



Gerber QUANTUM™ Marking Film Series 2000

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DESCRIPTION

QUANTUM 2000 is a 3.6-mil, polymeric, calendered vinyl formulated to provide optimum cutting, weeding, printing, and release results.

QUANTUM 2000 is intended for a wide variety of interior and exterior cut-film applications and has been designed to work with the GERBER EDGE®, GERBER EDGE 2®, and GERBER EDGE FX™ thermal transfer printing systems, in conjunction with GerberColor™ Foils.

INTENDED APPLICATIONS

QUANTUM 2000 can be used to produce signs, graphics, displays, and labels of all types. It has a clear, permanent, pressure-sensitive adhesive which allows it to be used in two-way marking applications.

QUANTUM 2000 can be applied to a wide variety of substrates including aluminum, fiberglass, plastics, glass, and most non-porous painted surfaces. The user is responsible for determining the suitability of all substrates prior to final application.

This film is not recommended for use on corrugated or highly irregular surfaces or for vehicle applications (Use Gerber High Performance Series 220, 225, or 3M™ Controltac™ Film 180 for vehicle applications). It is also not intended for applications where petrochemical contact may occur. If petrochemical exposure is anticipated, refer to the section below on protecting graphics.

PERFORMANCE LIFE (UNPRINTED)

QUANTUM 2000 has an expected exterior vertical exposure life of up to 5 years.

Performance statements are based upon representative experience obtained from testing throughout the United States. Actual performance will be affected by substrate selection, substrate preparation, maintenance of the markings, and exposure conditions. Continuous exposure in regions that experience maximum sunny days will result in decreased performance. This product is not recommended for horizontal applications.

SHELF LIFE AND STORAGE

QUANTUM 2000 can be stored by the fabricator for 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 75°F (24°C) and relative humidity at 50% or less.

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

PRINTING

GerberColor Finishing (GCF), GerberColor Spot (GCS), GerberColor Process Pro™ CMYK (GCP), GerberColor Medal (GCM), and GerberColor Transparent (GCT) Series Foils can be used to print onto QUANTUM 2000.

Recommended working environment is as follows:

- Operating temperature: 50°F to 95°F / 10°C to 35°C
- Recommended temperature for assured printing accuracy: 68°F to 78°F / 20°C to 26°C
- 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 overlamine. 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 overlamine film designed for a variety of applications. This heavy-duty overlamine 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%.

CUTTING

Gerber QUANTUM Series 2000 has been designed for cutting on most flatbed and drum cutting (sprocket-driven or friction-fed) equipment. QUANTUM 2000 can also be hand or die cut. A test cut should be performed to determine the ideal tool force setting.

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, solvent 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 polycarbonate 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

APPLICATION TECHNIQUES

If QUANTUM 2000 is being used as a print medium with EDGE® Series thermal transfer printing systems, Gerber standard tack application tape is required for use as a transfer carrier.

QUANTUM 2000 panels should be overlapped. Wet or dry application techniques can be used (dry methods recommended).

MAINTENANCE

To clean printed graphics or cut markings, use a mild, non-abrasive soap with a soft cloth or sponge. Avoid using alcohol-based cleansers or soaps containing grit or abrasives.

PHYSICAL PROPERTIES

Thickness	3.6 mil
Film Color	Several (2 matte colors)
Adhesive	Solvent-based, permanent PSA acrylic

Adhesive Color	Clear
Adhesive Thickness	.08 to .09 in
Tensile Strength	15 lbs/in
Elongation	150%
Dimensional Stability	<.020 in (.0008 mm)
Application Temp.	40°F (4°C)
Removal Temp.	n/a
Operating Temp.	-40°F to 185°F (-40°C to 85°C)

CHEMICAL RESISTANCE (UNPRINTED)

Chemical Agent	Exposure Time	Result
Water	24 hours	No effect
Methanol	1 hour	Slight edge lift
Etyylene Glycol	24 hours	No effect
SAE 20 motor oil	24 hours	No effect
5% Detergent	24 hours	No effect
Hydrochloric acid	24 hours	No effect
10% Ammonium Hydroxide	24 hours	No effect

RELATED LITERATURE

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

CONTACT INFORMATION

For help with questions concerning Gerber products, please call your distributor or Gerber Customer Service at 1-800-222-7446 or (860) 644-1551. Visit us on the Internet at www.gspinc.com to learn more about our many other foils, materials and equipment.

EDGE, GERBER EDGE, GERBER EDGE 2, Gerber Scientific Products, GerberCal, GerberGraphics, GRAPHIX ADVANTAGE, GSP, and Images on Vinyl are Registered Trademarks of Gerber Technology.

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