



Renewable resources.
Endless possibilities.™

Tackifiers for adhesives





OUR INNOVATIVE REFINING TECHNOLOGY

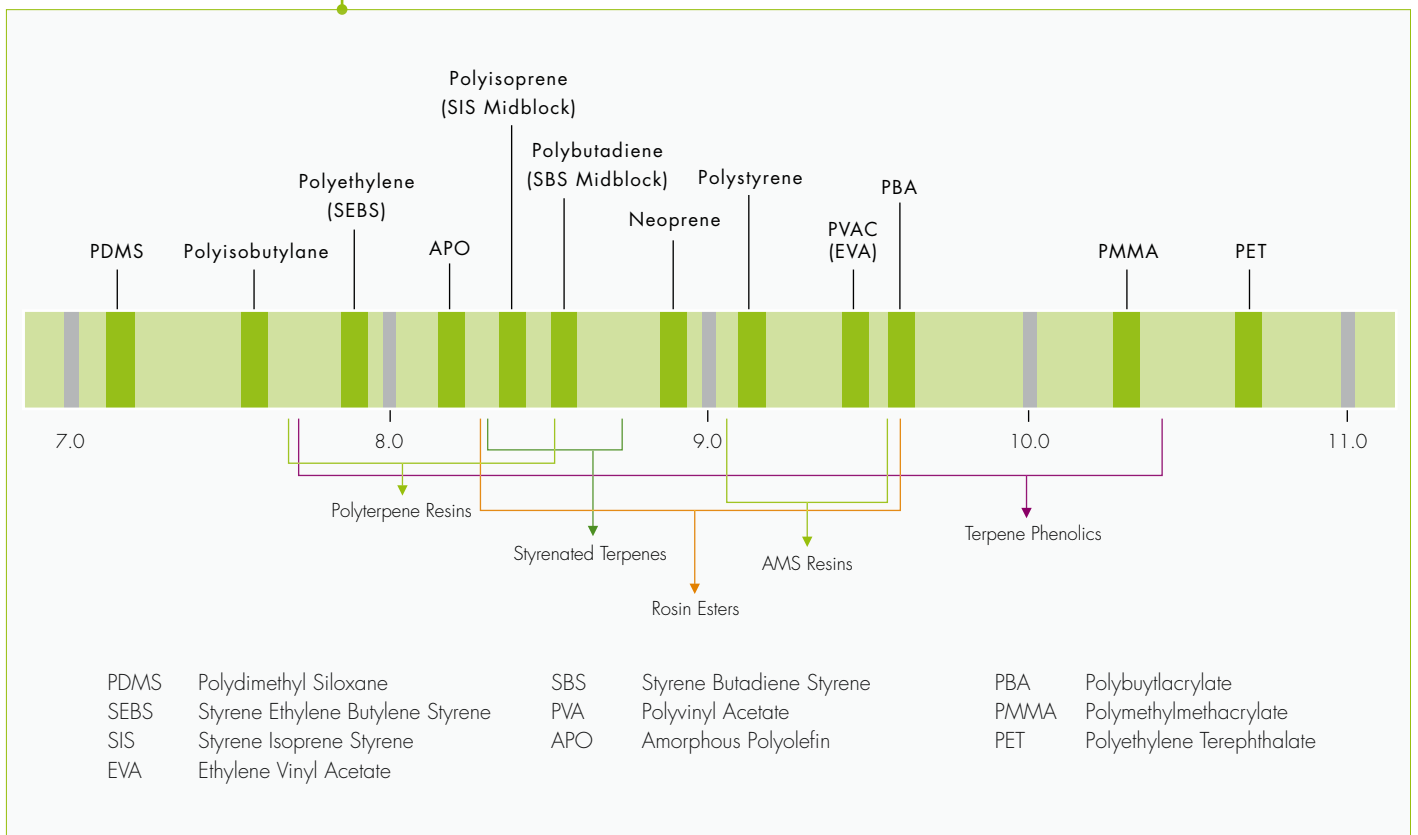
With our world class manufacturing practices and the largest distillation facilities, we are able to generate the highest value from Crude Tall Oil. With increased energy efficiency and low levels of emission and waste, we have been granted various environmental certificates.

Solubility parameters of common polymers and Arizona Chemical tackifiers



Since tackifiers function as polymer modifiers, compatibility with these materials is a key performance property. Compatibility among two or more materials is governed by their molecular weights, molecular weight distributions and solubility parameters (compositions). Low molecular weights, narrow molecular-weight distributions (polydispersities) and close solubility parameters result in good tackifier-polymer compatibility. The tackifier molecular weight data listed in the typical properties chart in conjunction with the solubility parameters information shown below provide guidance in selecting the proper tackifier for the desired polymer system.

Our **green** tradition drives your **green future**



Tackifiers for adhesives

Typical Properties

		SP (°C)	Tg (°C)	Color Gardner Neat 1:1 in Toluene	Acid No.	Approx Hydroxyl No.*	Mn	Poly Disp.	Melt Viscosity (cps, mPas)				FDA, REF	
									125 °C	150 °C	177 °C	190 °C		
Rosin Esters	SYLVALITE® RE 88	88	40	<2	5	50	798	1.1	2800	350	80	-	A,C	
	SYLVALITE® RE 100	100	50	2	5	50	974	1.1	11800	960	150	80	A,B,C	
	SYLVALITE® RE 104	104	53	2	6	25	1099	1.3	31250	1970	280	140	A,C	
	SYLVALITE® RE 105XL	105	55	<1	6	10	944	1.1	31500	2000	350	180	A,B,C	
	SYLVALITE® RE 115	115	65	2	6	10	1176	1.4	80200	5660	605	286	A,C	
	SYLVALITE® RE 118	115	65	2	8	10	1283	2.0	-	8670	1030	416	A,C	
	SYLVATAC® RE 5	liquid	-25	4	12	-	490	1.2	-	-	-	-	-	A
	SYLVATAC® RE 12	liquid	-20	2	12	25	680	1.1	30	-	-	-	-	A
	SYLVATAC® RE 85	82	35	3	6	20	810	1.1	2600	400	70	-	-	A,C
	SYLVATAC® RE 95	96	45	4	15	15	923	1.3	9600	700	90	70	-	A,B,C
	SYLVATAC® RE 103	102	53	4	10	20	1020	1.1	10400	890	180	100	-	A,B,C
	SYLVAMELT® RE 401	-	-20	4	67	20	410	1.7	40	-	17	-	-	A,C
Styrenated Terpenes	ZONATAC® NG 98	98	57	2	-	-	720	1.6	23250	1160	175	83	-	A
Polyterpenes	SYLVARES® XR 5168	25	-20	4	-	-	330	1.4	20	10	-	-	-	A,B,C
	SYLVARES® TR 90	90	40	4	-	n/a	580	2.1	8000	1830	90	45	-	A,B,C,K
	SYLVARES® TR 105	105	55	4	-	n/a	620	2.0	87500	10650	280	120	-	A,B,C,K
	SYLVARES® TR B115	115	70	4	-	-	1150	2.5	-	11100	1140	485	-	A,B,C
	SYLVARES® TR 7115	115	70	3+	-	-	650	1.6	126750	5140	455	200	-	A,B,C
Terpene Phenolics	SYLVARES® TP 95	95	50	4	-	40	525	1.5	20000	980	180	-	-	A,B
	SYLVARES® TP 105	105	55	4	-	40	540	1.5	80000	2450	250	-	-	A,B
	SYLVARES® TP 115	115	55	4	-	50	530	1.3	-	3800	315	-	-	A,B
	SYLVARES® TP 2040HME	125	80	4+	-	135-150	600	1.3	-	7815	400	145	-	A,B
	SYLVARES® TP 7042E	145	100	5	-	95-105	680	1.35	-	-	4663	1115	-	A,B
Pure Monomer Resins (AMS)	SYLVARES® SA 85	85	43	<1	-	-	700	1.5	2800	650	90	40	-	A,C
	SYLVARES® SA 100	100	49	<1	-	-	880	1.6	9000	1125	225	160	-	A,C
	SYLVARES® SA 120	120	66	<1	-	-	1120	2.1	-	17300	1800	775	-	A,C
	SYLVARES® SA 140	140	79	<1	-	-	1990	2.1	-	64500	4650	1740	-	A,C
AMS - Phenolic Resins	SYLVARES® 520	75	37	1	-	40	760	1.2	500	210	105	80	-	A
	SYLVARES® 540	75	38	1	-	40	650	1.3	500	210	105	80	-	A
	SYLVARES® 525	95	53	<1	-	4	1010	1.7	5800	1600	450	270	-	A
	SYLVARES® 600	95	52	<1	-	22	910	1.3	5300	1000	220	120	-	A

FDA REFERENCE CODES:

(When used in accordance with all appropriate and associated regulations)

A 175.105 Adhesives

B 175.125 Pressure Sensitive Adhesives

C 175.300 Resinous & Polymeric Coatings

K 172.615 Chewing Gum Base

According to Arizona Chemical's interpretation of the FDA regulations, the tabulated tackifiers meet the ingredient requirements of the cited sections of the 21 CFR for indirect food additives when used according to the regulations and any limitations that may apply. Full details on compliance with other FDA sections and EU Directives or Regulations is available upon request

Polymer Compatability										Applications Fields				
Block Copolymers			Ethylene Polymers				SBR	PUR	Acrylic	Packaging	Book binding	Non-Woven	PSA	Flooring & Construction
SIS	SBS	SEBS	PE	Low VA	High VA	EnBA								
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● - Compatible ○ - Incompatible ▶ - Partially Compatible
 *Calculated typical values



Our products are everywhere

AQUATAC[®] resin dispersions

These high solid dispersions are designed for use in water-based adhesives. This range of products provide adhesive formulating flexibility to achieve optimum performance properties for both pressure sensitive and non-pressure sensitive adhesive applications. They are compatible with a broad range of waterborne polymers, including natural rubber, C-SBR, SBR, polychloroprene and acrylic latices.

TYPICAL VALUES	Property Base resin		Properties dispersion		
	Softening point , Ring & Ball, °C		Solids content, %	Viscosity ¹ , mPa.s	pH
AQUATAC [®] XR 4316	80		59	900	8,5
AQUATAC [®] XR 4324	80		59	500	8,0
AQUATAC [®] XR 4343	80		59	700	8,5

¹ Brookfield RVT100, # 3 Spindle @ 50 RPM @ 21°C

Our raw materials are Crude Tall Oil and Crude Sulphate Turpentine. These are natural products of sustainable forestry and co-products of the pulp industry. When refined, they offer environmentally friendly raw materials for industrial as well as everyday life products such as lubricants, hydraulic fluids, fuel additives, adhesives, rubber, tires, paint, chewing gum, printing ink, fragrances, plastics, household cleaners, soap, and paper.

Products adhesives

ROSIN ESTERS

Rosin esters impart excellent specific adhesion to a wide range of substrates due to their polarity and polymer compatibility. Their low molecular weight and narrow molecular weight distribution, combined with their cycloaliphatic–aromatic structure, make rosin esters the most broadly compatible of all adhesive tackifiers. They are used in a wide range of polymers including high and low vinyl acetate EVA, acrylics, polyurethanes, SIS and SBS.

STYRENATED TERPENES

These light-colored, low odor resins are the right choice for premium hot melt adhesive applications. The aliphatic–aromatic nature of these resins gives them excellent adhesion to a range of substrates including polyolefins. Styrenated terpenes are highly compatible in EVA and SBC systems.

POLYTERPENES

Polyterpene resins are highly compatible with polyolefins and the mid-block of SIS block copolymers so they impart excellent tack and peel properties to pressure sensitive systems. The high softening point grades combine high heat resistance and superior adhesive performance. These resins meet the broadest range of FDA requirements, including direct food contact.

TERPENE PHENOLICS

Terpene phenols are widely regarded as having the highest polarity of all tackifiers. They provide outstanding specific adhesion in EVA and SBC systems. Their polarity and high softening points combine to provide excellent hot tack in bookbinding and packaging applications. These versatile resins can even be used in bookbinding adhesives that require resistance to ink oil. They will improve the adhesion of hot melt packaging and pressure sensitive adhesives to difficult-to-bond substrates like coated and recycled paper, glass and metal foils.

PURE MONOMER RESINS (AMS)

These aromatic tackifiers have very low odor along with superior color and oxidative stabilities. They are used to modify styrene end blocks of SBC's to improve their range of temperature performance. AMS resins improve strength and heat resistance in EVA and SBC packaging, bookbinding, nonwoven and assembly applications. They improve hot melt adhesive processing efficiency without degrading heat resistance or bond strength.

AMS – PHENOLIC RESINS

These resins offer the superior combination of color, low odor, color stability and adhesive performance. The high polarity of the phenolic modification significantly elevates adhesive performance of water white EVA systems for packaging, bookbinding and nonwovens. AMS – Phenolic resins are recommended for use in applications that require water white color, excellent adhesion and oxidative stability.

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Sustainable solutions globally

Arizona Chemical is headquartered in Jacksonville, USA with the European head office in Almere, the Netherlands. We have ten production sites in the US and Europe. Through our global network of more than 60 sales offices and distributors, we are able to serve our customers all over the world.

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