Lasermarkable Label Stock 7846, 7847, 7848

Product Data Sheet

May 2016
Supersedes: May 2015

Product Description

3M™ Lasermarkable films are speciality film stock materials that can be inscribed by a laser beam – which is designed to ablate the top layer off to create an inverse image. Since the laser is also able to cut the entire label, it provides high flexibility for producing just in time various formats.

Physical Properties

(Calipers are nominal values)

	7846	7847	7848
Facestock Top Layer **Face Stock Base Layer** **Thickness**	Gloss black White 60 µm	Matt black White 60 µm	Matt silver Black 60 µm
Adhesive	22 micron #350 Hi-Holding		
Liner	75 micron, Densified Kraft (glassine)		

Thickness tested by using Afera 5006 (8.edition)

Key Features

- Markable with all ND-YAG and CO2 laser marking equipment on the market.
- Two layer construction and engraved inscription provide long-term readability, abrasion resistance and excellent image contrast
- #350 modified acrylic adhesive offers good adhesion on LSE/HSE plastics with high initial tack

Application Ideas

- Durable good marking
- Depending on specific application 3M™ Lasermarkable films also can be used for tamper-indication. In most cases, labels cannot be transferred without damage once they have been applied.

Performance Characteristics

Standard Test Conditions are 23ºC and 50% Relative Humidity

180º Peel Adhesion tested using FINAT Test Procedure FTM 1 (300mm/min)*
90ºPeel Adhesion tested using FINAT Test Procedure FTM 2 (300mm/min)*

Adhesion	**20 Minutes at Standard Conditions**		**72 Hours at Standard Conditions**	
	180º Peel N/25mm	**90º Peel** N/25mm	**180º Peel** N/25mm	**90º Peel** N/25mm
Stainless Steel*	28	15	34	19
ABS*	25	14	27	16
Polycarbonate*	28	13	25	16
Polypropylene*	21	7	25	12

*= laminated by itself

Adhesion	**72 Hours at 70ºC**		**72 Hours at - 40ºC**	
	180º Peel N/25mm	90º Peel N/25mm	180º Peel N/25mm	90º Peel N/25mm
Stainless Steel*	35	22	32	17

Adhesion	**72 Hours at 40ºC and 95% RH**	
	180º Peel N/25mm	90º Peel N/25mm
Stainless Steel*	30	17

Tensile Strength and Elongation
* tested using Afera Test Procedures Afera 5004 (8. edition)

	Unit	Result
Tensile Strength	at Fmax (N/25mm)	71
Elongation	at Fmax (%)	5

Resistance to Chemicals and Solvents
*Tested on Aluminium. Results 1h after Reconditioning
*Other solvents need to be tested.

Substance	Exposure Time	Result
n-Heptane	4h	No change
Isopropanol	1h	No significant change
Brake fluid Dot4	1h	No change
Diesel	4h	No change

*Temperature resistance of label applied to Aluminium.
* Other substrates should be tested as per application

Temperature Resistance	*-40°C – 190°C no change * from 200°C up to 250°C colour starts to change

*Salt Water resistance of label applied to Aluminium.
* Other substrates should be tested as per application

Spraying with Salt Water (DIN 50021SS)	150h no change

* UV resistance of label applied to Aluminium.
* Other substrates should be tested as per application

QUV (DIN EN ISO 4892-3; Typ 1A)	2000h no change

Processing

Printing:

When using press printing methods, we recommend pre-printing tests to check ink properties, i.e. flexographic, screen letterpress etc. prior to use.

Laser Marking/Cutting:

3M™ Laser markable Label stock 7848 can be marked and cut with all ND-Yag laser marking equipment on the market.

In order to optimise optical results we recommend individually adjusting marking parameters (power, pulse, rate, speed) to specific requirements depending on the kind of label to be produced (BARCODES or characters)

During laser marking we recommend operating an exhaust system to reduce emissions caused by laser marking-

For more information about emissions during the laser marking process with 3M™ 7848, please contact our safety, Security, Environmental Protection and Assurance Division in Neuss, Germany (Phone: +49-2131-14-2041)

Special Considerations	For maximum bond strength, the surface must be clean and dry. Isopropyl alcohol is a typical cleaning solvent. **NOTE:** When using solvents, read and follow the manufacturer's precautions and directions for use. For best bonding conditions, application surface should be higher than 20°C. Low temperature surfaces (below 5°C) can cause the adhesive to become so firm that it will not develop maximum contact with the substrate. Higher initial bonds can be achieved through increased rubdown pressure.
Storage	Store product at temperature conditions between 15°C and 25°C and 40% - 60% relative humidity.
Shelf Life	24 months from date of manufacture by 3M when stored as recommended in cool, dry and sun protected room.
For Additional Information	For additional product information, please contact us at the address here below.
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.

Suomen 3M Oy
Teollisuustuotteet

PL 600
Keilaranta 6
02151 Espoo
Puh: 09-525 21
Fax: 09-525 2279
http://www.3M.fi/teollisuus