

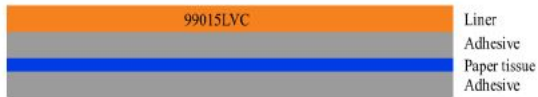
September, 2017

## 3M™ Low VOC Tape 99015LVC

### Product Description

3M™ Low VOC Tapes with Acrylic Adhesive 98010LVC and 99015LVC are designed for automotive interior applications on commonly used foam substrates, such as PU Ester and EPDM, as well as high surface energy (HSE) substrates. The pure acrylic adhesive on both thin bonding tapes is designed to be low fog and low emission to meet the VOC requirements set forth in the JAMA and VDA278 test methods used by Automotive OEM's and tier suppliers.

98010LVC is a 3.9 mil (0.10 mm) low VOC scrim reinforced transfer tape that provides good dimensional stability for large area lamination. 99015LVC is a 5.9 mil (0.15 mm) low VOC double coated tape with tissue carrier for ease of handling during lamination and excellent die-cutting characteristic.



## Technical Information Note

The following technical information and data should be considered representative or typical only and should not be used for specification purposes.

## Typical Physical Properties

Property	Values		Method	Test Name
Total Tape Thickness	5.9 mil	0.15 mm	ASTM D3652	
Liner Print	Low VOC			
Liner Thickness	3.2 mil	0.08 mm		
Adhesive Type	Acrylic			
Liner	58# Densified Kraft			
Liner Color	White with red print			Primary

## Product Testing

### JAMA Low VOC Results Tested by: SGS Institut Fresenius GmbH

Substance	98010LVC Measured VOC (µg/specimen)	99015LVC Measured VOC (µg/specimen)	VOC Targets (µg/specimen)
Formaldehyde	0.12	0.08	<0.3
Acetaldehyde	0.04	0.04	<0.3
Toluene	0.08	0.05	<0.3
Ethylbenzene	<0.04	<0.04	<0.3
Xylene (o-,m-,p-)	<0.04	<0.04	<0.7
Styrene	<0.04	<0.04	<0.3
Tetradecane	<0.04	<0.04	Report
Di-n-butyl phthalate	<0.04	<0.04	Report
Di-2-ethylhexyl phthalate	<0.04	<0.04	Report
Benzene	N/A	N/A	N/A
Acrolein	N/A	N/A	N/A

Test method:  
Sample Size: 100mm\*100mm  
Heating condition: 149°F (65°C) for 2 hours  
Gas trapping volume: 4L with Tedlar bag (TOL)  
Absorption pipe: Tenax-TA (for volatile carbon oxide), DNPH cartridge (for aldehydes)  
Absorb air in Tedlar bag with each absorption pipe after heating and measure with gas chromatograph  
mass spectrometer or high speed liquid chromatography

### VDA 278 Test Results Tested by: SGS Institut Fresenius GmbH

Test Parameter	98010LVC	99015LVC
	Measured value (µg/g)	
VOC	16	18
	15	13
FOG	89	110

## Note

Calipers are nominal values

Typical Performance Characteristics

90° Peel Adhesion		Dwell/Cure Time	Dwell Time Units	Temp C	Temp F	Substrate	Backing
13.8 N/cm	129 oz/in	72	hr	70C	158F	Stainless Steel	2 mil Aluminum Foil
55 oz/in	6 N/cm	20	min	23C	72F	Stainless Steel	2 mil PET
2.626902 N/cm	24 oz/in	20	min	23C	72F	Polypropylene (PP)	2 mil Aluminum Foil
9.52251975 N/cm	87 oz/in	20	min	23C	72F	Polycarbonate (PC)	2 mil Aluminum Foil
2.07963075 N/cm	19 oz/in	72	hr	70C	158F	Polypropylene (PP)	2 mil Aluminum Foil
1.9701765 N/cm	18 oz/in	20	min	23C	72F	ABS	2 mil Aluminum Foil
7.33343475 N/cm	67 oz/in	72	hr	70C	158F	ABS	2 mil Aluminum Foil

Property: 90° Peel Adhesion  
 Method: ASTM D3330  
 Environmental Condition: 50%RH  
 notes: 12 in/min (300 mm/min)

180° Peel Adhesion		Dwell/Cure Time	Dwell Time Units	Temp C	Temp F	Substrate
13.24396425 N/cm	121 oz/in	20	min	23C	72F	Stainless Steel
2.626902 N/cm	24 oz/in	20	min	23C	72F	Polypropylene (PP)
13.572327 N/cm	124 oz/in	20	min	23C	72F	ABS
13.7912355 N/cm	126 oz/in	72	hr	70C	158F	ABS
14.010144 N/cm	128 oz/in	20	min	23C	72F	Polycarbonate (PC)
14.010144 N/cm	128 oz/in	72	hr	70C	158F	Polycarbonate (PC)
12.258876 N/cm	112 oz/in	72	hr	70C	158F	Stainless Steel
2.73635625 N/cm	25 oz/in	72	hr	70C	158F	Polypropylene (PP)

Property: 180° Peel Adhesion  
 Method: ASTM D3330  
 Environmental Condition: 50%RH  
 Backing: 2 mil Aluminum Foil  
 notes: 12 in/min (300 mm/min)

Property	Values		Test Condition	Method	Notes
Short Term Temperature Resistance	250 °F	121 °C	Short Term (minutes, hour)		

Table continued on next page

## Typical Performance Characteristics (continued)

Property	Values		Test Condition	Method	Notes
Long Term Temperature Resistance	200 °F	93 °C	Long Term (day, weeks)		
Static Shear	10000 min		500 g @ 70°C (158°F)	ASTM D3654	1 in <sup>2</sup> sample size
Fogging (Photometric method)	97 %		1 hr	SAEJ1756	The effect of fogging condensate on the glass plate is determined by measuring the 60o specular gloss. The 60o specular gloss for the same glass plate that is free from fogging condensate and carefully cleaned before the test is used as a reference value. The higher value indicates less fogging.
Fogging (Photometric method)	98 %		16 hr	SAEJ1756	The effect of fogging condensate on the glass plate is determined by measuring the 60o specular gloss. The 60o specular gloss for the same glass plate that is free from fogging condensate and carefully cleaned before the test is used as a reference value. The higher value indicates less fogging.

## Available Sizes

Property	Values		Notes
Master Width	1000, 1372, 1500 mm	39, 54, 59 in	More sizes may be available. Please talk to your local 3M representative for more information.

## Handling/Application Information

## Application Examples

- Automotive interior bonding
- Door trim and door bolster attachment
- Foam, flock and felt for BSR applications
- Gaskets and seals
- Headliner component and shade attachment
- Acoustic/Thinsulate™ attachment

## Storage and Shelf Life

It is suggested that products are stored at room temperature conditions of 70°F (21°C) and 50% relative humidity. Out of direct sunlight. If stored properly, product retains its performance and properties for 24 months from date of manufacture.

## Trademarks

3M and Thinsulate are trademarks of 3M Company

## References

Property	Values
3m.com Product Page	<a href="https://www.3m.com/3M/en_US/company-us/all-3m-products/~ /3M-Low-VOC-Double-Coated-Tissue-Tape-99015LVCX/?N=5002385+3291849576&amp;rt=rud">https://www.3m.com/3M/en_US/company-us/all-3m-products/~ /3M-Low-VOC-Double-Coated-Tissue-Tape-99015LVCX/?N=5002385+3291849576&amp;rt=rud</a>
Safety Data Sheet SDS	<a href="https://www.3m.com/3M/en_US/company-us/SDS-search/results/?gsaAction=msdsSRA&amp;msdsLocale=en_US&amp;co=ptn&amp;q=99015LVC">https://www.3m.com/3M/en_US/company-us/SDS-search/results/?gsaAction=msdsSRA&amp;msdsLocale=en_US&amp;co=ptn&amp;q=99015LVC</a>

## Family Group

	98010LVC	99015LVC
Long Term Temperature Resistance (°F) Test Condition: Long Term (day, weeks)	200	200
Short Term Temperature Resistance (°C) Test Condition: Short Term (minutes, hour)	121.1111	121.1111
Liner Color Test Name: Primary	White with red print	White with red print
Long Term Temperature Resistance (°C) Test Condition: Long Term (day, weeks)	93.33333	93.33333
Total Tape Thickness (mm)	0.1	0.15
Adhesive Type	Acrylic	Acrylic
Liner	58# Densified Kraft	58# Densified Kraft
Liner Thickness (mm)	0.08	0.08

## ISO Statement

This Industrial Adhesives and Tapes Division product was manufactured under a 3M quality system registered to ISO 9001 standards.

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