



High Intensity Metalized Flexible Prismatic Vehicle Marking

Series 823i with Pressure Sensitive Adhesive

Product Bulletin 823i

June 2015

Health and Safety Information

Read all health hazard, precautionary and first aid statements found in the Material Safety Data Sheets and/or product label of chemicals prior to handling or use.

Description

3M™ High Intensity Metalized Flexible Prismatic Vehicle Marking Series 823i is intended for use on clean, smooth, relatively non-porous, weather resistant surfaces when prepared as detailed in 3M Information Folder 1.7.

3M™ High Intensity Metalized Flexible Prismatic Vehicle Marking Series 823i is an impact resistant prismatic lens reflective sheeting pre-coated with pressure sensitive adhesive and exceeds the reflectivity values of EN 12899-1:2007 for Class RA2 materials.

3M Comply™ with Controltac™ Liner

3M Controltac™ minimizes the initial contact area of the adhesive and allows the applicator to reposition the film during application.

The Comply™ air release channels support fast and easy, bubble free installations

Recommended Application and Use

3M™ High Intensity Metalized Flexible Prismatic Vehicle Marking Series 823i is intended for retro-reflective vehicle markings. Typical applications include the manufacturing of safety markings according to DIN 30710.

Photometric

The initial minimum coefficient of Retroreflection, when measured according to CIE 54.2 using CIE standard illuminant A, conforms to Table 4 of EN 12899-1:2007 for Class RA2 materials (Table A).

Geometry of measurements		Colour			
α	β_1 ($\beta_2=0$)	White	Yellow	Red	Blue
0,2°	+5°	250	170	45	20
	+30°	150	100	25	11
	+40°	110	70	15	8
0,33°	+5°	180	120	25	14
	+30°	100	70	14	8
	+40°	95	60	13	7
2°	+5°	5	3	1	0,2
	+30°	2,5	1,5	0,4	-
	+40°	1,5	1,0	0,3	-

Table A: Minimum Coefficient of Retroreflection [cd/(lx · m²)]

The above angular definitions apply for the CIE Goniometer system (co-planar geometry). The sheeting shall be mounted in 0° or 90° rotation on the goniometer (0° is the roll or down web direction).

The initial chromaticity coordinates and luminance factors conform to Class CR2 of EN 12899-1:2007 for Class RA2 materials (Table B).

Color	1		2		3		4		Luminance factor
	x	y	x	y	x	y	x	y	β
White	0,305	0,315	0,335	0,345	0,325	0,355	0,295	0,325	≥ 0,27
Yellow	0,494	0,505	0,470	0,480	0,513	0,437	0,545	0,454	≥ 0,16
Red	0,735	0,265	0,700	0,250	0,610	0,340	0,660	0,340	≥ 0,03
Blue	0,130	0,090	0,160	0,090	0,160	0,140	0,130	0,140	≥ 0,01

Table B: Chromaticity and luminance factors

Advantages

- Impact resistant, metalized flexible retro-reflective sheeting
- Excellent angularity
- Similar daytime and nighttime appearance
- Suited for application over flat or curved surfaces
- Up to 3 years exterior durability

Color and Dimension

Series 823i-10 White
Series 823i-11 Yellow
Series 823i-12 Red
Series 823i-15 Blue

Roll dimension: 1220mm × 45,7m

General Performance Considerations

The durability of 3M™ High Intensity Metalized Flexible Prismatic Vehicle Marking Series 823i depends on the following:

- Correct combination of sheeting and ink series
- Ink formulation
- Ink drying/curing methods
- Selection, preparation and temperature of the substrate
- Application methods
- Exposure conditions
- Cleaning and maintenance methods

Shelf Life and Storage

The combined shelf life as processed and unprocessed sheeting Series 823i cannot exceed 1 year from the date of receipt from 3M.

- Leave the rolls of sheeting in the original shipping carton or suspend the rolls horizontally.
- Store the sheeting in a clean, dry area and away from direct sunlight.
- Graphics should be stored between 18 - 24°C.
- Ship screen printed applications lying flat or in a roll. To roll the graphic, wrap it sheeting-side-out on a minimum 150 mm diameter core. These methods help prevent the sheeting from wrinkling or popping off the liner.

Important Notice to Purchaser

- All statements, technical information and recommendations herein are based on tests we believe to be reliable, but the accuracy or completeness thereof is not guaranteed. Before using, user shall determine the suitability of the product for its intended use, and user assumes all risk and liability whatsoever in connection therewith. All questions of warranty and liability relating to this product are governed by the terms of the sale subject where applicable to the prevailing law.

- No statement or recommendation not contained herein shall have any force or effect unless in an agreement signed by officers of seller and manufacturer.

Limitations

Series 823i is not intended for

- Regulatory traffic signs
- Graphics made for automotive Original Equipment Manufacturers (OEM); please contact 3M Automotive Division for alternatives.
- Metalized Flexible Prismatic Vehicle Marking Series 823i is not designed to perform on stainless steel substrates!

Compatible Products

Screen Print Applications

3M™ Process Color Series 990

Application

Temperature range +15°C to +30°C

- Check the proper temperature using an Infrared-Thermometer like 3M Scotchtrak™ IR-500.
- Cut sheeting around rivets and between seams, joints and overlapped panel.
- Do not stretch the sheeting during application.
- Do not overlap sheeting.
- Contact your 3M representative for detailed processing and application procedures

Maintenance and Cleaning

For cleaning of vehicles with Series 823i safety marking, follow below cleaning conditions: Use a cleaner such as the kind used for high quality painted surfaces. The cleaner must be wet, non-abrasive, without strong solvents and have a pH value between 6 and 8 (neither strongly acidic nor strongly alkaline). For high pressure wash the following conditions should be applied/set up:

- maximum pressure 80 bar
- maximum temperature 60°C
- minimum of 1 m distance of cleaning jet from sheeting surface
- cleaning wand to be held at no greater angle than 15° from perpendicular to the sheeting surface
- Use wide fan pattern

Further Assistance

For help on specific questions relating to 3M™ reflective products, please contact your local 3M Technical Service person or contact:

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