Technical Data Sheet

BRADY B-732A GLOSSY WHITE LASER MARKABLE POLYIMIDE LABEL STOCK

TDS No. B-732A
Effective Date: 09/05/2019

Description:
GENERAL
Print Technology: Laser Markable
Material Type: Topcoated 1.0 mil polyimide film
Finish: Glossy White
Adhesive: Permanent Acrylic

APPLICATIONS
B-732A is designed to meet the requirements for pre-process labeling of printed circuit boards and electronic components when marked with standard IR lasers. The product can be used for auto-dispensing applications and can meet small font requirements when used with a high resolution laser marking system.

RECOMMENDED LASER SPECIFICATIONS
IR Laser systems operating at 20 W or greater are recommended for this product when operating at near to mid IR regions. Typical systems are classified as Class IV lasers and include CO_2 lasers operating between 9.6 and 10.6µm. These systems will all produce strong contrasting marks when using appropriate power and writing speeds.

REGULATORY/AGENCY APPROVALS
UL: B-732A **i**s a UL Recognized Component to UL969 Labeling and Marking Standard when marked with an IR laser. See UL file MH17154 for specific details. UL information can be accessed on line at UL.com in the UL Product iQ area.

For information on the Weee-RoHS compliance status for a Brady Product go to one of the following websites:
In Canada: www.bradycanada.ca/weee-rohs
In Europe: www.bradyeurope.com/rohs
In Japan: www.brady.co.jp/products/labelsuse/rohs
All other regions: www.bradyid.com/weee-rohs

SPECIAL FEATURES
B-732A meets the requirements of MIL-STD-202G, Method 215K.

B-732A is designed to withstand multiple cycles of harsh condition washes for printed circuit boards.

Details:

PHYSICAL PROPERTIES	TEST METHODS	TYPICAL RESULTS
Thickness	ASTM D1000 -Substrate (topcoated film) -Adhesive -Total (excluding liner)	 0.0036 inch (0.091 mm) 0.0010 inch (0.025 mm) 0.0046 inch (0.116 mm)
Adhesion to: -Stainless Steel -Epoxy PC Board	ASTM D1000 20 minute dwell 24 hour dwell 20 minute dwell 24 hour dwell	 42 oz/in (46 N/100 mm) 61 oz/in (67 N/100 mm) 34 oz/in (37 N/100 mm) 46 oz/in (50 N/100 mm)
Drop Shear	PSTC-7 ½" x 1"	> 50 hours
Dielectric Strength	ASTM D1000	11,500 volts

Performance properties tested on B-732A samples that were laser marked using a 20 W CO_2 laser marking system. Laser marked B-732A samples were laminated to aluminum and allowed to dwell 24 hours before exposure to the indicated environmental conditions.

PERFORMANCE PROPERTIES	TEST METHODS	TYPICAL RESULTS
Short Term High Service Temperature	80 seconds at various temperatures	At 285°C very slight discoloration; white topcoat starting to shrink from edge. At 270°C, there is no noticeable shrinkage of white nor discoloration.
	5 minutes at various temperatures	At 260°C very slight shrinkage of white topcoat and several areas of pitting. More shrinkage and slight discoloration at 270°C.
	2 hours at various temperatures	No effect at 170°C; slight discoloration and pitting at 220°C (but no shrinkage).
Long Term High Service Temperature	1000 hours at 100°C (212°F)	No visible effect to label or printed image
Low Service Temperature	1000 hours at -94°F (-70°C)	No visible effect to label or printed image
Humidity Resistance	1000 hours at 100°F (38°C)/95%RH	No visible effect to label or printed image
UV Light Resistance	ASTM G155, cycle 1, Dry 1000 hours in Q-Sun Xenon Test Chamber	No visible effect to label or printed image
Weatherability*	ASTM G155, Cycle 1 1000 hours in Xenon arc Weather-Ometer®	No visible effect to label or printed image
Salt Fog Resistance	ASTM B117 1000 hours in 5% salt fog solution chamber	No visible effect to label or printed image
Abrasion Resistance	Taber Abraser, CS-10 grinding wheels, 500 g/arm (Fed. Std. 191A, Method 5306	Print legible after 900 cycles
Chemical Vapor Phase Resistance	Labels adhered to epoxy PC board and exposed to the vapor of the boiling chemical for 10 minutes and then rubbed with a cotton swab saturated with the chemical for 10 rubs Ionox® 3955 Micronox® MX2501	 Slight smear of printed image after rub No visible effect to label or printed image

*B-732A is not recommended for outdoor use.

PERFORMANCE PROPERTY	CHEMICAL RESISTANCE

B-732A samples were laser marked using a 20 W CO_2 laser marking system, then laminated to FR-4 epoxy PC board. After 24 hr dwell, test samples were immersed in the test fluids for 10 minutes, then rubbed 10 times with a cotton swab saturated with the test fluid.

CHEMICAL REAGENT	SUBJECTIVE OBSERVATION OF VISUAL CHANGE		
	EFFECT TO LABEL	LASER MARKED IMAGE	
		WITHOUT RUB	WITH RUB
Kyzen Corp. 15% Aquanox® A4625 at 140°F (60°C)	No visible effect	1	1
Kyzen Corp. 17% Aquanox® A4520 at 140°F (60°C)	No visible effect	1	1

Kyzen Corp. 10% Aquanox® A4638 at 150°F (65°C)	No visible effect	1	1
Kyzen Corp. 20% Aquanox® A4703 at 145°F (63°C)	No visible effect	1	1
Zestron, 15% Atron® AC205 at 150°F (65°C)	No visible effect	1	1
Zestron, 15% Atron® AC207 at 150°F (65°C)	No visible effect	1	1
Zestron, 15% Vigon® A201 at 150°F (65°C)	No visible effect	1	1
Zestron, 15% Vigon® N600 at 150°F (65°C)	No visible effect	1	1
Isopropyl Alcohol 99% at 180°F (82°C)	No visible effect	1	1
Deionized water at 212°F (100°C)	No visible effect	1	1

Rating Scale:
1=no visible effect
2=slight smear or print removal, detectable but minimal smear
3=moderate smear or print removal (print still legible)
4=severe smear or print removal (print illegible or just barely legible)
5=complete print removal

PERFORMANCE PROPERTY	TEST METHOD
Solvent Resistance	**MIL-STD-202G, Method 215K**

B-732A samples were laser marked using a 20 W CO_2 laser marking system, then laminated to FR-4 epoxy PC board. Labels were marked with alphanumerics and barcodes. Test samples were subjected to 3 cycles of 3 minute immersions immediately followed by a toothbrush rub after each immersion.

TEST FLUID	LASER MARKED IMAGE
Solvent A 1 part IPA, 3 parts mineral spirits	Meets requirement
Solvent C Terpene Defluxer	Meets requirement
Solvent D Saponifier @ 70°C	Meets requirement

Shelf Life:
Shelf life is two years from the date of receipt for this product as long as this product is stored in its original packaging in an environment below 80° F (27° C) and 60% RH. It remains the responsibility of the user to assess the risk of using this product. We encourage customers to develop testing protocols that will qualify a product's fitness for use in their actual application.

Trademarks:
ANSI: American National Standards Institute (U.S.A.)
ASTM: American Society for Testing and Materials (U.S.A.)
PSTC: Pressure Sensitive Tape Council (U.S.A.)
Aquanox® is a registered trademark of the Kyzen Corporation
Atron® is a registered trademark of the Zestron Corporation
Ionox® is a registered trademark of the Kyzen Corporation
Micronox® is a registered trademark of the Kyzen Corporation
Vigon® is a registered trademark of the Zestron Corporation
Weather-Ometer® is a registered trademark of Atlas Material Testing Technology LLC
UL: Underwriters Laboratories Inc. (U.S.A.)
All S.I. Units (metric) are mathematically derived from the U.S. Conventional Units.

Note: All values shown are averages and should not be used for specification purposes.
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