

## Reaction to fire testing of Avery Dennison® 777 Cast Film Ignitability test according to EN ISO 11925-2:2010

Report no.	2013-Efectis-R0367a
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## 1. PRODUCT IDENTIFICATION

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Avery Dennison® 777 Cast Film, further referred to as 'the product'.

## 2. ABSTRACT

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Determination of the **ignitability** properties of the product, by **direct small flame impingement** according to EN ISO 11925-2:2010, with the objective to obtain the reaction to fire classification according to EN 13501-1:2007+A1:2009.

## 3. DETAILS OF THE PRODUCT TESTED

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### 3.1. INTENDED APPLICATION

The product will be used as a wall covering.

### 3.2. MANUFACTURER/IMPORTER

Avery Dennison  
Graphics & Reflective Solutions  
P.O. Box 118  
2394 ZG HAZERSWOUDE  
THE NETHERLANDS

### 3.3. PRODUCT DESCRIPTION

According to the sponsor the product is composed of:

- Face film: 60 micron cast vinyl
- Adhesive: permanent, acrylic based, 25 µm
- Backing paper: one side coated white craft paper, 137 g/m<sup>2</sup>

The product, excluding backing paper, has a total thickness of 85 µm.

See Product Data Sheets on the pages 5 and 6.

## 4. DETAILS OF THE EXAMINATION

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### 4.1. SAMPLES

Sampling procedure	The samples were submitted by the sponsor.
Age	At the time of receipt: no information received.
Date of receipt	June 26, 2013

#### 4.2. SPECIMEN PREPARATION

Substrate used	Steel sheet, thickness approx. 1.2 mm (class A1/A2 according to EN 13238:2010)
Method of fixing	The product was glued to the substrate using the permanent adhesive of the product.
Date of preparation	October 3, 2103

#### 4.3. CONDITIONING

Prior to the examinations, the specimens were conditioned over a period of 2 weeks at a temperature of  $(23 \pm 2)$  °C and a relative humidity of  $(50 \pm 5)$  % according to § 4.1 of EN 13238:2010.

#### 4.4. EXAMINATION

Number of tests	A total of twelve single ignitability tests were carried out according to EN ISO 11925-2.
Deviations from the test method	None
Harmonised Product Standard	At the time of examination of the product, the sponsor was not aware of a related existing Harmonised Product Standard.
Date of examination	October 25, 2013

The results are given in Table 1.

### 5. CONCLUSIONS

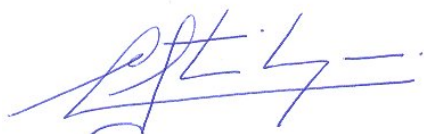
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A formal classification is to be assessed in accordance with EN 13501-1, "Fire classification of construction products and building elements - Part 1: Classification using data from reaction to fire tests".

#### Remarks:

The test results relate to the behaviour of the test specimens of a product under the particular conditions of the test; they are not intended to be the sole criterion for assessing the potential fire hazard of the product in use.

Regarding the precision of the test method, following Annex B of EN ISO 11925-2, the absolute repeatability/reproducibility for this test method is estimated to lie within 3 s to 5 s for all times measured.



C.C.M. Steinhage B.Sc.  
Project leader reaction to fire



A.J. Lock  
Project leader reaction to fire

APPENDIX: RESULTS

Table 1: Ignitability classification parameter results

Flame application time: 30 s					
Sample	Ignition of sample	Maximum flame height	$t_{150}$	Afterburning time	Ignition of filter Paper
	{Y=Yes/N=No}	[mm]	[s]	[s]	{Y=Yes/N=No}
Surface ignition					
1	N	25	not reached	0	N
2	N	25		0	N
3	N	25		0	N
4	N	25		0	N
5	N	25		0	N
6	N	25		0	N
Average		25			
Classification parameters		150 mm not reached within 60 s			N
Edge ignition					
1	N	15	not reached	0	N
2	N	20		0	N
3	N	17		0	N
4	N	15		0	N
5	N	15		0	N
6	N	20		0	N
Average		17			
Classification parameters		150 mm not reached within 60 s			N

Observations of physical behaviour of the test specimen: None

## APPENDIX: PRODUCT DATA SHEET

### PRODUCT DATA SHEET



### Avery Dennison® 777 Cast Film

issued: 03-07-2013

#### Introduction

Avery Dennison 777 Cast Films are a signmaker's everyday answer for all kinds of quality signage, indoors and outdoors – including applications over rivets and corrugations, and jobs requiring applied durability of up to 8 years\*.

Avery Dennison 777 Cast Films are available in a very extensive range of standard colors, including gloss, matt and metallic. All the colors are based on organic pigments, REACH compliant.

#### Description

Facefilm: 60 micron cast vinyl  
Adhesive: permanent, acrylic based  
Backing paper: one side coated white kraft paper, 137 g/m<sup>2</sup>

#### Conversion

Avery Dennison 777 Cast Film offers good weeding and cutting performance on a wide range of computer signmaking equipment. Avery Dennison 777 Cast Film can be thermal transfer printed.

#### Features

- Very good conformability to rivets and corrugations.
- Very good layflatness and stability during cutting and weeding.
- Very good durability and outdoor performance\*\*.
- High gloss appearance.
- Outstanding choice of colours and finishes.
- Excellent dimensional stability during use and application.

Avery Dennison 777 Cast Film White and White Matt are manufactured on a blue contrast backing paper for ease of conversion.

#### Recommendations for use

- Avery Dennison 777 Cast Films offer a wide range of colours for:
- Graphics on rigid-sided vehicles.
  - Graphics on boats and sport vehicles.
  - Directional signage.
  - Window graphics.
  - Retail signage.
  - Outdoor advertising.
  - Point-of-sale and promotional uses.

\*Depending on the color, application and exposure conditions as further described in this Product data Sheet. Not applicable for horizontal use.

\*\*Under recommended use and exposure conditions. Not for horizontal use.

**PRODUCT CHARACTERISTICS**

Avery® 777 Cast Film

**Physical properties**

Features	Test method <sup>1</sup>	Results
Caliper, facefilm	ISO 534	60 micron
Caliper, facefilm + adhesive	ISO 534	85 micron
Gloss (except for matt)	ISO 2813, 20°	50%
Dimensional stability	DIN 30646	0.20 mm. max
Elongation at break	DIN 53445	120%
Adhesion, initial	FINAT FTM-1, stainless steel	400 N/m
Adhesion, ultimate	FINAT FTM-1, stainless steel	600 N/m
Flammability		self-extinguishing
Accelerated ageing	SAE J 2527, 2000hr	No negative impact on film performance
Shelf life	Stored at 22° C/50-55 % RH	2 years
Durability <sup>2</sup>	Vertical exposure only, not for horizontal use	
Black & White		up to 8 years
All Colors & Transparent		up to 7 years
Metallic		up to 5 years

**Temperature range**

Features	Results
Application temperature	Minimum: +10° C
Temperature range	-40° to + 110 °C

**Chemical resistance**

Features	Test method <sup>1</sup>	Results
Humidity resistance	200 hours exposure	No effect
Saltspray resistance	120 hours exposure	No effect
Water resistance	48 hours immersion	No effect

**Important**

Information on physical and chemical characteristics is based upon tests we believe to be reliable. The values listed herein are typical values and are not for use in specifications. They are intended only as a source of information and are given without guarantee and do not constitute a warranty. Purchasers should independently determine, prior to use, the suitability of this material to their specific use. All technical data are subject to change.

**Warranty**

Avery® branded materials are manufactured under careful quality control and are warranted to be free from defect in material and workmanship. Any material shown to our satisfaction to be defective at the time of sale will be replaced without charge or the price of the material will be refunded, at our option. Our aggregate liability to the purchaser shall in no circumstances exceed the purchase price of the materials shown to be defective. No salesman, representative or agent is authorised to give any guarantee, warranty, or make any representation contrary to the foregoing. All Avery® branded materials are sold subject to the above conditions, being part of our standard conditions of sale, a copy of which is available on request.

**1) Test methods**

More information about our test methods can be found on our website.

**2) Durability**

The durability is based on middle European exposure conditions and on vertical use only. Actual performance life will depend on substrate preparation, exposure conditions and maintenance of the marking. For instance, in the case of signs facing south; in areas of long high temperature exposure such as southern European countries; in industrially polluted areas or high altitudes, exterior performance will be decreased.