Polyacrylic - 3M ™ 7847

IUID PRODUCT LINE

3M™ 7847 laser-etched polyacrylic label stock is excellent for barcode applications that require high-contrast images, reliable readability, durability and flexibility. It is highly resistant to thermal shock and temperature extremes, stands up to abrasion, grease and oil and is virtually impervious to all but the most caustic solvents and chemicals. Polyacrylic is an economical two-layer acrylic film that is in the same composition family as Kevlar® and Lexan®, so it makes for an exceptionally robust asset tag. Halogen-free with strong adhesion to LSE plastics, 3M 7847 polyacrylic label stock material helps resist forgery and is virtually indestructible on many surfaces. Application is easy and quick - just peel and stick. No rivets or screws required.

The two-layer construction consists of a black top layer bonded to the white base layer to form a strong homogeneous unit. A modified acrylic adhesive provides excellent grip, even on low-energy surfaces such as polypropylene. Proven and MIL STD 130-compliant, polyacrylic label stock delivers outstanding long-term performance you can rely on in multiple marking applications.

Material and Design Specifications

- Material: Cast Modified Acrylate - 0.003" (0.07 mm) thick
- Color: Black with white print
- High-grade polyacrylic material
- Laser etch print method
- Product Form: Continuous die cut labels on rolls or cut to a specified sheet size
- Shelf Life - If stored at room temperature conditions in cool, dry and sun-protected rooms, the product retains its performance and properties for up to two years from the date of manufacture.

Permanent Adhesion To:

- Metal
- HSE plastic
- LSE plastic
- Powder coats

Key Features

The cast modified polyacrylate facestock has a matte surface that can be marked with a CO_2 or YaG laser, and is available in custom sizes and shapes. Here's what you get:

- Long-term durability
- Excellent abrasion, temperature, chemical and environmental resistance
- High-resolution, high-contrast label images
- Good printability and excellent barcode readability
- Permanent adhesion to LSE plastics, oily metals, powder coatings and textured surfaces

Applications

- Durable goods marking
- Asset labels
- Under-hood labels
- Security labels
- Barcode labels
- Information labels with 2-D symbologies
- Process labeling in-plant
- IUID

Environmental Specifications

- Operating Temperature Range: -40° F to +392° F (-40 to +200° C)
- Minimum Application Temperature: 39° F (3.9° C)
- Chemical Resistance: High resistance to solvents, medium resistance to plasticizer
- UV Resistance: Up to 5 years
- Climatic and Weather Resistance: High resistance to moisture

Liner:

- Liner Thickness: 0.003" (0.08 mm)
- Liner Type: Densified kraft
- Liner Weight: 55 #

Test Results

These tests were conducted for a limited period in strict laboratory conditions. To achieve maximum satisfaction, we highly recommend any customer considering use of this product test the labels in the environment in which they will be used.

Resistance to Chemicals and Solvents: Samples applied to glass panels, allowed to wet out for 72+ hours, immersed in chemicals below. Ambient room temperature conditions											
Sample (Immersion Time)	Water	Salt Water	Bathroom Cleaner	Glass Cleaner	Isopropanol 99%	Brake Fluid DOT 3	Acetone	Diesel Fuel	Nitric Acid	Hydrochloric Acid	Sodium Hydroxide
3M 7847 (2 hours)	NE	NE	NE	NE	AO-ER	NE	TW	AO, ER	NE	NE	NE
3M 7847 (24 hours)	NE	NE	NE	NE	TW, AL	TW	TW	AO, ER	NE	NE	NE
3M 7847 (48 hours)	NE	NE	NE	NE	TW, AL	TW	TW	AO, ER	NE	NE	NE
Key: NE = No Effect, AO = Adhesive Ooze, AL = Loss of Adhesion to Glass Panel, TD = Tag Delaminated, PE = Print Erosion Under Laminate, ER = Adhesive Edge Erosion, TW = Tag Wrinkled											

Resistance to Extreme Temperatures:		
Temperature	-40° F (-40° C)	450° F (232.2° C)
Exposure Period	24 Hours	1 Hour (Max Temp. Exposure)
Change	NE	NE
Key: NE = No Effect		

Abrasion Resistance		
Test	Strokes	Result
Taber/Abraser: CS-10 abrading wheels, 500 gram per wheel load	900	NE
Key: NE = No Effect		

Adhesion Test Results		
Adhesion	Performance/Bond Strength	Performance/Bond Strength
Stainless steel	108 oz/inch	30 N/inch
Aluminum	108 oz/inch	30 N/inch
Polypropylene	72 oz/inch	20 N/inch
Polyethylene	64 oz/inch	18 N/inch
Polycarbonate	90 oz/inch	25 N/inch
ABS	101 oz/inch	28 N/inch
PVC	108 oz/inch	30 N/inch

*Measured according to DIN 306446, Part 1 (300 mm/mm at 180° angle, film width: 25.4 mm). Adhesive performance for each case can depend on the texture of the surface. The above adhesive values are average values. They are not appropriate for specifications.

Installation Instructions

1. Clean the surface using Isopropyl alcohol, alcohol pad or equivalent solvent to ensure surface is free from dirt, dust, oil and misc. debris that may affect adhesion.
2. Handle the tag by edges, peel release liner from back ensuring not to touch the adhesive.
3. Place the tag in desired tagging location and firmly apply even pressure to the tag for 5 seconds.
4. Do not disturb the newly mounted tag for at least 72 hours to ensure proper adhesive seating.