### **3M**

#### WSS-M99P48-B3

## Pressure Sensitive Adhesive Tape (Interior, Exterior and Underhood Applications)

**Automotive Interior Spec Testing** 

Technical Bulletin April 2021

3M tested the following adhesive tapes to the Automotive OEM Spec: WSS-M99P48-B3. The results of the testing are provided in the following information. Adhesives not listed on this document have not been tested to this spec.

Automotive specification testing was performed on lab substrates and not on actual automotive production parts. Additional testing by the converter, tier or supplier is needed to show that parts and adhesives meet such specification. Please carefully read the automotive specification for further information.

Revision	Date	Comments		
Original release	April 2021	Initial testing and bulletin		
		completed		

3M<sup>™</sup> Adhesive Transfer Tape 9472/LE 3M<sup>™</sup> Double Coated Tape 93015LE

3M<sup>™</sup> Adhesive Transfer Tape 6035PC/PL 3M<sup>™</sup> Adhesive Transfer Tape 9775WL

3M™ Double Coated Tape 9832 /HL 3M™ Low VOC Double Coated Tissue Tape DCX1018

3M<sup>™</sup> Adhesive Transfer Tape 950 3M<sup>™</sup> Adhesive Transfer Tape 9627

Test	Test Condition / Environment			
	Initial	20 minutes @ room temp 23°C / 73°F		
180° Peel Adhesion	Heat Aged	168 hours @ 100°C / 212°F		
300mm / 12 inch per min		10 cycles		
	Environmental	4 hours @ 100°C / 212°F		
	Cycle	4 hours @ 38°C / 100°F		
		16 hours @ -30°		

			gan 2	£ 930151E	6035PC/PL	97FWL	983714	Odio	18 95019AT	2 967
		2 mil PET	M	M	M	D	D	M	M	M
		crushed EPDM	M	D	M	M	D	D	D	M
	Initial	Ether	M	D	M	М	D	D	D	М
		Ester	М	М	М	М	М	М	М	М
		Microcellular	М	М	М	D	М	М	М	М
		2 mil PET	М	М	М	М	D	М	М	М
		crushed EPDM	М	М	D	D	D	М	М	М
PP	Heat	Ether	М	D	D	М	М	М	М	М
		Ester	М	М	М	М	М	М	М	М
		Microcellular	М	М	D	D	D	М	М	M
		2 mil PET	M	D	D	D	D	М	D	М
		crushed EPDM	M	М	D	D	М	М	М	M
	Cycle	Ether	M	D	D	М	М	М	D	M
		Ester	M	D	М	М	М	М	М	M
		Microcellular	M	М	D	D	D	М	М	M
		2 mil PET	М	М	М	М	D	М	М	М
		crushed EPDM	М	М	М	М	D	D	D	M
	Initial	Ether	D	D	М	М	D	М	D	M
		Ester	М	М	М	М	М	М	М	М
		Microcellular	М	D	М	М	М	М	М	М
		2 mil PET	M	М	М	М	М	М	М	М
		crushed EPDM	M	М	М	М	М	М	М	M
ABS	Heat	Ether	M	D	М	М	М	М	М	М
		Ester	M	М	М	М	М	М	М	M
		Microcellular	M	М	М	М	М	М	М	M
		2 mil PET	М	М	М	М	М	М	D	M
		crushed EPDM	М	M	M	М	М	М	М	M
	Cycle	Ether	М	D	M	М	М	М	М	M
		Ester	М	M	M	М	М	М	М	M
		Microcellular	М	М	M	М	М	М	М	M
FOG / SAE	J1756		99	97	98	99	99	39	99	99

M= meets requirements

D= does not meet requirements

Note: Data reported in this technical bulletin, for all test methods, is the average of three replicates using one typical lot of adhesive.

#### 9472LE

	Initial – 20 minutes @ 23°C / 73°F									
	Substrate	Backing	AVG Peel N/mm	AVG Peel ozf/in	Observation	Requirement 0.48 N/mm / 43.85 oz/in				
	PP	2 mil	.73	68.05	Clean Peel	Meets requirement				
	ABS	PET	.70	64.54	Clean Peel	Meets requirement				
	Crushed EPDM				Foam Broke	Meets requirements				
	Polyether	Rigid PP Panel			Foam Broke	Meets requirements				
9472LE	Polyester				Foam Broke	Meets requirements				
	Microcellular				Foam Broke	Meets requirements				
	Crushed EPDM	Rigid ABS Panel			Foam Broke	Meets requirements				
	Polyether				Foam Broke	Meets requirements				
	Polyester				Foam Broke	Meets requirements				
	Microcellular				Foam Broke	Meets requirements				

		Hea	at Aged – 168 h	ours @ 100°C /	′ 212°F	
	Substrate	Backing	AVG Peel N/mm	AVG Peel ozf/in	Observation	Requirement Max 25% loss from original
	PP	PET	.67	62.59	Clean peel	Meets requirement
	ABS	1	.99	92.07	Cohesive	Meets requirement
	Crushed EPDM				Foam Broke	Meets requirement
	Polyether	Rigid PP Panel			Foam Broke	Meets requirements
9472LE	Polyester				Foam Broke	Meets requirements
	Microcellular				Foam Broke	Meets requirements
	Crushed EPDM				Foam Broke	Meets requirements
	Polyether	Rigid ABS Panel			Foam Broke	Meets requirements
	Polyester				Foam Broke	Meets requirements
	Microcellular				Foam Broke	Meets requirements

	Environmental Cycle – 10 cycles									
	Substrate	Backing	AVG Peel N/mm	AVG Peel ozf/in	Observation	Requirement Max 25% loss from original				
	PP	2 mil	.63	58.24	Clean Peel	Meets requirement				
	ABS	PET	.88	81.99	Cohesive	Meets requirement				
	Crushed EPDM				Foam Broke	Meets requirement				
	Polyether	Rigid PP Panel			Foam Broke	Meets requirements				
9472LE	Polyester				Foam Broke	Meets requirements				
	Microcellular				Foam Broke	Meets requirements				
	Crushed EPDM				Foam Broke	Meets requirements				
	Polyether	Rigid ABS Panel			Foam Broke	Meets requirements				
	Polyester				Foam Broke	Meets requirements				
	Microcellular				Foam Broke	Meets requirements				

#### 93015LE

	Initial – 20 minutes @ 23°C / 73°F									
	Substrate	Backing	AVG Peel N/mm	AVG Peel ozf/in	Observation	Requirement 0.48 N/mm / 43.85 oz/in				
	PP	2 mil	.93	86.72	2 bond	Meets requirement				
	ABS	PET	.80	73.96	Clean Peel	Meets requirement				
	Crushed EPDM		.33	30.41	SIt foam tear	Does not meet requirement				
	Polyether	Rigid PP Panel	.45	41.46	C.P. from adhesive	Does not meet requirement				
93015LE	Polyester				Foam Broke	Meets requirements				
	Microcellular				Foam Broke	Meets requirements				
	Crushed EPDM				Foam Broke	Meets requirements				
	Polyether	Rigid ABS Panel	.42	39.04	C.P. from adhesive	Does not meet requirement				
	Polyester				Foam Broke	Meets requirements				
	Microcellular				Foam Broke	Meets requirements				

	Heat Aged – 168 hours @ 100°C / 212°F									
	Substrate	Backing	AVG Peel N/mm	AVG Peel ozf/in	Observation	Requirement max 25% loss from original				
	PP	2 mil	1.14	106.01	2 bond	Meets requirements				
	ABS	PET	.87	80.52	Clean Peel	Meets requirement				
	Crushed EPDM				Foam Broke	Meets requirements				
	Polyether	Rigid PP Panel	.50	46.40	SIt foam tear	Does not meet requirement				
93015LE	Polyester				Foam Broke	Meets requirements				
3301022	Microcellular				Foam Broke	Meets requirements				
	Crushed EPDM				Foam Broke	Meets requirements				
	Polyether	Rigid ABS Panel	.50	46.42	C.P. from adhesive	Does not meet requirement				
	Polyester				Foam Broke	Meets requirements				
	Microcellular				Foam Broke	Meets requirements				

	Environmental Cycle – 10 cycles								
	Substrate	Backing	AVG Peel N/mm	AVG Peel ozf/in	Observation	Requirement max 25% loss from original			
	PP	2 mil	.60	55.71	Clean Peel	Does not meet requirement			
	ABS	PET	.78	72.28	Clean Peel	Meets requirement			
	Crushed EPDM				Foam Broke	Meets requirements			
	Polyether	Rigid PP Panel	.39	36.01	C.P. from adhesive	Does not meet requirement			
93015LE	Polyester		.48	44.64	C.P. from adhesive	Does not meet requirement			
	Microcellular				Foam Broke	Meets requirements			
	Crushed EPDM				Foam Broke	Meets requirements			
	Polyether	Rigid ABS Panel	.39	36.01	C.P. from adhesive	Does not meet requirement			
	Polyester				Foam Broke	Meets requirements			
	Microcellular				Foam Broke	Meets requirements			

#### 6035PC/PL

	Initial – 20 minutes @ 23°C / 73°F									
	Substrate	Backing	AVG Peel N/mm	AVG Peel ozf/in	Observation	Requirement 0.48 N/mm / 43.85 oz/in				
	PP	2 mil	.58	54.04	Clean Peel	Meets requirement				
	ABS	PET	.70	64.57	Clean Peel	Meets requirement				
	Crushed EPDM				Foam Broke	Meets requirements				
	Polyether	Rigid PP panel	.81	74.81	Slight Foam Tear	Meets requirement				
6035PC/PL	Polyester				Foam Broke	Meets requirements				
	Microcellular				Foam Broke	Meets requirements				
	Crushed EPDM				Foam Broke	Meets requirements				
	Polyether	Rigid ABS panel			Foam Broke	Meets requirements				
	Polyester				Foam Broke	Meets requirements				
	Microcellular		<u> </u>		Foam Broke	Meets requirements				

	Heat Aged – 168 hours @ 100°C / 212°F									
	Substrate	Backing	AVG Peel N/mm	AVG Peel ozf/in	Observation	Requirement max 25% loss from original				
	PP	2 mil	.84	78.14	Clean Peel	Meets requirements				
	ABS	PET	.83	76.84	Clean Peel	Meets requirements				
	Crushed EPDM	Rigid PP panel	.30	27.96	C.P. from PP	Does not meet requirement				
	Polyether		.33	30.19	C.P. from PP	Does not meet requirement				
6035PC/PL	Polyester		.84	78.12	C.P. from PP	Meets requirement				
	Microcellular		.22	20.59	C.P. from PP	Does not meet requirement				
	Crushed EPDM				Foam Broke	Meets requirements				
	Polyether	Rigid ABS panel			Foam Broke	Meets requirements				
	Polyester				Foam Broke	Meets requirements				
	Microcellular				Foam Broke	Meets requirements				

	Environmental Cycle – 10 cycles								
	Substrate	Backing	AVG Peel N/mm	AVG Peel ozf/in	Observation	Requirement max 25% loss from original			
	PP	2 mil	.39	36.27	Clean Peel	Does not meet requirement			
	ABS	PET	.98	91.35	Clean Peel	Meets requirements			
	Crushed EPDM		.18	17.03	C.P. from PP	Does not meet requirement			
	Polyether	Rigid PP Plaque	.39	35.95	C.P. from PP	Does not meet requirement			
6035PC/PL	Polyester				Foam Broke	Meets requirements			
	Microcellular		.12	11.43	C.P. from PP	Does not meet requirement			
	Crushed EPDM				Foam Broke	Meets requirements			
	Polyether	Rigid ABS Plaque			Foam Broke	Meets requirements			
	Polyester				Foam Broke	Meets requirements			
	Microcellular				Foam Broke	Meets requirements			

#### 9775WL

			Initial – 20 minι	ıtes @ 23°C / 7	3°F	
	Substrate	Backing	AVG Peel N/mm	AVG Peel ozf/in	Observation	Requirement 0.48 N/mm /43.85 oz/in
	PP	2 mil	.44	41.24	Clean Peel	Does not meet requirement
	ABS	PET	.59	54.67	Clean Peel	Meets requirement
	Crushed EPDM				Foam Broke	Meets requirements
	Polyether	Rigid PP Plaque	.83	76.75	C.P. from PP	Meets requirement
9775WL	Polyester				Foam Broke	Meets requirements
	Microcellular		.14	13.36	C.P. from PP	Does not meet requirement
	Crushed EPDM				Foam Broke	Meets requirements
	Polyether	Rigid ABS Plaque			Foam Broke	Meets requirements
	Polyester				Foam Broke	Meets requirements
	Microcellular				Foam Broke	Meets requirements

		Не	eat Aged - 168	hours @ 100°C	/ 212°F	
	Substrate	Backing	AVG Peel N/mm	AVG Peel ozf/in	Observation	Requirement max 25% loss from original
	PP	2 mil	.39	36.09	Clean Peel	Meets requirements
	ABS	PET	.88	82.05	Cohesive	Meets requirements
	Crushed EPDM		.29	27.11	C.P. from PP	Does not meet requirement
	Polyether	Rigid PP Plaque	.49	45.44	C.P. from PP	Meets requirements
	Polyester		.99	91.58	C.P. from PP	Meets requirements
9775WL	Microcellular		.26	24.16	C.P. from PP	Does not meet requirement
	Crushed EPDM	Rigid ABS Plaque			Foam Broke	Meets requirements
	Polyether				Foam Broke	Meets requirements
	Polyester				Foam Broke	Meets requirements
	Microcellular				Foam Broke	Meets requirements

	Environmental Cycle – 10 cycles								
	Substrate	Backing	AVG Peel N/mm	AVG Peel ozf/in	Observation	Requirement max 25% loss from original			
	PP	2 mil	.25	23.49	Clean Peel	Does not meet requirement			
	ABS	PET	.61	56.70	Cohesive	Meets requirement			
	Crushed EPDM		.07	6.56	C.P. from PP	Does not meet requirement			
	Polyether	Rigid PP Plaque	.35	32.04	C.P. from PP	Does not meet requirement			
9775WL	Polyester				Foam Broke	Does not meet requirement			
	Microcellular		.14	12.90	C.P. from PP	Does not meet requirement			
	Crushed EPDM				Foam Broke	Meets requirements			
	Polyether	Rigid ABS			Foam Broke	Meets requirements			
	Polyester	Plaque			Foam Broke	Meets requirements			
	Microcellular				Foam Broke	Meets requirements			

#### 9832 / 9832HL

	Initial – 20 minutes @ 23°C / 73°F								
	Substrate	Backing	AVG Peel N/mm	AVG Peel ozf/in	Observation	Requirement 0.48 N/mm /43.85 oz/in			
	PP	2 mil	.24	22.37	Clean Peel	Does not meet requirement			
	ABS	PET	.35	32.76	Clean Peel	Does not meet requirement			
	Crushed EPDM		.17	15.81	Slight foam tear	Does not meet requirement			
	Polyether	Rigid PP Plaque	.45	41.33	C.P. from adhesive	Does not meet requirement			
9832	Polyester				Foam Broke	Meets requirements			
9832HL	Microcellular				Foam Broke	Meets requirements			
	Crushed EPDM		.18	16.90	Slight foam tear	Does not meet requirement			
	Polyether	Rigid ABS Plaque	.40	36.74	Foam specs	Does not meet requirement			
	Polyester				Foam Broke	Meets requirements			
	Microcellular				Foam Broke	Meets requirements			

	Heat Aged – 168 hours @ 100°C / 212°F									
	Substrate	Backing	AVG Peel N/mm	AVG Peel ozf/in	Observation	Requirement max 25% loss from original				
	PP	2 mil	.12	11.05	Clean Peel	Does not meet requirement				
	ABS	PET	.80	74.51	Clean Peel	Meets requirements				
	Crushed EPDM		.15	13.83	C.P. from PP	Does not meet requirement				
	Polyether	Rigid PP	.50	46.66	Slight foam tear	Meets requirements				
9832	Polyester	Plaque			Foam Broke	Meets requirements				
9832HL	Microcellular		0	0	C.P. from PP	Does not meet requirement				
	Crushed EPDM				Foam Broke	Meets requirements				
	Polyether	Rigid ABS	.36	33.53	Cohesive	Meets requirements				
	Polyester	Plaque	.77	71.51	C.P. from adhesive	Meets requirements				
	Microcellular				Foam Broke	Meets requirements				

	Environmental Cycle – 10 cycles								
	Substrate	Backing	AVG Peel N/mm	AVG Peel ozf/in	Observation	Requirement max 25% loss from original			
	PP	2 mil	.16	14.65	Clean Peel	Does not meet requirement			
	ABS	PET	.51	47.74	Cohesive	Meets requirements			
	Crushed EPDM		.25	23.48	C.P. from PP	Meets requirements			
	Polyether	Rigid PP Plaque	.80	74.53	SIt cohesive	Meets requirements			
9832	Polyester				Foam Broke	Meets requirements			
9832HL	Microcellular		.03	2.64	C.P. from PP	Does not meet requirements			
	Crushed EPDM				Foam Broke	Meets requirements			
	Polyether	Rigid ABS			Foam Broke	Meets requirements			
	Polyester	Plaque			Foam Broke	Meets requirements			
	Microcellular				Foam Broke	Meets requirements			

#### DCX1018

			Initial – 20 minu	tes @ 23°C / 73	3°F	
	Substrate	Backing	AVG Peel N/mm	AVG Peel ozf/in	Observation	Requirement 0.48 N/mm /43.85 oz/in
	PP	2 mil	.65	60.77	Clean Peel	Meets requirement
	ABS	PET	.75	69.99	Clean Peel	Meets requirement
	Crushed EPDM		.24	21.89	Slight foam tear	Does not meet requirement
	Polyether	Rigid PP	.25	23.64	C.P. from adhesive	Does not meet requirement
DCX1018	Polyester	Plaque			Foam Broke	Meets requirement
	Microcellular				Foam Broke	Meets requirement
	Crushed EPDM		.28	25.78	Slight foam tear	Does not meet requirement
	Polyether	Rigid ABS	.65	59.94	Foam specs	Meets requirements
	Polyester	Plaque			Foam Broke	Meets requirement
	Microcellular				Foam Broke	Meets requirement

	Heat Aged – 168 hours @ 100°C / 212°F								
	Substrate	Backing	AVG Peel N/mm	AVG Peel ozf/in	Observation	Requirement max 25% loss from original			
	PP	2 mil	.92	85.45	Clean Peel	Meets requirement			
	ABS	PET	.96	88.85	Cohesive	Meets requirement			
	Crushed EPDM				Foam Broke	Meets requirement			
	Polyether	Rigid PP	.68	63.15	Foam Specs	Meets requirement			
DCX1018	Polyester	Plaque			Foam Broke	Meets requirement			
	Microcellular				Foam Broke	Meets requirement			
	Crushed EPDM				Foam Broke	Meets requirement			
	Polyether	Rigid ABS			Foam Broke	Meets requirement			
	Polyester	Plaque			Foam Broke	Meets requirement			
	Microcellular				Foam Broke	Meets requirement			

	Environmental Cycle – 10 cycles								
	Substrate	Backing	AVG Peel N/mm	AVG Peel ozf/in	Observation	Requirement max 25% loss from original			
	PP	2 mil	.69	63.62	Clean Peel	Meets requirement			
	ABS	PET	.90	83.07	Cohesive	Meets requirement			
	Crushed EPDM				Foam Broke	Meets requirement			
	Polyether	Rigid PP Plaque			Foam Tear	Meets requirement			
DCX1018	Polyester				Foam Broke	Meets requirement			
	Microcellular				Foam Broke	Meets requirement			
	Crushed EPDM				Foam Broke	Meets requirement			
	Polyether	Rigid ABS			Foam Tear	Meets requirement			
	Polyester	Plaque			Foam Broke	Meets requirement			
	Microcellular				Foam Broke	Meets requirement			

			nitial – 20 minu	tes @ 23°C / 73	3°F	
	Substrate	Backing	AVG Peel N/mm	AVG Peel ozf/in	Observation	Requirement 0.48 N/mm /43.85 oz/in
	PP	2 mil	1.00	92.89	Cohesive	Meets requirements
	ABS	PET	.85	78.86	Cohesive	Meets requirements
	Crushed EPDM		.26	24.12	Slight foam Tear	Does not meet requirement
	Polyether	Rigid PP Plaque	.32	29.29	C.P. from foam	Does not meet requirement
950/9472	Polyester				Foam Broke	Meets requirements
	Microcellular				Foam Broke	Meets requirements
	Crushed EPDM		.26	23.77	Slight foam tear	Does not meet requirement
	Polyether	Rigid ABS	.41	37.84	C.P. from foam	Does not meet requirement
	Polyester	Plaque			Foam Broke	Meets requirements
	Microcellular				Foam Broke	Meets requirements

		Н	eat Aged – 168	hours @ 100°C	/ 212°F	
	Substrate	Backing	AVG Peel N/mm	AVG Peel ozf/in	Observation	Requirement max 25% loss from original
	PP	2 mil	1.14	105.69	Cohesive	Meets requirements
	ABS	PET	.89	82.33	C.P. from ABS	Meets requirements
	Crushed EPDM				Foam Broke	Meets requirements
	Polyether	Rigid PP Plaque			Foam Broke	Meets requirements
950/9472	Polyester				Foam Broke	Meets requirements
	Microcellular				Foam Broke	Meets requirements
	Crushed EPDM				Foam Broke	Meets requirements
	Polyether	Rigid ABS			Foam Tear	Meets requirements
	Polyester	Plaque			Foam Broke	Meets requirements
	Microcellular				Foam Broke	Meets requirements

	Environmental Cycle – 10 cycles								
	Substrate	Backing	AVG Peel N/mm	AVG Peel ozf/in	Observation	Requirement max 25% loss from original			
	PP	2 mil	.69	63.82	cohesive	Does not meet requirement			
	ABS	PET	.56	52.32	cohesive	Does not meet requirement			
	Crushed EPDM	Rigid PP Plaque			Foam Broke	Meets requirement			
	Polyether		.42	38.97	C.P. from PP	Does not meet requirement			
950/9472	Polyester				Foam Broke	Meets requirement			
	Microcellular				Foam Broke	Meets requirement			
	Crushed EPDM				Foam Broke	Meets requirement			
	Polyether	Rigid ABS			Foam Broke	Meets requirement			
	Polyester	Plaque			Foam Broke	Meets requirement			
	Microcellular				Foam Broke	Meets requirement			

	Initial – 20 minutes @ 23°C / 73°F						
	Substrate	Backing	AVG Peel N/mm	AVG Peel ozf/in	Observation	Requirement 0.48 N/mm /43.85 oz/in	
	PP	2 mil PET	.83	76.94	Cohesive	Meets requirements	
	ABS		.79	73.53	Cohesive	Meets requirements	
	Crushed EPDM	Rigid PP Plaque			Foam Broke	Meets requirements	
	Polyether		.54	49.76	Foam Specs	Meets requirements	
9627	Polyester				Foam Broke	Meets requirements	
	Microcellular				Foam Broke	Meets requirements	
	Crushed EPDM	Rigid ABS Plaque			Foam Broke	Meets requirements	
	Polyether				Foam Tear	Meets requirements	
	Polyester				Foam Broke	Meets requirements	
	Microcellular				Foam Broke	Meets requirements	

Heat Aged – 168 hours @ 100°C / 212°F						
	Substrate	Backing	AVG Peel N/mm	AVG Peel ozf/in	Observation	Requirement max 25% loss from original
	PP	2 mil PET	.84	78.34	C.P. from PP	Meets requirements
	ABS		.93	85.86	C.P. from ABS	Meets requirements
	Crushed EPDM	Rigid PP Plaque			Foam Broke	Meets requirements
9627	Polyether				Foam Broke	Meets requirements
	Polyester				Foam Broke	Meets requirements
	Microcellular				Foam Broke	Meets requirements
	Crushed EPDM	Rigid ABS Plaque			Foam Broke	Meets requirements
	Polyether				Foam Tear	Meets requirements
	Polyester				Foam Broke	Meets requirements
	Microcellular				Foam Broke	Meets requirements

Environmental Cycle – 10 cycles						
	Substrate	Backing	AVG Peel N/mm	AVG Peel ozf/in	Observation	Requirement max 25% loss from original
	PP	2 mil PET	.80	74.52	Cohesive	Meets requirements
	ABS		.66	61.19	Cohesive	Meets requirements
	Crushed EPDM	Rigid PP Plaque			Foam Broke	Meets requirements
9627	Polyether				Foam Broke	Meets requirements
	Polyester				Foam Broke	Meets requirements
	Microcellular				Foam Broke	Meets requirements
	Crushed EPDM	Rigid ABS Plaque			Foam Broke	Meets requirements
	Polyether				Foam Broke	Meets requirements
	Polyester				Foam Broke	Meets requirements
	Microcellular				Foam Broke	Meets requirements

# WSS-M99P48-A3: Foam Performance, Pressure Sensitive Adhesive Tape

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