Laser Markable Label Stock 7846

Product Data Sheet

Updated : July 2000
Supersedes : October 1998

Product Description

7846 label stock is a specialty film stock 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
Not for specification purposes

Facestock Top Layer	12 micron (0.47thou) Gloss black
Facestock Base Layer	50 micron (2.0 thou) White Acrylate
Adhesive	30 micron (1.2 thou) #350 Hi-Holding
Liner	80 micron (3.2 thou) Densified Kraft (glassine)
Shelf Life	24 months from date of manufacture by 3M if stored at room temperature condition in cool, dry and sun protected room.

Features:

- Modified Acrylate facestock for long-term durability and excellent temperature, chemical resistance; excellent convertibility (kiss cutting)
- Markable with all Nd-YAG laser marking equipment available on the market.
- Matte surface provides good printability resulting in 100% bar code readability.
- Two-layer construction and engraved inscription provide long-term readability, abrasion resistance and excellent image contrast.
- Brittle facestock material provides destructibility to meet security labelling requirements.
- #350 modified acrylic adhesive offers good adhesion on LSE/HSE plastics with high initial tack.
- UL-approval : File No. MH16411
- CSA-approval : File No. 99316

Application Ideas:

- Durable goods marking.
- Depending on the specific application 3M 7846 also can be used for tamper-indication. In most cases, labels cannot be transferred without damage once they have been applied.

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Product Availability

Laser Markable Labelstock 7846 is available as roll material, If pre-cut labels are requested 3M will recommend several converters specialised in the production of various formats. If no equipment for laser marking is available, 3M can provide, if desired, names of companies which have the necessary laser marking capability.

3M also provide information concerning laser equipment manufacturers if in-house marking is required.

Physical Properties
Not for specification purposes

Minimum Application Temperature	**+ 4℃**
Weight per m² (film & adhesive)	90 - 100 g/m²
Elongation at Break	approx. 10 %
Tensile Strength	min 25 N/25.4mm
Elongation at Break and Tensile Strength have been tested according to DIN 53455/ISO 527, 300 mm/min.	
Spraying with Salt Water	168 h / 5% concentration / 35℃ - No Change

Adhesive Performance / Bond Strength
Not for specification purposes

Measured according to DIN 306-46, part 1 (jaw separation speed 300mm/min., at 180℃ angle, film width: 25.4mm). Adhesive performance for the individual case can depend on the texture of the substrate surface. The above adhesive values are average values. They are not appropriate for specifications.

Substrate	**N/25.4 mm**
Afera Steel	30
Aluminium	30
Polycarbonate	25
ABS	28
PVC	30
Polyethylene	18

Resistance to Chemicals and Solvents

Substance	**Exposure Time**	**Result**
Distilled Water @ 65℃	390 hours	No Change
SAE 20 motor oil at 25℃	250 hours	No Change
Sodium hydroxide solution	200 hours	No Change
Sulphuric Acid (30%)	300 hours	No Change
Petrol (lead free ordinary)	1 hour	No Change
95% Relative Humidity @ 38℃	250 hours	No Change

Resistance to Abrasion

Abrasion test Tabor/Abrader (applied to Aluminium), CS 10 wheels, 500g per wheel up to 300 cycles : No Change

Weather Resistance

Acceleration test in the Xenon device 2000 hrs according to DIN 53387 : No change

Temperature Resistance	300℃ for 1 min. 250℃ for 7 days 150℃ for 14 days	Dimensional Stability : No Change
Low Temperature Resistance	Without Stress -60℃ With Stress -30℃ (tested according to Gardner Impact Test)	No Change No Change

Humidity Resistance	3 days at 32ºC (90ºF) and 90% relative humidity	No Change
	3 days at -40ºC (-40ºF)	No Change

Processing

PRINTING

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

CONVERTING

Laser Marking/Cutting:

3M™ Laser Markable Label Stock 7846 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 (BAR CODES or characters).

During laser marking we recommend operating an exhaust system combined with an activated charcoal filter to reduce emissions caused by laser marking.

For more information about emissions arising during the laser marking process with 3M 7846, please contact our division Safety, Security, Environmental Protection and Product Assurance in Neuss, Germany (Phone: 49-2131-14-2042).

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Warranty & Liability

All information above is based in our present experience with the material. Prior to the use of the product by the customer it is his responsibility to test whether it is suitable for the intended application, always considering all relevant factors that might affect this application.

All warranty and liability issues including the warranty period for this product will be settled on the basis of our general trade conditions valid at the time, except if there are legal regulations which stipulate different proceedings.

3M does not assume warranty and liability for the converting of the films.

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.

3M

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