



Topcoat

Film

Adhesive

Liner

***Adhesive
Selection
Guide***

Adhesive Performance

ADHESIVE TYPE & CODE NUMBER		BASIC ADHESION PROPERTIES			ENVIRONMENTAL PERFORMANCE				TEMPERATURE RANGE ON STAINLESS STEEL			RECOMMENDATIONS	KEY FEATURES	
TYPE	CODE NO.	Tack	Peel		Shear	Resistance to:				Low °F (°C)	High °F (°C)	Min. App. °F (°C)		
			INIT ¹	ULT ²		CHEMICAL	UV	HEAT	HUMIDITY					
ACRYLIC	V-10	3	3	5	M	5	5	5	5	-40° (-40°)	302° (150°)	50° (10°)	Not for ELV or PLV vinyl	Clear, good plasticizer resistance
	L-10 [†]	3	3	5	M	5	5	5	5	-40° (-40°)	302° (150°)	50° (10°)	Not for ELV or PLV vinyl	Clear, good plasticizer resistance
	V-12*	3	2	4	M	4	3-4	4	4	-40° (-40°)	302° (150°)	50° (10°)		White opaque, general purpose
	V-22	4	3	4	M	5	5	5	6	-40° (-40°)	302° (150°)	32° (0°)		Ultradclear for overlaminating
	L-22 [†]	4	3	4	M	5	5	5	6	-40° (-40°)	302° (150°)	32° (0°)	Not for use on vinyl	Ultradclear for overlaminating
	V-23 (P) ³	4	3	5	M	5	5	5	6	-40° (-40°)	302° (150°)	50° (10°)	Not for use on vinyl	General purpose
	L-23 [†]	4	3	5	M	5	5	5	6	-40° (-40°)	302° (150°)	50° (10°)	Not for use on vinyl	for non-plasticized films
	V-23 (V) ⁴	3	3	4	M	5	4	4	6	-40° (-40°)	302° (150°)	50° (10°)		General purpose for plasticized vinyl
	L-24S [†]	3	3	5	M	4	5	5	5	-40° (-40°)	176° (80°)	50° (10°)	For sheet form	General purpose for plasticized vinyl
	V-26	4	3	5	M	5	5	5	6	-40° (-40°)	302° (150°)	50° (10°)		Garment and wire marking
	L-26 [†]	3	3	5	M	4	5	5	5	-40° (-40°)	176° (80°)	50° (10°)		General purpose for plasticized vinyl
	V-29	3	3	5	H	5	6	5	6	-40° (-40°)	302° (150°)	50° (10°)		Excellent plasticizer resistance; autoclavable
	L-29 [†]	3	3	5	H	5	6	5	6	-40° (-40°)	302° (150°)	50° (10°)		Excellent plasticizer resistance; autoclavable; overlaminating
	V-30	2	2	3	L	4	4	4	3	-20° (-29°)	302° (150°)	50° (10°)	Poor water resistance;	Low cost, removable limited outdoor use
	A-32	3	3	4	H	5	5	4	5	-40° (-40°)	302° (150°)	50° (10°)		General purpose; glass bottle; passes ice chest and pasteurization
	V-32	3	3	4	H	5	5	4	5	-40° (-40°)	302° (150°)	50° (10°)		General purpose; prime label
	A-32RW	2	2	4	H	5	5	4	5	-40° (-40°)	302° (150°)	50° (10°)		Good open/rework time; general purpose; glass bottle
	A-34	3	3	4	M	5	4	4	5	-40° (-40°)	302° (150°)	50° (10°)		General purpose; glass bottle
	V-38	3	2	4	M	5	4	4	6	-40° (-40°)	302° (150°)	50° (10°)	For sheet form	Semi-removable for shelf marking
	L-44 [†]	4	3	4	M	5	5	5	6	-40° (-40°)	302° (150°)	32° (0°)		Ultradclear for overlaminating
	L-46 [†]	4	3	5	M	5	5	5	6	-40° (-40°)	302° (150°)	50° (10°)	Not for use on vinyl	General purpose for non-plasticized films
	A-58	2	1	3	L	5	4	5	6	-20° (-29°)	302° (150°)	50° (10°)	For use on vinyl	Removable, bus signage
	V-58	2	1	3	L	5	4	5	6	-20° (-29°)	302° (150°)	50° (10°)	For use on vinyl	General purpose, removable
	V-63	3	3	5	H	5	6	5	6	-40° (-40°)	302° (150°)	50° (10°)		UV resistant; overlaminating
	V-66	4	4	6	M	5	5	5	6	-40° (-40°)	302° (150°)	50° (10°)	Not for use on vinyl	Medium to high tack; general purpose
	V-68	2	1	3	L	5	4	5	6	-20° (-29°)	302° (150°)	50° (10°)	For use on vinyl	Removable for shelf marking
	A-69	1	1	1	M-H	1	3	2	3	-20° (-29°)	302° (150°)	50° (10°)		Removable, bus wrap
	A-81	2	2	3-4	H	4	2	5	3	-40° (-40°)	176° (80°)	50° (10°)		General purpose, passes ice chest a and low-temp pasteurization
V-81	2	2	4	M-H	4	4	5	3	-40° (-40°)	176° (80°)	50° (10°)		General purpose, prime label	
V-94	2	3	4	M	6	6	5	6	-40° (-40°)	302° (150°)	50° (10°)	Not for plasticized film	Permanent for acrylic films	
V-95	2	2	4	H	6	5	6	5	-40° (-40°)	302° (150°)	50° (10°)	Not for plasticized film	Clear, high temp.; autoclavable	
A-109	1-2	1	1	M	1	3	2	1	-40° (-40°)	302° (150°)	50° (10°)		Cleanly removable for floor graphics	
V-122	4	3	5	L	5	4	5	4	-40° (-40°)	302° (150°)	50° (10°)	Not for use on vinyl	Ultradclear for overlaminating	
L-122 [†]	4	3	5	L	5	4	5	4	-40° (-40°)	302° (150°)	50° (10°)	Not for use on vinyl	Ultradclear for overlaminating	
V-126*	3	3	5	H	6	4	6	5	-40° (-40°)	302° (150°)	50° (10°)		High performance	

ADHESIVES COATED AT 1.0 MIL (25 MICRONS) THICKNESS AND TESTED ON 2.0 MIL (51 MICRONS) CLEAR POLYESTER FILM. EXCEPTIONS INCLUDE: L-24S AND L-26 WERE TESTED ON 3.5 MIL (89 MICRONS) WHITE VINYL, A-81 AND V-81 WERE TESTED ON 2.0 MIL HARD CLEAR POLYPROPYLENE. SEE PAGE 5 FOR SPECIFIC TEST METHODS USED.

¹ Initial peel - 15 minute dwell time on stainless steel panel at room temperature
² Ultimate peel - 72 hour dwell time on stainless steel panel at room temperature

³ (P) for polyester films
⁴ (V) for vinyl films

*"L" adhesives denote UL-Recognized adhesives. "L" adhesives listed on this chart may not be UL Recognized for listed temperature range and surface. "L" adhesives are included on this chart to compare performance values to our "V" adhesives only. Please reference our UL Guide for specific UL Recognition for these "L" adhesives. FLEXcon products are also listed under UL file numbers MH10170 and MH16633(N). A variety of FLEXcon products have CSA acceptance, and/or CUL acceptance. Please contact your Business Team for more information.

• Adhesive can be ordered as a laminating adhesive.

Tack
1 Very Low
 0 up to 100 g/sq.cm.
2 Low
 101 up to 400 g/sq.cm.
3 Medium
 401 up to 550 g/sq.cm.
4 Medium High
 551 up to 700 g/sq.cm.
5 High
 701 up to 800 g/sq.cm.
6 Very High
 More than 801 g/sq.cm.

Peel
1 Very Low
 0 up to 14 oz/in (0-154 N/m)
2 Low
 15 up to 34 oz/in (165-374 N/m)
3 Medium
 35 up to 54 oz/in (385-594 N/m)
4 Medium High
 55 up to 74 oz/in (605-814 N/m)
5 High
 75 up to 94 oz/in (825-1034 N/m)
6 Very High
 More than 95 oz/in (1045 N/m)

Shear
L = Low
 <10 hrs
M = Medium
 >10 <100 hrs
H = High
 >100 hrs

Chemical, Heat and Humidity Ratings
1 Poor
 More than 50% adhesion loss
2 Fair
 20 to 50% adhesion loss
3 Good
 10 to 20% adhesion loss
4 Very Good
 5 to 10% adhesion loss
5 Excellent
 -5 to +5% adhesion change
6 Superior
 +5% adhesion gain

Chemical Resistance:
 Overall average of Peel Performance retained after exposure to chemicals vs. 72 hrs. on Stainless Steel panel at room temperature.
Cleaning Solutions:
 Isopropyl Alcohol • Gasoline • Toluene • Oil (SAE 10W-30) • Acetic Acid (5%) • Water
Humidity Resistance:
 Overall average of Peel Performance retained after exposure to 100°F and 95% RH for 1 Day and 1 Week vs. 72 hrs. on Stainless Steel panel at room temperature.

Adhesive Performance

ADHESIVE TYPE & CODE NUMBER		BASIC ADHESION PROPERTIES			ENVIRONMENTAL PERFORMANCE				TEMPERATURE RANGE ON STAINLESS STEEL			RECOMMENDATIONS	KEY FEATURES	
TYPE	CODE NO.	Tack	Peel		Shear	Resistance to:				Low °F (°C)	High °F (°C)	Min. App. Temp. °F (°C)		
			INIT ¹	ULT ²		CHEMICAL	UV	HEAT	HUMIDITY					
ACRYLIC	A-136	3	3	4	H	5	5	4	5	-40° (-40°)	302° (150°)	50° (10°)		Aggressive, high-performance for full-squeeze tube
	V-156	6	3	5	L	5	5	5	5	-40° (-40°)	302° (150°)	32° (0°)		Very aggressive, low temperature
	L-156†	6	3	5	L	5	5	5	5	-40° (-40°)	302° (150°)	32° (0°)		Very aggressive, low temperature
	V-157	4	4	5	L	4	4	5	4	-40° (-40°)	257° (125°)	50° (10°)	Not for use on vinyl	Ultraclear for overlaminating
	L-157†	4	4	5	L	4	4	5	4	-40° (-40°)	257° (125°)	50° (10°)	Not for use on vinyl	Ultraclear for overlaminating
	V-170	2	2	4	M	6	5	5	6	-40° (-40°)	302° (150°)	50° (10°)		High temperature; high performance
	V-176	6	5	6	L	5	5	5	5	-40° (-40°)	302° (150°)	32° (0°)		Very aggressive, acid free
	V-224	3-4	4	5	L-M	5	5	4	5	-40° (-40°)	302° (150°)	50° (10°)		General purpose
	L-224†	3-4	4	5	L-M	5	5	4	5	-40° (-40°)	302° (150°)	50° (10°)		General purpose
	V-232	3	3	4	H	5	5	4	5	-40° (-40°)	302° (150°)	50° (10°)		Pharmaceutical; autoclavable
	V-253X	3	2	4	M	4	3-5	4	5	-40° (-40°)	302° (150°)	50° (10°)		Custom color, pigmented adhesive
	V-302LP	2	2	3	L	1	4	5	5	-20° (-29°)	302° (150°)	50° (10°)		Low adhesion, cleanly removable
	V-302ULP	1	1	1	L	1	2	2	2	-20° (-29°)	302° (150°)	50° (10°)		Ultra low adhesion, premask
	V-302XLP	1	1	1	L	1	3	4	3	-20° (-29°)	302° (150°)	50° (10°)		Ultra low adhesion, cleanly removable; inkjet cartridge application
	V-305	2	2	4-5	H	6	5	5	5	-40° (-40°)	302° (150°)	50° (10°)		Membrane switch, high temperature, high performance
	L-305†	2	2	4-5	H	6	5	5	5	-40° (-40°)	302° (150°)	50° (10°)		Membrane switch, high temperature, high performance
	V-314	1	1	1	L	1	3	2	1	-20° (-29°)	302° (150°)	50° (10°)		Ultra removable, acid free
	V-320	3	3	4	M	4	4	5	4	-40° (-40°)	302° (150°)	50° (10°)		General purpose
	V-327	1-2	1	1	M	1	3	2	1	-40° (-40°)	302° (150°)	50° (10°)		Low adhesion, removable
	V-330	3	3	4	M	3	3	4	3	-40° (-40°)	302° (150°)	50° (10°)		Reworkable for prime label; removable for shelf marking
	V-334	3	3	4	M	3	3	4	5	-40° (-40°)	302° (150°)	50° (10°)		White pigmented, general purpose
	V-344•	5	3	5	M	5	4	5	5	-40° (-40°)	302° (150°)	50° (10°)		General purpose
	L-344†•	5	3	5	M	5	4	5	5	-40° (-40°)	302° (150°)	50° (10°)		General purpose
	V-344DL	4	3	5	M	5	4	5	5	-40° (-40°)	302° (150°)	32° (0°)		Drum label, low temperature application
	V-378 bonds	6	5	6	L	5	4	5	5	-40° (-40°)	302° (150°)	32° (0°)		Aggressive, high performance; well to low surface energy surfaces
	L-378† bonds	6	5	6	L	5	4	5	5	-40° (-40°)	302° (150°)	32° (0°)		Aggressive, high performance; well to low surface energy surfaces
	V-402•	2	3	4	H	6	5	5	5	-40° (-40°)	302° (150°)	50° (10°)		High temperature, high performance
	L-402†•	2	3	4	H	6	5	5	5	-40° (-40°)	302° (150°)	50° (10°)		High temperature, high performance
	V-417•	5	3	4	H	4	4	5	5	-40° (-40°)	302° (150°)	50° (10°)		High temperature, high performance
	V-444	3	3	4	L	4	5	5	4	-40° (-40°)	302° (150°)	50° (10°)		Excellent wet out; passes ice chest and pasteurization
V-463	3	3-4	5	H	6	5	6	5	-40° (-40°)	302° (150°)	50° (10°)		Excellent oil resistance, high temperature	
V-465	3	2	3-4	M	3	4	4	3	-40° (-40°)	176° (80°)	50° (10°)		General purpose	
L-465†	3	2	3-4	M	3	4	4	3	-40° (-40°)	176° (80°)	50° (10°)		General purpose	
V-606•	3	3	5	H	5	5	6	5	-40° (-40°)	302° (150°)	50° (10°)		Aggressive, high performance	
L-606†•	3	3	5	H	5	5	6	5	-40° (-40°)	302° (150°)	50° (10°)		Aggressive, high performance	
RUBBER	V-88	6	6	6	H	5	1	5	4	-20° (-29°)	200° (93°)	50° (10°)	Not for use on vinyl	High performance
	L-88†	6	6	6	H	5	1	5	4	-20° (-29°)	176° (80°)	50° (10°)	Not for use on vinyl	High performance, fire extinguisher
	V-98	6	3	5	M	5	1	4	4	-20° (-29°)	200° (93°)	50° (10°)		General purpose
	V-104	6	6	6	L	5	1	5	5	-20° (-29°)	200° (93°)	50° (10°)		Very aggressive
	V-367	6	5	6	L	5	1	2	4	-20° (-29°)	200° (93°)	50° (10°)		Very aggressive
SILICONE	Densil®	1	3	4	H	5	6	6	5	-300° (-185°)	302° (150°)	50° (10°)		High performance silicone

ADHESIVES COATED AT 1.0 MIL (25 MICRONS) THICKNESS – EXCEPTIONS INCLUDE V-253X COATED AT 1.7 MIL (43 MICRONS), AND V-367 COATED AT 1.5 MIL (38 MICRONS). ALL WERE TESTED ON 2.0 MIL (51 MICRONS) CLEAR POLYESTER FILM – EXCEPTIONS INCLUDE: L-88 WAS TESTED ON 3.5 MIL (89 MICRONS) WHITE DESTRUCT POLYETHYLENE FILM. SEE PAGE 5 FOR SPECIFIC TEST METHODS USED.

¹ Initial peel - 15 minute dwell time on stainless steel panel at room temperature

² Ultimate peel - 72 hour dwell time on stainless steel panel at room temperature

†“L” adhesives denote UL-Recognized adhesives. “L” adhesives listed on this chart may not be UL Recognized for listed temperature range and surface. “L” adhesives are included on this chart to compare performance values to our “V” adhesives only. Please reference our UL Guide for specific UL Recognition for these “L” adhesives. FLEXcon products are also listed under UL file numbers MH10170 and MH16635(N). A variety of FLEXcon products have CSA acceptance, and/or CUL acceptance. Please contact your Business Team for more information.

• Adhesive can be ordered as a laminating adhesive.

UV Resistance

1 Poor

Adhesive turns very dark brown and/or complete loss of adhesion

2 Fair

Adhesive turns brown, some adhesion loss/chalking and/or cracking of film

3 Good

Adhesive turns yellowish, some adhesion loss but no effect on film

4 Very Good

Slight discoloration, no adhesion loss

5 Excellent

Very slight discoloration

6 Superior

No change

1000 hours in QUV unit with 8 hour light, 4 hour humidity cycle and/or up to 1 year exposure in Florida.

Note: UV resistance of adhesive is also dependent on film. Service temperature limits are also dependent on film and application surface. Depending on film and surface it could be higher or lower.

Adhesive Performance for Polyester Film/Adhesive Combinations

ADHESIVE TYPE AND CODE NUMBER		GLASS ¹ /METALS	HIGH SURFACE ENERGY PLASTICS	LOW SURFACE ENERGY PLASTICS
		<ul style="list-style-type: none"> ● Stainless Steel¹ ● Aluminum ● Copper ● Tin ● Zinc ● Lead 	<ul style="list-style-type: none"> ● Alkyd Enamel ● Polycarbonate ● Polyester ● Acrylic¹ ● Melamine ● ABS ● Vinyl ● Nylon ● Kapton* 	<ul style="list-style-type: none"> ● Polypropylene¹ ● Polyethylene ● Polystyrene ● Tedlar* ● PVA ● EVA ● Acetal
TYPE	CODE NO.	SURFACE ENERGY GREATER THAN 50 DYNES/CM ²	SURFACE ENERGY: 35 TO 45 DYNES/CM ²	SURFACE ENERGY: 30 TO 35 DYNES/CM ²
ACRYLIC	V-10	4.5	4.5	1.5
	L-10 [†]	4.5	4.5	1.5
	V-12*	4.0	4.0	1.0
	V-20	4.0	4.0	1.5
	V-22	3.5	3.5	2.0
	L-22 [†]	3.5	3.5	2.0
	V-23 (P) ²	4.5	4.5	2.5
	L-23 [†]	4.5	4.5	2.5
	V-23 (V) ³	4.0	4.0	1.5
	L-24S [†]	4.5	4.5	1.5
	V-26	4.5	4.5	2.5
	L-26 [†]	4.0	4.0	1.5
	V-29	4.5	4.5	1.5
	L-29 [†]	4.5	4.5	1.5
	V-30	3.0	3.0	1.0
	A-32	4.0	4.0	1.5
	V-32	4.0	4.0	1.5
	A-32RW	3.5	3.5	1.5
	A-34	4.0	4.0	1.5
	V-38	4.0	4.0	1.5
	L-44 [†]	3.0	3.0	2.0
	L-46 [†]	4.5	4.5	2.0
	A-58	3.0	3.0	1.0
	V-58	3.0	3.0	1.0
	V-63	4.5	4.5	1.5
	V-66	5.0	4.5	2.5
	V-68	3.0	3.0	1.0
	A-69	1.0	1.0	0.5
	A-81	3.5	3.5	1.0
	V-81	4.0	4.0	1.0
	V-94	3.5	3.5	1.5
	V-95	3.5	3.5	1.0
	A-109	1.5	1.5	0.5
	V-122	4.5	4.5	3.0
	L-122 [†]	4.5	4.5	3.0
	V-126	4.5	4.0	1.5
	A-136	4.0	4.0	1.5
	V-156	4.5	4.5	2.5
	L-156 [†]	4.5	4.5	2.5

ADHESIVES COATED AT 1.0 MIL (25 MICRONS) THICKNESS AND TESTED ON 2.0 MIL (51 MICRONS) CLEAR POLYESTER FILM. EXCEPTIONS INCLUDE: L-24S AND L-26 WERE TESTED ON 3.5 MIL (89 MICRONS) WHITE VINYL, A-81 AND V-81 WERE TESTED ON 2.0 MIL HARD CLEAR POLYPROPYLENE. SEE PAGE 5 FOR SPECIFIC TEST METHODS USED.

¹ Denotes application surfaces tested

² (P) for polyester films

³ (V) for vinyl films

[†] "L" adhesives denote UL-Recognized adhesives. "L" adhesives listed on this chart may not be UL Recognized for listed temperature range and surface. "L" adhesives are included on this chart to compare performance values to our "V" adhesives only. Please reference our UL Guide for specific UL Recognition for these "L" adhesives. FLEXcon products are also listed under UL file numbers MH10170 and MH116635(N). A variety of FLEXcon products have CSA acceptance, and/or CUL acceptance. Please contact your Business Team for more information.

*Kapton and Tedlar are registered trademarks of E.I. DuPont Company.

• Adhesive can be ordered as a laminating adhesive.

180° Peel

1 Very Low
0 up to 14 oz/in (0-154 N/m)

2 Low
15 up to 34 oz/in (165-374 N/m)

3 Medium
35 up to 54 oz/in (385-594 N/m)

4 Medium High
55 up to 74 oz/in (605-814 N/m)

5 High
75 up to 94 oz/in (825-1034 N/m)

6 Very High
More than 95 oz/in (1045 N/m)

Adhesive Performance for Polyester Film/Adhesive Combinations

ADHESIVE TYPE AND CODE NUMBER		GLASS ¹ /METALS	HIGH SURFACE ENERGY PLASTICS	LOW SURFACE ENERGY PLASTICS
		<ul style="list-style-type: none"> ● Stainless Steel¹ ● Aluminum ● Copper ● Tin ● Zinc ● Lead 	<ul style="list-style-type: none"> ● Alkyd Enamel ● Polycarbonate ● Polyester ● Acrylic¹ ● Melamine ● ABS ● Vinyl ● Nylon ● Kapton* 	<ul style="list-style-type: none"> ● Polypropylene¹ ● Polyethylene ● Polystyrene ● Tedlar* ● PVA ● EVA ● Acetal
TYPE	CODE NO.	SURFACE ENERGY GREATER THAN 50 DYNES/CM ²	SURFACE ENERGY: 35 TO 45 DYNES/CM ²	SURFACE ENERGY: 30 TO 35 DYNES/CM ²
ACRYLIC	V-157	4	5	2
	L-157 [†]	4	5	2
	V-170	4	4	1
	V-176	6	5	4
	V-224	4	4	1
	L-224 [†]	4	4	1
	V-232	4	4	1
	V-253X	4	4	2
	V-302LP	3	1	1
	V-302ULP	1	1	1
	V-302XLP	1	1	1
	V-305	5	5	2
	L-305 [†]	5	5	2
	V-314	1	1	1
	V-320	4	3	1
	V-327	1	1	1
	V-330	4	3	1
	V-334	4	3	1
	V-344*	5	5	2
	L-344 [†] *	5	5	2
	V-344DL	3	4	2
	V-378	6	5	4
	L-378 [†]	6	5	4
	V-402*	4	4	1
	L-402 [†] *	4	4	1
	V-417*	5	5	1
	V-444	4	4	2
V-463	4	4	3	
V-465	3	3	1	
L-465	3	3	1	
V-606*	4	4	3	
L-606 [†] *	4	4	3	
RUBBER	V-88	6	5	5
	L-88 [†]	6	5	5
	V-98	5	5	4
	V-104	6	6	6
	V-367	6	6	6
SILICONE	Densil [®]	3	4	2

ADHESIVES COATED AT 1.0 MIL (25 MICRONS) THICKNESS – EXCEPTIONS INCLUDE V-253X COATED AT 1.7 MIL (43 MICRONS), AND V-367 COATED AT 1.5 MIL (38 MICRONS); ALL ADHESIVES TESTED ON 2.0 MIL (51 MICRONS) CLEAR POLYESTER FILM. CERTAIN ADHESIVES MAY NOT BE RECOMMENDED FOR POLYESTER FILM. PLEASE CONTACT YOUR BUSINESS TEAM FOR MORE INFORMATION. SEE BELOW FOR SPECIFIC TEST METHODS USED.

¹ Denotes application surfaces tested

[†]"L" adhesives denote UL-Recognized adhesives. "L" adhesives listed on this chart may not be UL Recognized for listed temperature range and surface. "L" adhesives are included on this chart to compare performance values to our "V" adhesives, only. Please reference our UL Guide for specific UL Recognition for these "L" adhesives. FLEXcon products are also listed under UL file numbers MH10170 and MH16635(N). A variety of FLEXcon products have CSA acceptance and/or CUL acceptance. Please contact your Business Team for more information.

*Kapton and Tedlar are registered trademarks of E.I. DuPont Company.

• Adhesive can be ordered as a laminating adhesive.

180° Peel

1 Very Low

0 up to 14 oz/in (0-154 N/m)

2 Low

15 up to 34 oz/in (165-374 N/m)

3 Medium

35 up to 54 oz/in (385-594 N/m)

4 Medium High

55 up to 74 oz/in (605-814 N/m)

5 High

75 up to 94 oz/in (825-1034 N/m)

6 Very High

More than 95 oz/in (1045 N/m)

TEST METHODS USED

TACK ASTM 2979 (Probe)
The probe comes in contact with the surface of the adhesive. As the probe is pulled away, the force required to remove the adhesive is measured in gms/cm².

PEEL ASTM D 903
Peel adhesion test for single-sided pressure-sensitive coated films (tapes). A 1" x 5" strip of material is applied to the application surface (stainless steel, acrylic, polypropylene). After a dwell time of 15 minutes for initial peel and 72 hours for ultimate peel, a 180° angle peel is taken at 12"/minute.

SHEAR ASTM D 3654 Method A
A measure of the internal or cohesive strength of the adhesive. A 1 sq. inch area of test sample is applied to stainless steel panel and after 1 hour dwell time at room temperature, 4 lbs. of static load is applied at 178° angle. Shear is measured in hours.

Adhesive Performance for Most Common Film/Adhesive Combinations

FILM/ADHESIVE COMBINATION		BASIC ADHESION PROPERTIES			ENVIRONMENTAL PERFORMANCE				TEMPERATURE RANGE ON STAINLESS STEEL				RECOMMENDATIONS	KEY FEATURES		
FILM	ADHESIVE	Tack	Peel	Shear	Resistance to:				Low	High	Min. App. Temp.					
					CHEMICAL	UV	HEAT	HUMIDITY						°F	(°C)	°F
V 400 FW	V-10	3	3 5	M	4	5	5	5	-40°	(-40°)	176°	(80°)	50°	(10°)	Not for ELV or PLV vinyl	General purpose for plasticized vinyl
V 400 FW	L-10†	3	3 5	M	4	5	5	5	-40°	(-40°)	176°	(80°)	50°	(10°)	Not for ELV or PLV vinyl	Clear, good plasticizer resistance
PM 200 C	V-12*	3	2 4	M	4	3-4	4	4	-40°	(-40°)	302°	(150°)	50°	(10°)		White opaque, general purpose
V 400 FW	V-20	3	2-3 4	L-M	3	5	4	3	-40°	(-40°)	176°	(80°)	50°	(10°)		Low cost, permanent
OM 200 C	V-22	4	3 4	M	5	5	5	6	-40°	(-40°)	257°	(125°)	32°	(0°)		Ultraclear for overlaminating
OM 200 C	L-22† ^Δ	4	3 4	M	5	5	5	6	-40°	(-40°)	257°	(125°)	32°	(0°)	Not for use on vinyl	Ultraclear for overlaminating
PM 200 C	V-23 (P) ³	4	3 5	M	5	5	5	6	-40°	(-40°)	302°	(150°)	50°	(10°)	Not for use on vinyl	General purpose
PM 200 C	L-23†	4	3 5	M	5	5	5	6	-40°	(-40°)	302°	(150°)	50°	(10°)	Not for use on vinyl	for non-plasticized films
V 400 FW	V-23(V) ⁴	3	3 5	L-M	4	5	5	5	-40°	(-40°)	176°	(80°)	50°	(10°)		General purpose for plasticized vinyl
V 400 FW	L-24S†	3	3 5	M	4	5	5	5	-40°	(-40°)	176°	(80°)	50°	(10°)	For sheet form	General purpose for plasticized vinyl
PC 600 W	V-26	3	2 4	L	3	5	4	3	-40°	(-40°)	176°	(80°)	50°	(10°)		Garment and wire marking
V 400 FW	L-26†	3	3 5	M	4	5	5	5	-40°	(-40°)	176°	(80°)	50°	(10°)		General purpose for plasticized vinyl
V 400 FW	V-29	2	3 5	M-H	5	5	5	5	-40°	(-40°)	176°	(80°)	50°	(10°)		Excellent plasticizer resistance; autoclavable
V 400 FW	L-29†	2	3 5	M-H	5	5	5	5	-40°	(-40°)	176°	(80°)	50°	(10°)		Excellent plasticizer resistance; autoclavable, overlaminating
V 400 FW	V-30	2	2 3	L	3	4	4	2	-20°	(-29°)	176°	(80°)	50°	(10°)	Poor water resistance; limited outdoor use	Low cost, removable
PP 200 HC	A-32	3	3 4	H	5	1	4	5	-40°	(-40°)	176°	(80°)	50°	(10°)		General purpose, glass bottle; passes ice chest and pasteurization
PP 200 HC	V-32	3	3 4	H	5	1	4	5	-40°	(-40°)	176°	(80°)	50°	(10°)		General purpose, prime label
PP 200 HC	A-32RW	2	2 4	H	5	1	4	5	-40°	(-40°)	176°	(80°)	50°	(10°)		Good open/rework time; general purpose, glass bottle
PP 200 HC	A-34	3	3 4	M	5	1	4	5	-40°	(-40°)	176°	(80°)	50°	(10°)		General purpose, glass bottle
V 400 FW	V-38	3	2 4	M	4	5	5	5	-20°	(-29°)	176°	(80°)	50°	(10°)	For sheet form	Semi-removable, shelf marking adhesive
OM 200 C	L-44†	4	3 4	M	5	5	5	6	-40°	(-40°)	302°	(150°)	32°	(0°)		Ultraclear overlaminating
PM 200 C	L-46†	4	3 5	M	5	5	5	6	-40°	(-40°)	302°	(150°)	50°	(10°)	Not for use on vinyl	For non-plasticized films
V 400 FW	Opq. A-58	2	1 3	L	5	5	5	5	-20°	(-29°)	176°	(80°)	50°	(10°)	For use on vinyl	Removable, bus signage
V 400 FW	V-58	2	1 3	L	5	5	5	5	-20°	(-29°)	176°	(80°)	50°	(10°)	For use on vinyl	General purpose removable
OM 200 C	V-63	2	3 5	M-H	5	5	5	5	-40°	(-40°)	176°	(80°)	50°	(10°)		UV resistant; overlaminating
PM 200 C	V-66	4	4 6	M	5	5	5	6	-40°	(-40°)	302°	(150°)	50°	(10°)	Not for use on vinyl	Medium to high tack; general purpose
V 400 FW	V-68	2	1 3	L	5	5	5	5	-20°	(-29°)	176°	(80°)	50°	(10°)	For use on vinyl	Removable shelf marking
PLV 400 FW	A-69	1	1 1	M	1	3	2	3	-20°	(-29°)	176°	(80°)	50°	(10°)		Removable, bus wrap
PP 200 HC	A-81	2	2 3	H	4	2	5	3	-40°	(-40°)	176°	(80°)	50°	(10°)		General purpose, passes ice chest and low-temp pasteurization
PP 200 HC	V-81	2	2 4	M-H	4	4	5	3	-40°	(-40°)	176°	(80°)	50°	(10°)		General purpose, prime label
A 200 W	V-94	2	3 4	M	4	5	5	5	-40°	(-40°)	212°	(100°)	50°	(10°)	Not for use on vinyl	Permanent for acrylic films
PM 150 C	V-95	2	2 4	H	6	5	6	5	-40°	(-40°)	302°	(150°)	50°	(10°)	Not for use on vinyl	Clear, high temp.; autoclavable
V 400 FW	A-109	1-2	1 1	L-M	1	3	2	2	-40°	(-40°)	176°	(80°)	50°	(10°)		Cleanly removable for floor graphics
OM 100 C	V-122	4	3 4	L	4	3-4	5	4	-40°	(-40°)	302°	(150°)	50°	(10°)	Not for use on vinyl	Ultraclear for overlaminating
OM 200 C	L-122†	4	3 5	L	5	4	5	4	-40°	(-40°)	302°	(150°)	50°	(10°)	Not for use on vinyl	Ultraclear for overlaminating
PM 200 C	V-126*	3	3 5	H	6	4	6	5	-40°	(-40°)	302°	(150°)	50°	(10°)		High temperature
PE 380 FWM	A-136	3	3-4 4	H	5	1	4	5	-40°	(-40°)	176°	(80°)	50°	(10°)		Aggressive, high-performance for full-squeeze tube

ADHESIVES COATED AT 1.0 MIL (25 MICRONS) THICKNESS; EXCEPTIONS INCLUDE V-26 AND V-94 COATED AT 1.5 MIL (38 MICRONS). CLEAR POLYESTER FILM, EXCEPTIONS INCLUDE: L-24S AND L-26 WERE TESTED ON 3.5 MIL (89 MICRONS) WHITE VINYL, A-81 AND V-81 WERE TESTED ON 2.0 MIL HARD CLEAR POLYPROPYLENE. SEE PAGE 5 FOR SPECIFIC TEST METHODS USED.

¹ Initial peel - 15 minute dwell time on stainless steel panel at room temperature

³ (P) for polyester films

² Ultimate peel - 72 hour dwell time on stainless steel panel at room temperature

⁴ (V) for vinyl films

[†] "L" adhesives denote UL-Recognized adhesives. "L" adhesives listed on this chart may not be UL-Recognized for listed temperature range and surface. "L" adhesives are included on this chart to compare performance values to our "V" adhesives only. Please reference our UL Guide for specific UL Recognition for these "L" adhesives. FLEXcon products are also listed under UL file numbers

MH10170 and MH16635(N). A variety of FLEXcon products have CSA acceptance, and/or CUL acceptance. Please contact your Business Team for more information.

^Δ OM 200 C L-22 and K 200 Y Densil[®] are not UL-Recognized film/adhesive combinations.

* Adhesive can be ordered as a laminating adhesive.

Tack	Peel	Shear	Chemical, Heat and Humidity Ratings
1 Very Low 0 up to 100 g/sq.cm.	1 Very Low 0 up to 14 oz/in (0-154 N/m)	L = Low <10 hrs	1 Poor More than 50% adhesion loss
2 Low 101 up to 400 g/sq.cm.	2 Low 15 up to 34 oz/in (165-374 N/m)	M = Medium >10 <100 hrs	2 Fair 20 to 50% adhesion loss
3 Medium 401 up to 550 g/sq.cm.	3 Medium 35 up to 54 oz/in (385-594 N/m)	H = High >100 hrs	3 Good 10 to 20% adhesion loss
4 Medium High 551 up to 700 g/sq.cm.	4 Medium High 55 up to 74 oz/in (605-814 N/m)		4 Very Good 5 to 10% adhesion loss
5 High 701 up to 800 g/sq.cm.	5 High 75 up to 94 oz/in (825-1034 N/m)		5 Excellent -5 to +5% adhesion change
6 Very High More than 801 g/sq.cm.	6 Very High More than 95 oz/in (1045 N/m)		6 Superior +5% adhesion gain
			Chemical Resistance: Overall average of Peel Performance retained after exposure to chemicals vs. 72 hrs. on Stainless Steel panel at room temperature. Cleaning Solutions: Isopropyl Alcohol • Gasoline • Toluene • Oil (SAE 10W-30) • Acetic Acid (5%) • Water Humidity Resistance: Overall average of Peel Performance retained after exposure to 100°F and 95% RH for 1 Day and 1 Week vs. 72 hrs. on Stainless Steel panel at room temperature.

Adhesive Performance for Most Common Film/Adhesive Combinations

FILM/ADHESIVE COMBINATION		BASIC ADHESION PROPERTIES			ENVIRONMENTAL PERFORMANCE				TEMPERATURE RANGE ON STAINLESS STEEL			RECOMMENDATIONS	KEY FEATURES
TYPE	CODE NO.	Tack	Peel INIT ¹ UL ²	Shear	Resistance to:				Low °F (°C)	High °F (°C)	Min. App. Temp. °F (°C)		
					CHEMICAL	UV	HEAT	HUMIDITY					
V 400 FW	V-156	5	3 5	L	5	5	5	5	-40° (-40°)	176° (80°)	32° (0°)		Low temperature, high adhesion
V 400 FW	L-156†	5	3 5	L	5	5	5	5	-40° (-40°)	176° (80°)	32° (0°)		Very aggressive, low temperature
OM 200 C	V-157	4	4 5	L	4	4	5	4	-40° (-40°)	302° (150°)	50° (10°)		Ultraclear for overlaminating
OM 200 C	L-157†	4	4 5	L	4	4	5	4	-40° (-40°)	302° (150°)	50° (10°)		Ultraclear for overlaminating
PM 200 C	V-170	2	2 4	M	6	5	5	6	-40° (-40°)	302° (150°)	50° (10°)		High temperature, high performance
V 400 FW	V-176	5	5 6	L	5	5	5	5	-20° (-29°)	176° (80°)	32° (0°)		Very aggressive, acid free
V 400 FW	V-224	4	4 5	L-M	3-4	3-4	5	3	-40° (-40°)	176° (80°)	50° (10°)		General purpose
V 400 FW	L-224†	4	4 5	L-M	3-4	3-4	5	3	-40° (-40°)	176° (80°)	50° (10°)		General purpose
PM 150 C	V-232	3	3 4	H	5	5	4	5	-40° (-40°)	302° (150°)	50° (10°)		Pharmaceutical; autoclavable
V 240 RC	V-253X	3	3 5	M	3	2	5	3	-40° (-40°)	176° (80°)	50° (10°)		Custom color, pigmented adhesive
V 400 FW	V-302LP	2	2 3	L	1	4	5	5	-20° (-29°)	176° (80°)	50° (10°)		Low adhesion, cleanly removable
V 400 FW	V-302ULP	1	1 1	L	1	2	2	2	-20° (-29°)	176° (80°)	50° (10°)		Ultra low adhesion, premask
V 400 FW	V-302XLP	2	2 3	L	1	4	4	1	-20° (-29°)	176° (80°)	50° (10°)		Ultra low adhesion, cleanly removable; inkjet cartridge application
PM 200 C	V-305	2	2 4-5	H	6	5	5	5	-40° (-40°)	302° (150°)	50° (10°)		Membrane switch, high temperature, high performance
PM 200 C	L-305†	2	2 4-5	H	6	5	5	5	-40° (-40°)	302° (150°)	50° (10°)		Membrane switch, high temperature, high performance
V 400 FW	V-314	1	1 1	L	1	3	1	1	-20° (-29°)	176° (80°)	50° (10°)		Ultra removable, acid free
V 325 FW	V-320	3	3 4	M	4	4	5	4	-40° (-40°)	176° (80°)	50° (10°)		General purpose
V 400 FW	V-327	1-2	1 1	L-M	1	3	2	2	-40° (-40°)	176° (80°)	50° (10°)		Low adhesion, removable
V 400 FW	V-330	3	3 5	L	3	5	4	3	-40° (-40°)	176° (80°)	50° (10°)		Reworkable for prime label; removable for shelf marking
PPM 200 W/W	V-334	3	2 4	M	3	2	4	5	-40° (-40°)	212° (100°)	50° (10°)		Two-way window decal
V 400 FW	V-344*	5	3 5	L-M	5	5	5	5	-40° (-40°)	176° (80°)	50° (10°)		General purpose; bonds well to low surface energy surfaces
V 400 FW	L-344*†	5	3 5	L-M	5	5	5	5	-40° (-40°)	176° (80°)	50° (10°)		General purpose; bonds well to low surface energy surfaces
PE 350 FWM	V-344DL	4	3 4	L-M	5	3	5	5	-40° (-40°)	176° (80°)	32° (0°)		Drum label, low temperature application
V 400 FW	V-378	6	4 6	L	4	5	5	5	-40° (-40°)	176° (80°)	32° (0°)		Aggressive, high performance; bonds well to low surface energy surfaces
V 400 FW	L-378†	6	4 6	L	4	5	5	5	-40° (-40°)	176° (80°)	32° (0°)		Aggressive, high performance; bonds well to low surface energy surfaces
PM 200 C	V-402*	2	3 4	H	6	5	5	5	-40° (-40°)	302° (150°)	50° (10°)		High temperature, high performance
PM 200 C	L-402*†	2	3 4	H	6	5	5	5	-40° (-40°)	302° (150°)	50° (10°)		High temperature, high performance
PM 200 C	V-417*	5	3 4	H	4	4	5	5	-40° (-40°)	302° (150°)	50° (10°)		High temperature, high performance
PE 380 FWM	V-444	3	3 4	L	4	3	4	4	-40° (-40°)	176° (80°)	50° (10°)		Excellent wet out; passes ice chest and pasteurization
V 400 FW	L-465†	2-3	3 4	M	3	4	4	3	-40° (-40°)	176° (80°)	50° (10°)		General purpose
V 400 FW	V-465	2-3	3 4	M	3	4	4	3	-40° (-40°)	176° (80°)	50° (10°)		General purpose
PM 200 C	V-463	3	3 4-5	H	6	5	6	5	-40° (-40°)	176° (80°)	50° (10°)		Excellent oil resistance, high temperature
PM 200 C	V-606*	3	3-4 5-6	H	5	5	6	5	-40° (-40°)	302° (150°)	50° (10°)		Aggressive, high performance
PM 200 C	L-606*†	3	3-4 5-6	H	5	5	6	5	-40° (-40°)	302° (150°)	50° (10°)		Aggressive, high performance
DA 200 C	V-88	6	6 6	H	1	1	5	1	-20° (-29°)	200° (93°)	50° (10°)	Not for use on vinyl	High performance
PE 200 W	L-88†	6	6 6	H	5	1	5	4	-20° (-29°)	176° (80°)	50° (10°)	Not for use on vinyl	High performance, fire extinguisher
Destruct													
V 400 FW	V-98	5	3 5	M	5	1	4	4	-20° (-29°)	176° (80°)	50° (10°)		General purpose
V 400 FW	V-104	6	6 6	L	4	1	5	4	-20° (-29°)	176° (80°)	50° (10°)		Very aggressive
PE 380 FWM	V-367	6	4 5	L	5	1	4	4	-20° (-29°)	176° (80°)	50° (10°)		Very aggressive
K 200 Y Densil®†A		1	3 4	H	5	6	6	5	-300° (-185°)	500° (260°)	50° (10°)		Superior overall performance

ADHESIVES COATED AT 1.0 MIL (25 MICRONS) THICKNESS; EXCEPTIONS INCLUDE V-253X COATED AT 4.0 MIL (102 MICRONS), V-367 COATED AT 1.5 MIL (38 MICRONS), V-606 AND L-606 COATED AT 2.0 MIL (51 MICRONS).

¹ Initial peel - 15 minute dwell time on stainless steel panel at room temperature

² Ultimate peel - 72 hour dwell time on stainless steel panel at room temperature

† "L" adhesives denote UL Recognized adhesives. "L" adhesives listed on this chart may not be UL Recognized for listed temperature range and surface. "L" adhesives are included on this chart to compare performance values to our "V" adhesives only. Please reference our UL Guide for specific UL Recognition for these "L" adhesives. FLEXcon products are also listed under UL file numbers MH10170 and MH16635(N). A variety of FLEXcon products have CSA acceptance, and/or CUL acceptance. Please contact your Business Team for more information.

Δ OM 100 C L-22 and K 200 Y Densil® are not UL-Recognized film/adhesive combinations.

* Adhesive can be ordered as a laminating adhesive.

UV Resistance

1 Poor

Adhesive turns very dark brown and/or complete loss of adhesion

2 Fair

Adhesive turns brown, some adhesion loss/chalking and/or cracking of film

3 Good

Adhesive turns yellowish, some adhesion loss but no effect on film

4 Very Good

Slight discoloration, no adhesion loss

5 Excellent

Very slight discoloration

6 Superior

No change

1000 hours in QUV unit with 8 hour light, 4 hour humidity cycle and/or up to 1 year exposure in Florida.

Note: UV resistance of adhesive is also dependent on film. Service temperature limits are also dependent on film and application surface. Depending on film and surface it could be higher or lower.



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