**Opaque Permanent** 

Revision: 1 Dated: 06/01/18

#### Uses:

Avery Dennison<sup>®</sup> SC950 series cast films are premium quality, flexible, opaque solid color high gloss vinyl films designed for use in a wide range of outdoor advertising, fleet marking, of outdoor uses where excellent durability, conformability, color, and gloss are required.



Face: high gloss cast film opaque - 2.0 mil (50 microns) metallic - 2.0 mil (50 microns) ultra metallic - 3.0 mil (76 microns)



Adhesive: Permanent Acrylic (clear, grey or white)



Liner: 78# Kraft

#### Application Surfaces:

Opaque:Flat, Flat with Rivets, Corrugations, Deep Recesses Metallic: Flat, Flat with Rivets Ultra Metallic: Flat

#### Features:

- Industry-leading weeding\*
- Broadest color palette in the industry for color confidence
- Efficient and precise conversion on commercial and craft plotters
- Outstanding durability and color fastness
- High-gloss finish
- Superior conformability for complex, curved surfaces
- Excellent UV, temperature, humidity and salt spray performance
- Pantone® color reference makes design easy
- Custom color matching available

#### Conversion:

- Thermal Die-Cutting
- Thermal Transfer

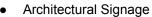
#### **Common Applications:**

- Trucks
- Trailers
- Cars & Vans
- Marine

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- **Emergency Vehicles**

### Product Data Sheet

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Steel Rule Die-Cut

- Directional Signage
- Trains & Light Rail

Drum Roller Sign-Cut

- Buses
- **OEM Durable Decals**
- **Outdoor Advertising**



www.graphics.averydennison.com Customer Service: 800-282-8379





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#### **Physical Characteristics:**

Property	Measurement	Typical Value
Caliper, face		opaque - 2.0 mil (50 microns) metallic - 2.0 mil (50 microns) ultra metallic - 3.0 mil (76 microns)
Caliper, adhesive		1.0 mil (25 μm)
Dimensional stability		<0.015"(0.4 mm)
Tensile at Yield		4.0 - 8.0 lb/in (0.7 - 1.5 kg/cm)
Elongation		150% min.
Gloss	Hunter Gloss @ 60 degrees	90 GU
Adhesion:	15 min 24 hr	3.0 lbs/in (525 N/m) 3.5 lbs/in (613 N/m)
Flammability	FMVSS302	Self Extinguishing
Shelf-Life		2 years from date of manufacture (when stored at the following temperatures and humidity conditions 68°-77° F (20° - 25° C) and 50±5% R. H.)
Durability	Vertical Exposure	Reference color and warranty charts in this data sheet.
Min. Application Temperature		50° F (10° C)
Service Temperature		-40° to 180°F (-40° to 82° C) (Reasonable range of temperatures which would be expected under normal environmental conditions).
Chemical resistance		Resistant to most mild acids, alkalis, and salt solutions

# **Product Data Sheet**

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Data represents average values where applicable, and is not intended for specification purposes.

#### Warranty:

This Warranty applies to the Product listed in this Data Sheet. All statements, technical information (including physical and chemical characteristics) and recommendations about Avery Dennison products are based upon tests believed to be reliable but do not constitute a guarantee or warranty. All Avery Dennison products are sold subject to the Purchaser's assent and agreement that Purchaser is responsible for, and has independently determined, the suitability of such products for its purposes or its customer's purposes. Avery Dennison products are warranted to be free from defects in material and workmanship (i) for two years from the date of manufacture, or (ii) from the date of manufacture until the expiration of the period stated on the specific Product Data Sheet in effect at the time of delivery.. Such time periods are subject in either case to the proper storing and applicable Instructional Bulletin, negates any warranty. It is expressly agreed and understood that Avery Dennison's sole obligation and Purchaser's exclusive remedy under this warranty, under any other warranty, express or implied, or otherwise, shall be limited exclusively to: (a) repair or replacement of defective product without charge at Avery Dennison's plant or at the location of the product (at Avery Dennison's election), or (b) in the event repair or replacement are not commercially practical, a credit amount up to the price of the product taking into account the defect in the product in Avery Dennison's sole discretion.

THE WARRANTY EXPRESSLY SET FORTH ABOVE IS IN LIEU OF ANY OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, ANY IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR ANY PARTICULAR USE AND/OR NON-INFRINGEMENT. SELLER SPECIFICALLY DISCLAIMS AND EXCLUDES ALL OTHER SUCH WARRANTIES. NO WAIVER, ALTERATION, ADDITION OR MODIFICATION OF THE FOREGOING CONDITIONS SHALL BE VALID UNLESS MADE IN WRITING AND MANUALLY SIGNED BY AN OFFICER OF AVERY DENNISON.

AVERY DENNISON'S LIABILITY FOR DEFECTIVE PRODUCTS SHALL NOT EXCEED THE PURCHASE PRICE PAID THEREFORE BY PURCHASER AND IN NO EVENT SHALL AVERY DENNISON BE RESPONSIBLE FOR ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES WHETHER FORESEEABLE OR NOT, CAUSED BY DEFECTS IN SUCH PRODUCT, WHETHER SUCH DAMAGE OCCURS OR IS DISCOVERED BEFORE OR AFTER REPLACEMENT OR CREDIT, AND WHETHER OR NOT SUCH DAMAGE IS CAUSED BY AVERY DENNISON'S NEGLIGENCE.

All sales and contracts for sale of Products are subject to Purchaser's assent and agreement to this Warranty. Avery Dennison hereby objects to any terms or conditions contained in any purchase order or other communication of any kind from the Purchaser that is conflicting, inconsistent or additional to this Agreement.

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#### **Related Documents:**

The following Avery Dennison literature will provide necessary information to the user for proper application, storage, and other requirements and is available upon request from your Avery Dennison representative or from the Avery Dennison website (<u>www.graphics.averydennison.com</u>).

Document Title	Reference Number
Substrate Cleaning and Preparation	Instructional Bulletin # 1.10
Storage, Maintenance and Cleaning of PVC Films	Instructional Bulletin # 1.20
Durability of Films	Instructional Bulletin # 1.30
Converting Tips for Sign Films	Instructional Bulletin # 2.10
Application Instructions for Avery Dennison® Films	Instructional Bulletin # 4.00
Removal Instructions for Avery Cast, Calendered, Reflective, and Polyester Films	Instructional Bulletin # 4.10
Thermal Transfer Printing, Converting, Operating, and Product Instructions	Instructional Bulletin # 5.10
Tips for Overlaminating, Premasking & Packaging Graphics	Instructional Bulletin # 5.50
Stainless Steel Application Outdoor Durability	Instructional Bulletin # 6.80

#### **Colors & Expected Durability**

Vertical Durability for Zone 1 vertical applications is noted in the chart below. Color samples are available from samples.graphics@averydennison.com, or through your sales or customer service contact. Reference Instructional Bulletin 1.30 for zones by geographic location.

NOTE: Some color fade may occur in severe environmental areas. Reference IB 1.30 for durability guidelines.

#### **Colors Cross Reference - Opaque:**

SC950 Series Name	Vertical Durability Zone 1 Years	SC950 Series Name	Vertical Durability Zone 1 Years
SC950-101-O White (blue liner)	10	SC950-102-O Matte White (blue liner)	10
SC950-103-O Clear	10	SC950-104-O Matte Clear	10
SC950-105-O True White (blue liner)	10	SC950-108-O Cover White	10
SC950-180-O Matte Black	10	SC950-190-O Black	10
SC950-206-O Pantone® Proc Yellow C (pigmented adhesive)	8	SC950-210-O Primrose Yellow	8
SC950-215-O Gold	4	SC950-220-O Canary Yellow	8
SC950-225-O Rubber Duckie	8	SC950-230-O Medium Yellow (pigmented adhesive)	8
SC950-235-O Yellow (pigmented adhesive)	8	SC950-240-O Sunflower Yellow (pigmented adhesive)	8
SC950-250-O Dark Yellow	8	SC950-253-O Imitation Gold	8
SC950-315-O Tangerine	8	SC950-355-O Apricot	8
SC950-360-O Orange	8	SC950-362-O Pantone® 021 C (pigmented adhesive)	8
SC950-380-O Bright Orange	8	SC950-405-O Pantone® 1797 C (pigmented adhesive)	8
SC950-417-O Real Red	8	SC950-418-O Luminous Red (pigmented adhesive)	8
SC950-425-O Tomato Red	8		8

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SC950-430-O Cardinal Red	8	SC950-440-O Red	8
SC950-445-O Fire Red (pigmented adhesive)	8	SC950-450-O Dark Red	8
SC950-460-O Spectra Red (pigmented adhesive)	8	SC950-470-O Burgundy	8
SC950-480-O Burgundy Maroon	8	SC950-508-O Soft Pink	8
SC950-513-O Pantone® Violet C (pigmented adhesive)	8	SC950-515-O Blossom (pigmented adhesive)	8
SC950-519-O Blush (pigmented adhesive)	8	SC950-530-O Magenta	8
SC950-565-O Purple	8	SC950-570-O Berry	8
SC950-575-O Lavender	8	SC950-620-O Shade Blue	8
SC950-625-O Majestic Blue	8	SC950-626-O Pantone® 285 C (pigmented adhesive)	8
SC950-628-O Pantone® 286 C (pigmented adhesive)	8	SC950-630-O Olympic Blue	8
SC950-635-O Nautical Blue	8	SC950-640-O Light Blue	8
SC950-642-O Cascade Blue	8	SC950-645-O Peacock Blue	8
SC950-650-O Powder Blue	8	SC950-652-O Butterfly Blue	8
SC950-655-O Medium Blue	8	SC950-659-O Pantone® 293 C (pigmented adhesive)	8
SC950-665-O Intense Blue	8	SC950-670-O Vivid Blue	8
SC950-675-O Interstate Blue	8	SC950-678-O Pantone® 300 C (pigmented adhesive)	8
SC950-679-O Pantone® Reflex Blue C (pigmented adhesive)	8	SC950-680-O Sapphire Blue	8
SC950-682-O Pantone® Process Blue C			
(pigmented adhesive)	8	SC950-683-O Royal Blue (pigmented adhesive)	8
SC950-687-O Impulse Blue	8	SC950-690-O Light Navy	8
SC950-695-O Dark Blue	8	SC950-705-O Dark Aqua	8
SC950-715-O Real Teal	8	SC950-720-O Teal	8
SC950-726-O Pantone® 354 C (pigmented adhesive)	8	SC950-730-O Dark Teal	8
SC950-734-O Pantone® 375 C (pigmented adhesive)	8	SC950-760-O Apple Green	8
SC950-765-O Olive Green	8	SC950-770-O Kelly Green	8
SC950-772-O Grow Green	8	SC950-775-O Bright Green	8
SC950-778-O Green	8	SC950-780-O Yellow Green	8
SC90-785-O Forest Green	8	SC950-790-O Deep Green	8
SC950-793-O Dark Green	8	SC950-804-O Pewter	8
SC950-810-O Light Gray	8	SC950-817-O Silver	4
SC950-820-O Palm Oyster	8	SC950-825-O Light Ash Gray	8
SC950-830-O Slate Gray	8	SC950-835-O Medium Gray	8
SC950-855-O Dark Gray	8	SC950-870-O Battleship Gray	8
SC950-910-O Almond	8	SC950-920-O Beige	8
SC950-921-O Dark Beige	8	SC950-960-O Terra Cotta	8
SC950-965-O Sandstone	8	SC950-970-O Buckskin	8
SC950-978-O Cocoa	8	SC950-983-O Dark Brown	8
SC950-990-O Chocolate Brown	8		

NOTE: Some color fade may occur in severe environmental areas. Reference IB 1.30 for durability guidelines.

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#### **Colors Cross Reference - Metallic:**

	Vertical Durability Zone 1		Vertical Durability
SC950 Series Name	Years	SC950 Series Name	Zone 1 Years
SC950-109-M White Pearlescent	5	SC950-190-M Black	5
SC950-207-M Champaign Mist	5	SC950-213-M Bright Gold	4
SC950-215-M Gold	4	SC950-217-M Light Gold	4
SC950-441-M Red	5	SC950-455-M Autumn Maple	5
SC950-641-M Mist Blue	5	SC950-646-M Bright Blue	5
SC950-647-M Electric Blue	5	SC950-651-M Grand Blue	5
SC950-653-M Dark Royal Blue	5	SC950-683-M Royal Blue	5
SC950-779-M Hunter Green	5	SC950-801-M Silver Metallic	5
SC950-804-M Pewter	5	SC950-805-M Charcoal	5
SC950-806-M Gunmetal	5	SC950-808-M Medium Charcoal	5
SC950-809-M Dark Charcoal	5	SC950-869-M Pantone 877C	5
SC950-923-M Lt Briar Brown	5	SC950-928-M Antique Bronze	5
SC950-930-M Bronze	5	SC950-932-M Copper	5

NOTE: Some color fade may occur in severe environmental areas. Reference IB 1.30 for durability guidelines.

#### **Colors Cross Reference - Ultra Metallic:**

SC950 Series Name	Vertical Durability Zone 1 Years	SC950 Series Name	Vertical Durability Zone 1 Years
SC950-160-M White Sparkle	4	SC950-195-M Ultra Black	5
SC950-219-M Ultra Gold	4	SC950-481-M Ultra Red	5
SC950-585-M Ultra Rose Quartz	5	SC950-779-M Ultra Blue	5
SC950-877-M Ultra Silver	5		

NOTE: Some color fade may occur in severe environmental areas. Reference IB 1.30 for durability guidelines.

#### **Special Considerations:**

Because of the unique properties and varieties of glass, special considerations must be considered for windows and graphic applications. Avery Dennison accepts no liability for glass breakage.

- Glass absorbs heat when exposed to sunlight. The degree of absorption across windows can vary because of shading, heating, and cooling ventilation, and insulation from window frames. These temperature differences across the window produce stress, which can cause glass breakage. The ability of glass to resist breakage because of temperature stress is affected by window size, glass thickness, glass treatments, quality, and design.
- Window cleaning methods also vary, from the type of cleaners used, to the washing methods employed. Specific chemicals used in window cleaners may affect the adhesion of pressure-sensitive graphics. Power washing methods may impact the adhesion of graphics, if the water pressure or temperature exceeds the graphics adhesion capability.

Revisions are italicized

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Graphics Solutions