

VARGard™ Antireflective, Antiglare, Conductive films

Now...experience high quality visibility



VARGard™ Series
Antireflective Films for High Quality Display Enhancements

- Improves electronic display contrast and readability
- Reduces glare (diffuse) and specular reflection by over 85%
- Protects displays, increases mechanical and chemical durability
- Available in 18" x 24" sheets or cut to custom sizes for immediate use or Dontech will apply to your product

Experience the VARGard™ Difference

VARGard™ films improve electronic display readability by reducing glare and reflection losses in high ambient light conditions. With the addition of VARGard™, reflection can be reduced over 85%. Typical applications include the aftermarket enhancement of flat panel displays (e.g., LCDs), touchscreens, used in high ambient light environments (e.g., outdoors).

DONTECH
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VARGard™

Your Clear *Optical* Solution

VARGardTM is manufactured through vacuum deposition processes where multiple, broadband, photopic antireflective coatings are deposited on hardcoated polyester film. It is available in a variety of surface finishes from very matte to polished (i.e., no antiglare properties). VARGard™ films come standard with pressure sensitive adhesive (PSA) for optically coupling the film to electronic displays and other surfaces. EZKlean™ hydrophobic coatings are applied to VARGard surface layer to resist fingerprints, oils and inks.

Part Number Standard Sheet Size (in.) Description	Total Luminous Reflection (Max.)	EZKlean™ Hydrophobic Coating	Pressure Sensitive Adhesive
92 VARGard-0.75 18" x 24" x 0.009" Clear 92 Gloss Hardcoated PET w/ VAR-0.75	0.75%	Yes	Yes
60 VARGard-0.75 18" x 24" x 0.009" Matte 60 Gloss Hardcoated PET w/ VAR-0.75	0.75%	Yes	Yes
30 VARGard-0.75 16" x 20" x 0.009" Very Matte 30 Gloss Hardcoated PET w/VAR-0.75	0.75%	Yes	Yes

NOTE: VARGard comes standard with protective release liners on front/rear surfaces. Gloss levels per ASTM-D-523

Standard VARGard Products

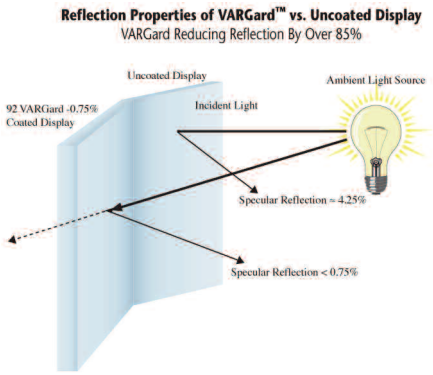
- 92 VARGard – polished clear (92 gloss) – best suited for high ambient light indoor/outdoor applications where maximum display resolution is required.
- 60 VARGard – matte (60 gloss finish) – combination of both diffuse (antiglare) and specular antireflective properties. Suitable for high ambient light and outdoor applications where good display resolution is required.
- 30 VARGard – very matte (30 gloss finish) – combination of both diffuse and specular antireflective properties. Significant glare reduction suitable for very high ambient light conditions where display resolution is not as critical (e.g., character modules).
- Mattegard™ – non-glare PET films available in 30 and 60 gloss finishes. Mattegard comes standard with PSA and release liners.

Custom VARGard Products

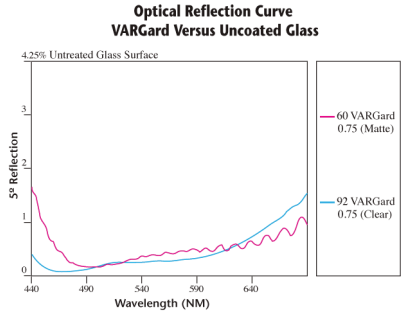
Dontech Inc. manufactures a variety of custom optical filters and enhancement films.

- Conductive VARGard – conductive AR films for antistatic applications.
- Polarizing VARGard – by combining AR coatings with circular or linear polarizers, front surface and internal reflections are greatly reduced, resulting in increased contrast and sunlight readability.
- Custom Antireflective films – Dontech can vacuum deposit custom antireflective coatings with a maximum <0.5% or <0.25% total luminous reflection for high performance applications such as avionic displays. An infrared (IR) blocking film layer can be incorporated into the optical stack to further protect displays from heat due to solar loading.

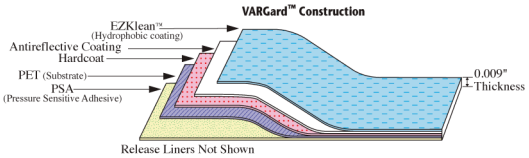
Reflection of VARGard Coated vs. Uncoated Display



VARGard Optical Reflection Curve



VARGard Construction



VARGard™

Product Specifications

Substrate: Polyethylene Terephthalate (PET) – thermoplastic film – 0.007"

Optical Properties:

- Antireflective coating: Multi-layer, broadband AR coating; total luminous reflection; <0.75% max.; average photopic value <0.6% (380 to 780 nm).
- Light Transmission: ≥ 94%
- Wavelengths transmitted: 400 to 800 nm

Hardcoating: UV cured hard coating improves resistance to abrasion, scratching and chemicals. Clear/Polished for 92 VARGard, matte for 30 and 60 VARGard; Exceeds 3H pencil hardness.

EZKleanTM: Fluorocarbon based hydrophobic surface coatings. Reduces surface tension and resists fingerprints, oils and most inks.

Chemical Resistance

Reagents:	VARGard with EZKlean	Reagents:	VARGard with EZKlean
Distilled Water	Passed	Vinegar (3% Acetic Acid)	Passed
Soap Solution	Passed	Unleaded Gasoline (87 Octane)	Passed
Lubricating Oil	Passed	Butyl Acetate	Passed
Coffee	Passed	Butyl Cellusolve Acetate	Passed
Windex® Window Cleaner	Passed	Methyl Ethyl Ketone (MEK)	Passed
Isopropyl Alcohol (70% by Volume)	Passed	Toluene	Passed
VM & P Naphtha	Passed		
Acetone	Passed		

Testing per ASTM-D-1308, 1 hour spot open test.

Storage

Shelf-life of VARGard films is 6 months at 23°C ± 5°C, Maximum RH 50%. Storage below 23°C will extend the life of the film. Film must be brought back to room temperature before using. Material should never be stored below 10° C.

Thermal Range

-40°C to +70°C

Durability

Mil – C – 675C

Humidity – After exposure to an atmosphere of 48.90 ± 2.2°C and 95 to 100% relative humidity, the coated surface shall meet the requirements of 3.4.1 and the application abrasion resistance requirement of 3.8.4.

Adhesion – The coated optical surface shall show no evidence of coating removal when cellophane tape is pressed firmly against the coated surface and quickly removed at an angle normal to the coated surface.

Dontech Inc. is an ISO-9001 certified designer of optical filters for contrast enhancement and EMI/RFI shielding for electronic displays and enclosures. For more information visit us at **www.dontechinc.com**

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