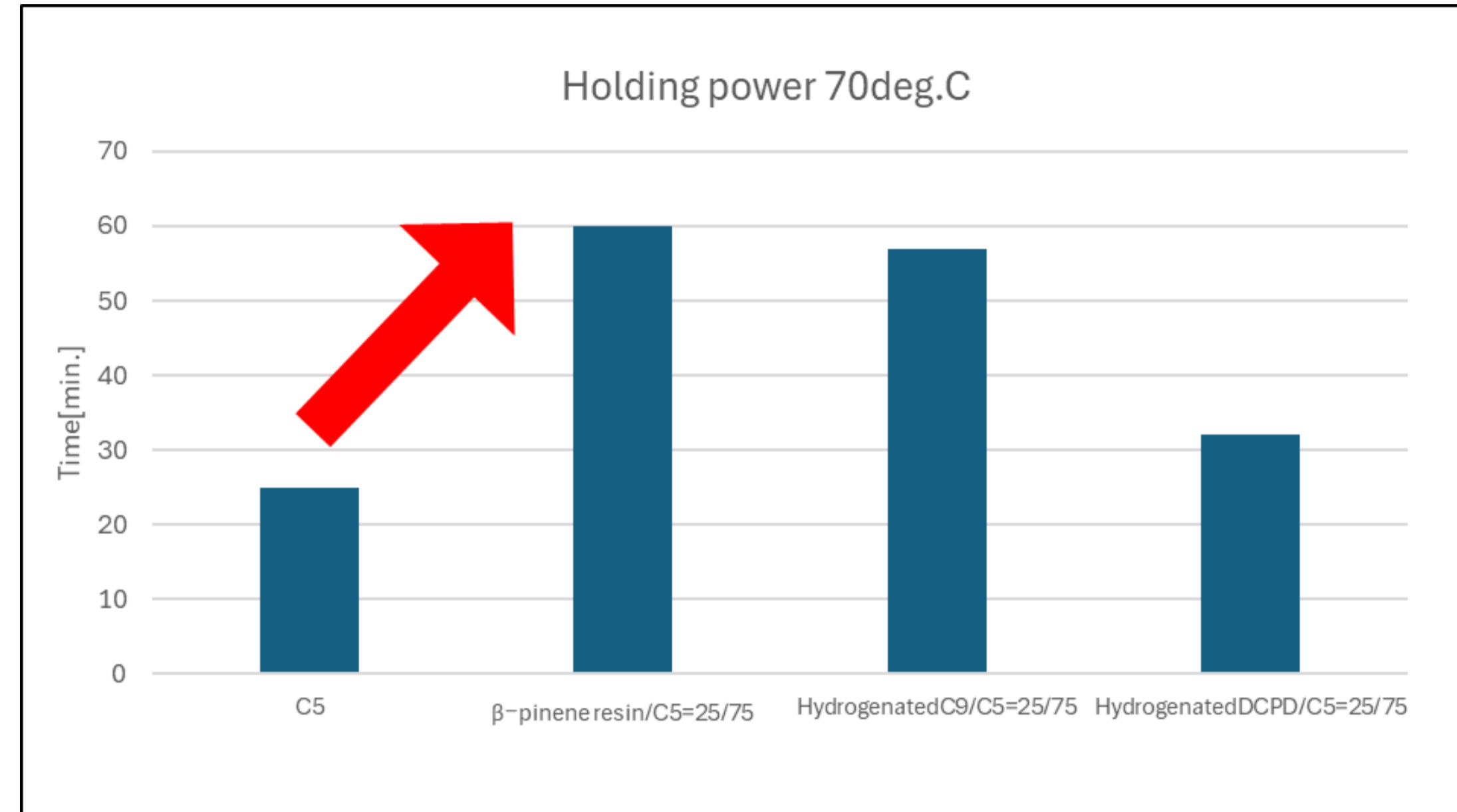
		TO125	α -pinene resin (SP 115°C)	α -pinene resin (SP 125°C)
SBS (St:30%, DB:0%)	parts	100	100	100
Tackifier	parts	100	100	100
paraffin oil	parts	30	30	30
Ball tack [No.], 23°C		4	4	4
Peel Strength [g/25mm]	23°C SUS	1,265	1,490	1,550
Holding Power [mm/24hr] 1kg weight 25mm × 25mm	50°C SUS	0.0	1.0	0.1

Polymer-like high molecular weight β -pinene resin

GPC chart high molecular weight β -pinene resin

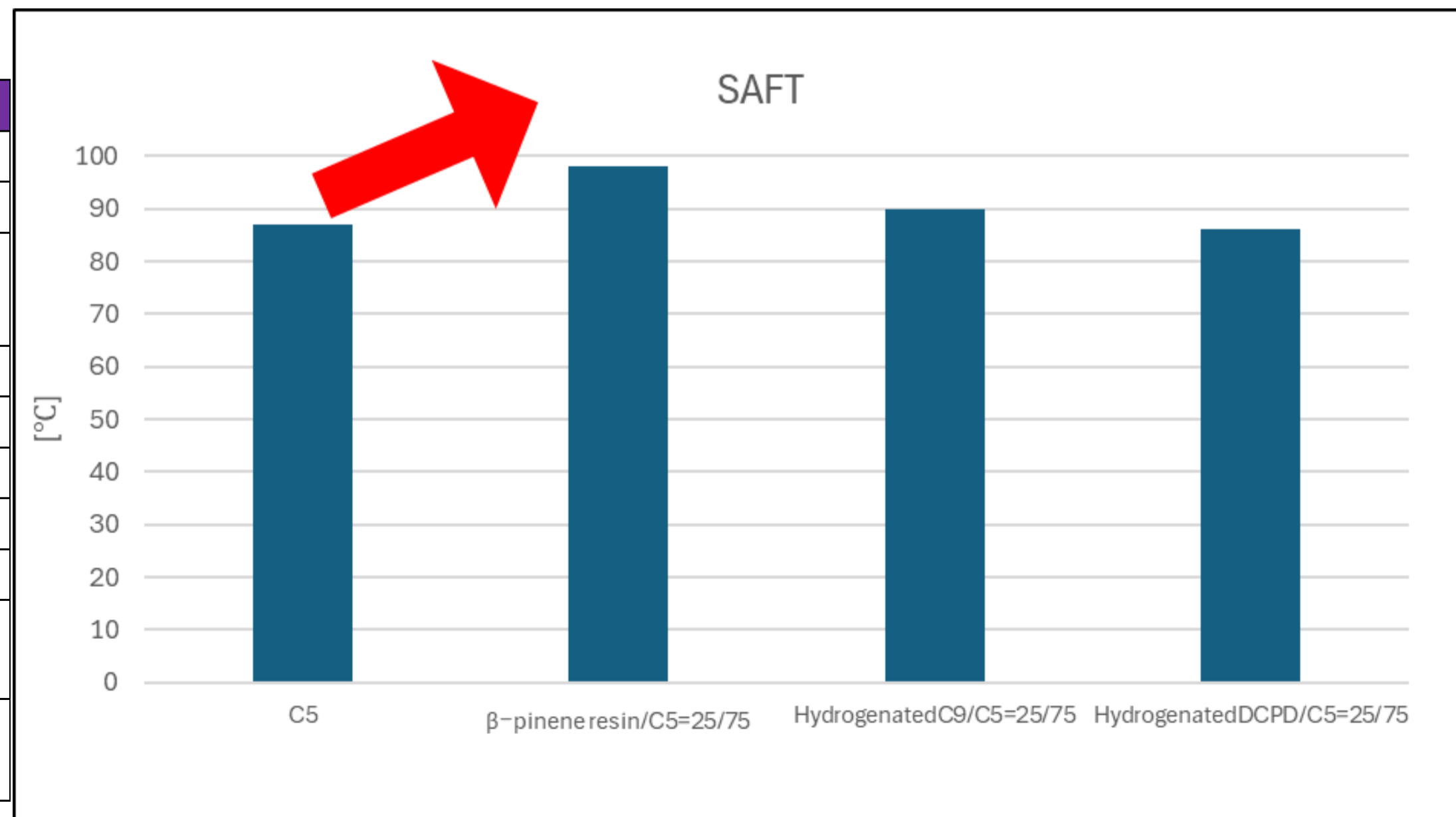


As **temperature resistance enhancer**



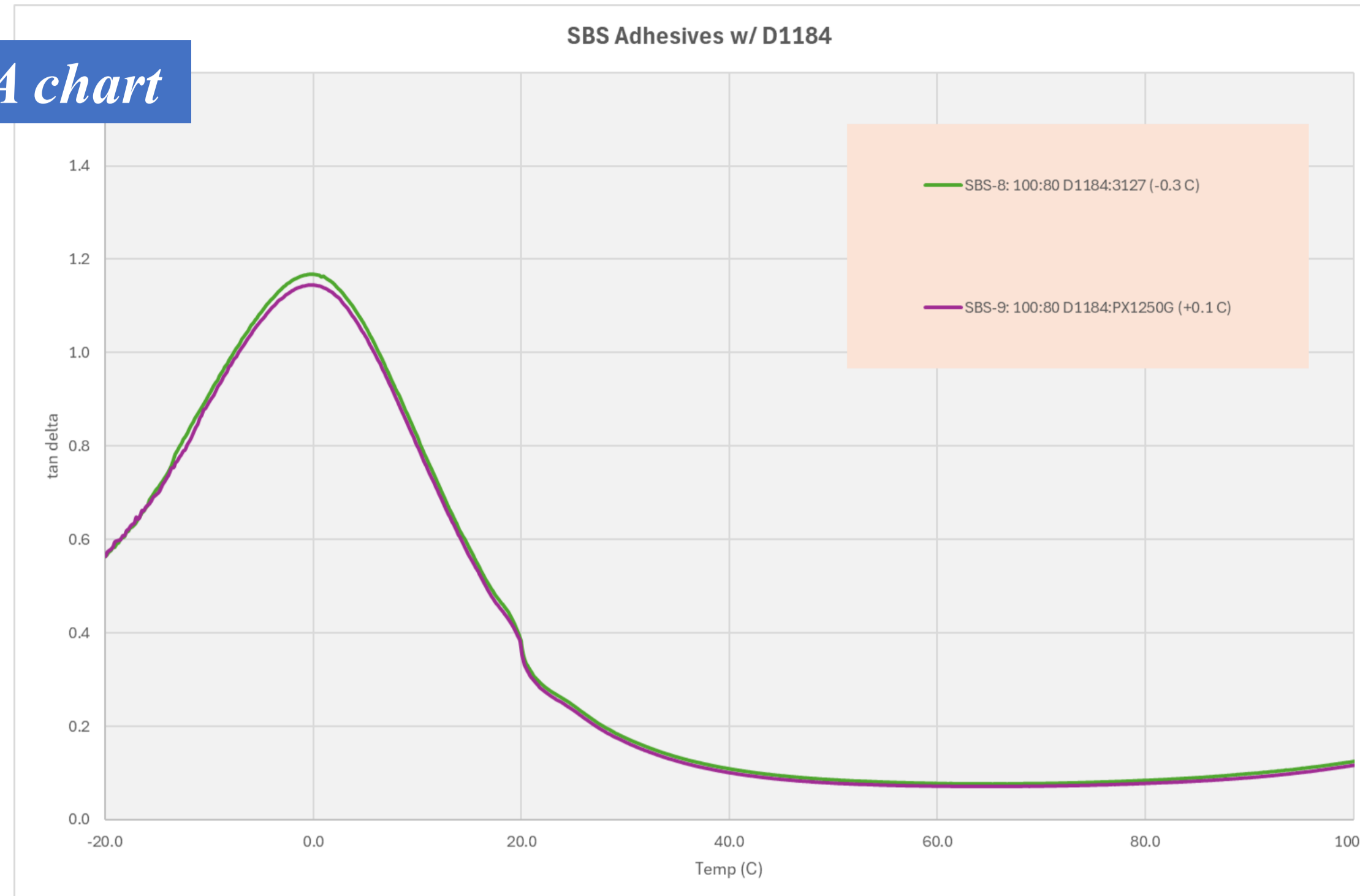
Application to SIS base PSA

		1	2	3	4	
SIS(St 14%,DB 26%)	parts	100	100	100	100	
Tackfier(C5)	parts	100	75	75	75	
Tackfier	type	-	High molecular β -pinene resin	Hydrogenated C9 resin	Hydrogenated DCPD resin	
	parts	0	25	25	25	
paraffin oil	parts	30	30	30	30	
Ball tack [No.] 23°C		13	4	7	13	
Peel Strength [g/25mm]	23°C	SUS	12.4	10.0	14.4	12.7
		PE	6.4	7.8	8.3	7.2
Holding Power[mm/1hr] 1kg weight 25mm×25mm	70°C	SUS	25min ↓	0.7mm	57min ↓	32min ↓
		SAFT[°C],1°C/min. 1kg weight 25mm×25mm	SUS	87	98	90



Sylvares3127 vs YS resin PX1250G (prototype)

SBS compound DMA chart



Dercolyte A115 vs YS resin PX1150G (commercialized)

Application to SIS base PSA

			YS resin PX1150G	DercolyteA115
SIS(St 16%,DB 56%)	parts		100	100
Tackfier	parts		100	100
paraffin oil	parts		30	30
Ball tack [No.] 23°C			7	6
Peel Strength [g/25mm]	23°C	SUS	14.1	15.1
Holding Power [mm/1hr] 1kg weight 25mm×25mm	70°C	SUS	0.9	4.7
SAFT [°C], 1°C/min. 1kg weight 25mm×25mm		SUS	92	86