Low VOC Tapes with Acrylic Adhesive

98010LVC 99015LVC

Product Data Sheet

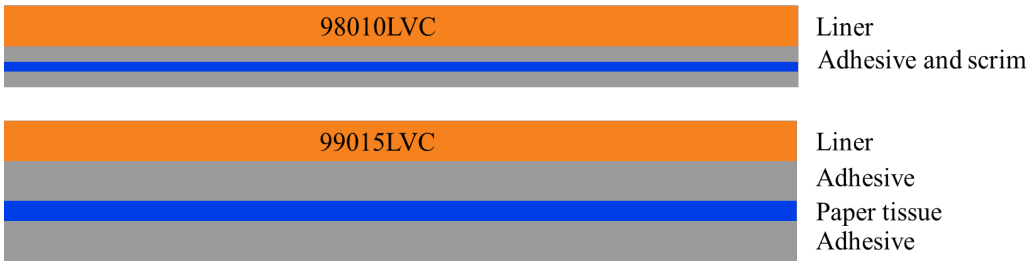
Date: July 2016
Supersedes: April 2016

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) and low surface energy (LSE) substrates. The pure acrylic adhesive on both thin bonding tapes is designed to be low fog and low emission as determined by the JAMA and VDA278 test methods used by Automotive OEM's and tier suppliers.

98010LVC is a 100 µm low VOC scrim reinforced transfer tape that provides good dimensional stability for large area lamination. 99015LVC is a 150 µm low VOC double coated tape with tissue carrier for ease of handling during lamination and excellent die-cutting characteristics.

Construction Information



Construction Information

Product	Adhesive Caliper (mm)	Liner Type	Liner Thickness (mm)	Liner Color and Print
98010LVC	0.10 mm	90 g Densified Kraft paper	0.08 mm	
99015LVC	0.15 mm	90g Densified Kraft paper	0.08 mm	

Product Testing

JAMA Low VOC Results (examplary)
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 (10L)
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

Product Testing

VDA 278 Test Results (examplary)
Tested by: SGS Institute Fresenius GmbH

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

Typical Physical Properties and Performance Characteristics

I. Adhesion Peel:
AFERA 5001/ ASTM D-3330 (Modified: 2 mil aluminum foil backer), Peel Speed = 300 mm/min

a. **Metal (Stainless Steel)**

	20 min dwell		**72 hours dwell @ 70ºC**	
Product	90^0 Peel	180^0 Peel	90^0 Peel	180^0 Peel
98010LVC	11 N/25 mm	22 N/25 mm	29 N/25 mm	22 N/25 mm
99015LVC	15 N/25 mm	34 N/25 mm	36 N/25 mm	31 N/25 mm

b. **Polypropylene**

	20 min dwell		**72 hours dwell @ 70ºC**	
Product	90^0 Peel	180^0 Peel	90^0 Peel	180^0 Peel
98010LVC	5 N/25 mm	4 N/25 mm	5 N/25 mm	4 N/25 mm
99015LVC	7 N/25 mm	7 N/25 mm	5 N/25 mm	7 N/25 mm

c. **ABS**

	20 min dwell		**72 hours dwell @ 70ºC**	
Product	90^0 Peel	180^0 Peel	90^0 Peel	180^0 Peel
98010LVC	4 N/25 mm	10 N/25 mm	14 N/25 mm	13 N/25 mm
99015LVC	5 N/25 mm	34 N/25 mm	19 N/25 mm	35 N/25 mm

Temperature Resistance

Long term (days, weeks): 90°C
Short term (minutes, hours): 120°C

Typical Physical Properties and Performance Characteristics

II. Static Shear Strength (minutes), ASTM D-3654
Size: 25mm x 25 mm
Weight: 500 grams

	Dwell time: 24hr @ RT (tested at 70^{0}C)	
	98010LVC	99015LVC
SS	10,000	10,000

Static Shear Strength (minutes), ASTM D-3654
Size: 25mm x 25 mm
Weight: 300 grams

	Dwell time: 24hr @ RT (tested at 90^{0}C)	
	98010LVC	99015LVC
SS	10,000	10,000

III. Fogging (Photometric method)
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.

	Testing Results			
	98010LVC		**99015LVC**	
	1 hour	16 hours	1 hour	16 hours
SAEJ1756	92%	94%	97%	98%

Environmental Performance

Humidity Resistance – High humidity has a minimal effect on adhesive performance. Bond strength (is generally higher/shows no significant reduction) after exposure for 7 days at 32^{0}C and 90% relative humidity.

Bond Build-up - The bond strength of 3M™ Low VOC tape increases as a function of time and temperature on high energy surfaces.

Application Ideas	• 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 & Shelf Life	Store at 16-25 °C and 40-65 % relative humidity in original carton out of sunlight. If stored properly, product retains its performance and properties for 18 months from date of manufacturing.
Precautionary Information	To request additional product information or to arrange for sales assistance, call…… Address correspondence to: 3M
For Additional Information	To request additional product information or to arrange for sales assistance, call…… Address correspondence to: 3M
Important Notice	All statements, technical information and recommendations contained in this document are based upon tests or experience that 3M believes are reliable. However, many factors beyond 3M's control can affect the use and performance of a 3M product in a particular application, including the conditions under which the product is used and the time and environmental conditions in which the product is expected to perform. Since these factors are uniquely within the user's knowledge and control, it is essential that the user evaluate the 3M product to determine whether it is fit for a particular purpose and suitable for the user's method or application. All questions of liability relating to this product are governed by the terms of the sale subject, where applicable, to the prevailing law

Values presented have been determined by standard test methods and are average values not to be used for specification purposes. Our recommendations on the use of our products are based on tests believed to be reliable but we would ask that you conduct your own tests to determine their suitability for your applications. This is because 3M cannot accept any responsibility or liability direct or consequential for loss or damage caused as a result of our recommendations

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