WE DON'T SELL PRODUCTS! WE SELL SOLUTIONS...

...That means when you present our team with a challenge, we never shy away. We have the resources of four production facilities and over a dozen business units at our disposal to tackle those problems that other companies won't.

COUNT ON US FOR:

- Continuous technical support for your developments, launches and new concepts
- Customer focus customization on products
- Active on bulk troubleshooting
- Sample room support with duplications, recommendations, laminations and conversions
- State of the art laboratories for all the testing protocols
- No MOQ for full widths and slit widths
- Effective lead time
- Global Customer Service coverage

Let us provide the best possible solutions to bring your concept into life, with guaranteed quality!

PROUDLY MADE IN THE U.S.A.

Worthen Industries manufactures specialty adhesives, coatings, flexible coated substrates and thermoplastic extrusion in four locations in the U.S.A.

We are a service-driven company that adds value through our research and development capabilities to provide custom solutions throughout the marketplace.

Worthen began in 1866 as the Union Paste Company (UPACO). We have since grown to offer several distinct product lines. We embrace sustainability and operate in a fully responsible manner according to our corporate values.

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Single and Multilayer Adhesive Films

Seam Tapes

Web Adhesives

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PRODUCT CHART

		Single Layer Adhesive - Apparel					Two Layer Seam Tape		Multi-Layer Adhesive				Web Adhesive	Single Layer Adhesives					
Product Number		**WEF 201**	**WEF 202**	**WEF 205**	**WEF 208**	**WEF XLT-4003**	**WPF 158**	**WPF 171**	**WEF 301**	**WEF 3003**	**WEF 3004**	**WEF 3026**	**WEF WA-001**	**WEF 210**	**WEF 212**	**WPF 2750**	**WPF 803**	**WPF 804**	**WEF 2609**
Certification		OEKO-TEX Standard 100, CPSIA, Reach	OEKO-TEX Standard 100, CPSIA, Reach	OEKO-TEX Standard 100, CPSIA, Reach	OEKO-TEX Standard 100, CPSIA, Reach	OEKO-TEX Standard 100, CPSIA, Reach	OEKO-TEX Standard 100, CPSIA, Reach	OEKO-TEX Standard 100, CPSIA, Reach	OEKO-TEX Standard 100, CPSIA, Reach	OEKO-TEX Standard 100, CPSIA, Reach	OEKO-TEX Standard 100, CPSIA, Reach	OEKO-TEX Standard 100, CPSIA, Reach	OEKO-TEX Standard 100, CPSIA, Reach						
Special Characteristics		Medium modulus, high recovery, high activation temp, soft hand feel, good durability	Low/medium modulus, high recovery, low activation temp, soft hand feel, good durability	Low modulus, high recovery, medium activation temp, very soft hand feel, good durability	Medium elasticity and recovery. Low/ medium modulus. Low activation temperatures	Extra soft hand. Ultra high stretch-recovery properties. Low modulus. Lightweight	High temperature resistant barrier, low activation temperature adhesive	High heat resistance, Excellent hydrolysis resistance, Resistance to microbial attack	Soft feel. Lower modulus. High recovery	Soft feel. Lower modulus. High recovery	Soft feel. Lower modulus. High recovery	Soft feel. Lower modulus. High recovery	Moderate heat activation temperature, Soft hand feel, Good stretch performance. Highly breathable	Low to medium melt viscosity, Good adhesion and low fusing temperatures to various polar substrates , Good wash and dry cleaning resistance	Low to medium melt viscosity, Good adhesion to various polar substrates, Fast re-crystallization rate	Flexible, high MW resin that bonds to various surfaces such as textiles, papers, metals, and other plastics	High green strength, Fast crystallization	Low activation temperature, High green strength, Fast crystallization	Soft and flexible, Versatile adhesion to polar and non-polar substrates
Base Chemistry		TPU	TPU	TPU	TPU	TPE	TPU	TPU	TPU	TPU	TPU	TPU	TPO	Co-PA	TPO	Copolyester	TPU	TPU	TPU
Color		Clear	Clear	Clear	Clear	Clear	Clear	Clear	Clear	Clear	Clear	Clear	White	Clear	Clear-translucent white	Clear	Clear	Clear	Clear to low haze
Properties	**Specific Gravity (g/cc)**	1.19	1.16	1.14	1.15	0.880	1.22	1.15	1.13	1.13	1.11	1.13	n/a	1.06	0.94	1.20-1.30	1.16	1.15	.940-.970
	Shore Hardness (A)	78	70	53	70	35	52	92	73	73	75	75	n/a			85	95	92	82
	Ultimate Elongation (%)	570%	750%	710%	685%	730%	660%	660%	750%	750%	750%	750%	399%		500%	380%	640%	660%	600-800%
	Tensile Strength (psi)	5200	2900	1980	6230	938	5270	4135	3141	3141	3258	3137	n/a		1885.5	3070	3670	5200	3800
	Tear Strength (lb/in)	350	286	190		133		530	320	320	338	338					510	630	
	TMA Melt Range (°C)	71-93	118-128	110-143			71-93	71-90	118-128	118-128	118-128	118-128	140-160			284	88-117	71-93	
	DSC Midpoint Tg (°C)		30	-44			-35	-38	-30	-30	-30	-30					-38	-38	
	Melt Flow Index (g/10 min)*	30	45	35	7.0	18							30	28	6.0		30	30	6.0-9.5
	Wash Resistance	up to 55°C	up to 55°C	Up to 55 °C	up to 55°C	up to 55°C	up to 55°C	up to 55°C	up to 55°C	up to 55°C	up to 55°C	up to 55°C	up to 55°C	Up to 60 °C			Up to 40 °C		
Flat Press Processing/Bonding	**Temp (°C)****	160	120	165	115	180			140-160	140-160	140-160	140-160	140-160			162-190		85-125	145-155
	Press force (psi)	60	60	60	60	60			40-60	30-70	30-70	30-70	60			40-60		40-60	
	Time (s)	20-25	20-25	20-25	20	20			20-30	20-25	20-25	20-25	20-30			10-30		10-30	15-25
Continuous Machine Processing/Bonding	**Temp (°C)****		130-140	160-170	140-150		230	230		140-150	140-150	140-150							
	Press force (psi)		15-22	22-30	15-22		4	4		15-20	15-20	15-20							
	Feet Per Minute (fpm)		6.5-8	5-6.5	6.5-8		10	10		6.5-8.2	6.5-8.2	6.5-8.2							
Fabric Materal	**Acetate**		Good	Good					Excellent	Excellent	Excellent	Excellent		Excellent		Excellent			Good
	Acrylic	Good	Good	Good	Good				Excellent	Excellent	Excellent	Excellent		Excellent		Good	Good	Good	Good
	Cotton	Excellent	Excellent	Excellent	Excellent				Excellent	Excellent	Excellent	Excellent		Excellent	Good	Excellent	Good	Good	Excellent
	Nylon/Lycra®	Good	Excellent	Excellent	Good	Good			Excellent	Excellent	Excellent	Excellent		Excellent				Excellent	
	Polyester/Cotton	Excellent	Excellent	Excellent	Excellent	Good			Excellent	Excellent	Excellent	Excellent		Excellent	Good		Good		Good
	Nylon	Good	Good	Good	Good	Good			Excellent	Excellent	Excellent	Excellent		Excellent		Excellent	Excellent		Good
	Polyester	Excellent	Excellent	Excellent	Excellent	Good			Excellent	Excellent	Excellent	Excellent		Excellent		Excellent	Excellent	Excellent	Good
	Wool	Good	Excellent	Excellent	Good				Excellent	Excellent	Excellent	Excellent		Excellent		Good	Good	Good	
Foams	**Polyurethane**	Excellent	Excellent	Excellent	Excellent		Good	Good	Good	Good	Good	Good		Good		Good	Excellent	Excellent	
	PVC-Flexible	Excellent	Excellent	Excellent	Excellent		Good	Good								Excellent	Excellent	Excellent	
	PVC-Rigid	Good	Good	Good	Good		Good	Good								Excellent	Excellent	Excellent	
Plastics (film or sheet)	**ABS**	Excellent	Excellent	Excellent	Excellent				Good	Good	Good	Good		Good		Good		Excellent	
	Polycarbonate	Good	Excellent	Excellent	Good				Good	Good	Good	Good		Good			Good	Excellent	
	Polyurethane	Excellent	Excellent	Excellent	Excellent		Good	Good	Good	Good	Good	Good		Good		Good	Excellent	Excellent	Suitable
	Poron®		Good	Good															
	PVC-Flexible	Excellent	Excellent	Excellent	Excellent		Good	Good									Excellent	Excellent	
	PVC-Rigid	Excellent	Excellent	Excellent	Excellent		Good	Good									Excellent	Excellent	Good
Other	**Aluminum**	Good			Good				Good	Good	Good	Good		Good	Excellent	Excellent			Suitable
	Epoxy		Good	Good					Good	Good	Good	Good		Good			Good		
	Glass								Good	Good	Good	Good		Good				Excellent	
	Fiberglass								Good	Good	Good	Good		Good		Good	Good	Good	
	Leather		Good	Good					Good	Good	Good	Good		Good				Excellent	
	Paper								Excellent	Excellent	Excellent	Excellent		Excellent		Excellent			Excellent
	Steel								Good	Good	Good	Good		Good	Excellent	Excellent			Excellent
	Wood (MDF)								Good	Good	Good	Good		Good		Good	Excellent	Excellent	

***** Tests based on ASTM D1238, 175°C/2.16kg

****** Flat press and continuous bonding temperature is the actual temperature range the adhesive should be exposed to.
The optimum temperature depends on the applied pressure and substrate permeability.