Gerber High Performance Series 225 Premium Film manufactured by 3M

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DESCRIPTION

Gerber High Performance Series 225 is a high performance cast vinyl film made exclusively for Gerber by 3M. Series 225 is a durable, dimensionally stable vinyl with a clear, pressure-sensitive adhesive designed to withstand a variety of severe weather and handling conditions. It is available in numerous, including opaque gloss, metallic, and Clear Enamel Receptive, in both punched and unpunched formats. Series 225 comes on a synthetic liner which won't curl or split when exposed to moisture/humidity.

Note: *15 inch Series 225 is an EDGE READY™ Material. A color chart is included at the end of This bulletin as well as a PANTONE® Simulated Color Reference Table.*

PRODUCT LINE

Property	Description
Film	2-mil cast vinyl
Thickness (film and adhesive)	2.5 to 3.5 mil (0.063 to 0.09 mm)
Film color	Over 25 colors

Property	Description
Adhesive	Clear, pressure sensitive
Liner	Transparent synthetic
Application substrates	For flat surfaces with and without rivets, or simple curved surfaces
Application surfaces	Flexible signage, glass, metal, acrylic, polycarbonates, fiberglass, painted surfaces
Removability	Permanent

INTENDED APPLICATIONS

Series 225 is suitable for a wide range of commercial and industrial applications including vehicles, exterior and interior signage, window markings, display graphics, etc. It can be used on flat surfaces with and without rivets or simple curved surfaces. Series 225 has a clear adhesive and is therefore suitable for use as a cut vinyl in window/transparent substrate applications, as well as opaque applications.

PERFORMANCE LIFE (UNPRINTED)

The exterior performance life of Gerber High Performance Series 225 is based upon field experience and exposure tests conducted throughout the United States. When the graphics are processed and used according to Gerber recommendations, they will an expected performance life up to the values shown in the charts below. The actual performance depends on the following conditions:

- Selection and preparation of substrate
- Application methods
- Exposure conditions
- Cleaning methods

Application Specifics			Performance Life (years): Unprinted	
			U.S. [1, 4]	S. W. [2, 4]
*Vertical Exposure	**Signs Only** Solid colors, except metallic colors and clear	Unprinted, applied to first surface	7	5
		Unprinted, applied to second surface	7	5
	Vehicles Only Solid colors, except metallic colors and clear	Unprinted, applied to first surface	8	5
		Unprinted, applied to second surface	8	5
	Signs and Vehicles Metallic colors and Clear	Unprinted, applied to first surface	5	3
		Unprinted, applied to second surface	5	3

Application Specifics			Performance Life (years): Unprinted	
			U.S. [1, 4]	S. W. [2, 4]
**Non-Vertical Exposure[3]	Solid Colors	Unprinted, applied to first surface	5	Not advised

* Face of graphic is vertical 90º ± 10º.

** Face of graphic is greater than 10º from vertical.

1. For exterior performance life statements outside of the United States, contact Gerber Technology.
2. The United States Desert Southwest area includes Arizona, New Mexico, and the desert areas of California, Nevada, Utah, and Texas. A detailed map is available upon request.
3. Non-vertical applications can be used to identify commercial vehicles from the air. Non-vertical applications expose the film to the maximum effect from sunlight and the environment. There are foil and film restrictions for horizontal applications. The film may change color, lose gloss, and chalk. The following performance statements assume that only legibility is required.
4. Unprinted film 225-20 (Matte White) may chalk with age. This is considered normal and acceptable wear.

SHELF LIFE AND STORAGE

Apply film within one year of receipt. Printed graphics should also be applied within one year. Film and printed graphics (with or without premask) should be kept in a clean area free from excessive moisture and direct sunlight. Maintain temperature at less than 100°F (38°C).

Use a paper interleaf between layers of stacked or rolled printed materials. Do not stack printed graphics face to face.

PRINTING

Use Gerber HP Series 225 settings when printing with the GERBER EDGE®, GERBER EDGE 2®, or Gerber EDGE FX™.

GerberColor Finishing (GCF), GerberColor Spot (GCS), GerberColor Process Pro™ CMYK (GCP), GerberColor Medal (GCM), GerberColor Transparent (GCT), and GerberColor Special Effects (GCX) Series Foils, and ColorSet™ Foils can be used to print onto Series 225 High Performance Films.

Gerber standard tack application tape is required to be used as the transfer carrier for all printed graphics.

Recommended working environment is as follows:

- Operating temperature: 50ºF to 95ºF / 10ºC to 35ºC
- Recommended temperature for assured printing accuracy: 68ºF to 78ºF / 20ºC to 26ºC
- Operating humidity: 20% to 90% relative humidity, non-condensing (maximum range; actual range varies by material used)

PROTECTING GRAPHICS

Gerber Technology offers products that are designed to protect vinyl and printed graphics.

Gerber Guard™ manufactured by 3M is a durable, dimensionally stable, glossy vinyl overlaminate. This film has a petrochemical-resistant construction and is intended to be used when markings may be exposed to petrochemical spillage and/or severe handling conditions.

Gerber UVGuard™ is a custom-formulated, 1-mil, clear, TEDLAR® polyvinyl fluoride (PVF) laminating film designed to further expand the resistance to weathering of printed graphics for up to five years.

Gerber UVGuard™ 9 manufactured by 3M is a 2-mil, glossy, clear, mildew-resistant, polyvinyl fluoride laminating film with a petrochemical-resistant adhesive system. It is designed to further expand the resistance to weathering of printed graphics up to nine years. Gerber UVGuard 9 has the highest protection from UV fade.

Gerber StrikeGuard™ is an 8.0-mil, clear, glossy overlaminate film designed for a variety of applications. This heavy-duty overlaminate film is ideal for the protection of graphics, up to two years, and is especially beneficial where printed graphics experience severe handling and forceful impact. Gerber StrikeGuard is not recommended in applications that require petrochemical protection or where additional UV or vandal resistance is desired.

Abrasion Guard™ SPF (Sign Protection Formula) is a clear, top-coat GerberColor Finishing Series (GCF) Foil designed for use with EDGE® Series thermal transfer printing systems, to protect graphics from moderate contact and exposure to harmful effects of UV rays. It has an expected performance life of up to five years (when printed by itself). When applied as a protective overprint on other GerberColor Foils, Abrasion Guard SPF will extend the life of the base color by up to 30%.

Matte Clear is a clear matte finish, top coat GerberColor Foil designed for use with EDGE® Series thermal transfer printing systems, to reduce glare and protect graphics from moderate contact or handling. It has an expected performance life of up to three years.

CUTTING

Series 225 can be cut on any Gerber 15-inch sprocketed plotter, plus FasTrack™ or ODYSSEY™ plotter. A 30° SuperSharp blade is recommended for tangential plotters (HS15™, HS15 Plus, GSX™, GS15™, GS750™, HS750™, SMIVB™). A 45° blade should be used with swivel knife plotters (FasTrack, EmbossTrack™, enVision™, and ODYSSEY). Plotters can be set to full speed.

The minimum recommended cutting height for text is .375 inch. This recommendation is based upon evaluations using upper case Helvetica Medium copy. Users should verify their own ideal cut heights based upon their specific cutting equipment. The user should perform a test cut to determine the ideal tool force setting.

Excess film should be weeded within 24 hours of cutting to minimize the effect of adhesive flow.

SUBSTRATE PREPARATION

Before applying your graphic, wash the surface of your substrate with warm water and detergent. Do not use soaps or other cleaners with lotions or creams as they will leave a residue. Thoroughly rinse the surface and allow it to completely dry.

Saturate a clean paper towel with a solvent-based cleaner and wipe the substrate surface. Be certain to follow all manufacturer safety guidelines when using any solvent. Dry the surface with a lint-free paper towel before the solvent evaporates.

If applying to glass, wipe the surface with a 2 to 1 mixture of water and isopropyl alcohol. Glass temperatures can vary across the surface. These temperature variations can produce stresses which may cause the glass to break. Use caution when applying to glass.

Some polycarbonate substrates may weaken when certain vinyl films are applied to them. Because of this possibility, the user will need to determine if safety items such as helmets, safety shields, and some windshields are compatible with their vinyl's adhesive.

Many paint systems (e.g. two-part urethane) and some plastic substrates will outgas if they are not fully cured. Outgassing can cause permanent bubbling in most films; substrates should be tested for outgassing prior to final application. Plastics should be dried at 150ºF (66ºC) for 24 hours prior to application to help avoid outgassing.

APPLICATION TECHNIQUES

Both wet and dry application methods can be used with Series 225 and panels should be overlapped. Gerber standard tack application tape is recommended for all EDGE-printed applications (see "Printing" section for important information on applying EDGE-printed graphics.)

MAINTENANCE

To clean printed graphics, use a mild, non-abrasive soap with a soft cloth or sponge. Avoid using alcohol-based cleansers or soaps containing grit or abrasives. Automated vehicle washing systems that use rotary cleaning brushes should also be avoided.

PHYSICAL PROPERTIES

Property	English Units	Metric Units
Dimensional Stability	0.008 in	0.2 mm
Service temperature range	-40º to 225ºF	-40º to 107ºC
Tensile Strength	5 lb/in at 73ºF	0.9 kg/cm at 23ºC
Reverse impact resistance	No cracking at 73ºF or 40ºF	No cracking at 23ºC or 4ºC
Minimum Application Temperature	40ºF	4ºC

ADHESIVE CHARACTERISTICS*

Material	English Units - lb/in	Metric Units - kg/cm
Acrylic	4	0.7
Alodine aluminum	8	1.4
Fruehauf prepainted panels	4	0.7
Polycarbonate	4	0.7
Urethane paints	4	0.7

* *(24 hours after application***)**

CHEMICAL RESISTANCE

Chemical Agent	Exposure Time	Result
Reference fuel	1 hour	edge softening
#1 diesel fuel	1 hour	edge softening
10% Hydrochloric acid	10 minutes	no effect
10% Ammonium Hydroxide	10 minutes	no effect
Mild acids	10 minutes	no effect
Salts	10 minutes	no effect
Water	10 minutes	no effect
Alkalis	10 minutes	no effect

FLAMMABILITY

Series 225-10 (white) has been tested for flame spread per ASTM E84-95, “Surface Burning Characteristics of Building Materials,” and meets the requirements of National Fire Protection Association Class A (1) (most fire-resistant class) as defined in NFPA 101, “Life Safety Code.”

RELATED LITERATURE

Refer to Product Bulletins of relevant foils and materials for product-specific handling, production, and finishing information.

CONTACT INFORMATION

Graphic Marking Systems • 800-232-8018 • www.ShopGMS.com

When sold by Gerber, use only the corresponding Gerber Product Bulletin to determine product details, including but not limited to appropriate uses, warranty and processing.

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GERBER HP SERIES 225 COLOR CHART

Solid Colors

225-10 White	225-12 Black	225-13 Tomato Red
225-15 Bright Yellow	225-17 Vivid Blue	225-19 Deep Mahogany Brown
225-20 Matte White	225-22 Matte Black	225-25 Sunflower
225-31 Medium Grey	225-37 Sapphire Blue	225-38 Royal Purple
225-47 Intense Blue	225-49 Beige	225-53 Cardinal Red
225-56 Dark Green	225-57 Olympic Blue	225-58 Burgundy
225-63 Geranium	225-66 Forest Green	225-186 Bright Green
225-197 Light Navy		

Metallic Colors

225-120 Silver
225-131 Gold

Clear

225-114 Clear Enamel Receptive

PANTONE® Simulated Color Reference Table		
PANTONE Simulated Color	**Gerber HP Series 225 Color Name**	**GSP Pigment Code**
Process Black C	BLACK	225-12
348C	BRIGHT GREEN	225-186
109C	BRIGHT YELLOW	225-15
4625C	DEEP MAHOGANY BROWN	225-19
3302C	FOREST GREEN	225-66
872C	GOLD - Metallic	225-131
301C	INTENSE BLUE	225-47
289C	LIGHT NAVY	225-197

PANTONE Simulated Color	Gerber HP Series 225 Color Name	GSP Pigment Code
Black C	MATTE BLACK	225-22
422C	MEDIUM GREY	225-31
7461C	OLYMPIC BLUE	225-57
877C	SILVER - Metallic	225-120
1235C	SUNFLOWER	225-25
1795C	TOMATO RED	225-13

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