

Application Guide

Automotive Under-the-Hood Labeling



Industries:

Automobiles, trucks, busses, etc.

Products:

XF-455, XF-456, XF-592, XF-603, XF-611,
XF-670, XF-672, XF-680, XF-803, XF-808

Applications:

- Drive train
- Engine
- Exhaust
- Transmission
- Suspension
- Wheels
- Low surface energy plastics

Compliance:

- REACH and RoHS
- GMW14573/GM 1621M
- UL94 VTM0, DOT FMVSS 302

Customer Benefits:

- High temperature stability
- Aggressive pressure sensitive adhesives
- Durable topcoats
- Thermal transfer printable
- Flame retardant
- Laser markable
- Polyimide, polyester and aluminum options

Industry Needs

Automakers require durable under-the-hood labels to accurately track their products through manufacturing, provide critical safety and operational information and remain firmly affixed for the life of the parts. The labels need to adhere to smooth, textured and sometimes oily surfaces and resist the effects of high temperatures, abrasion and submersion in a myriad of harsh chemicals. In many cases the label must also be auto-applied.

The stakes are high for lost or non-conforming products so the decision of which label materials will be successful is mission critical.

Under-the-hood tracking requirements vary widely from engines, transmissions and exhausts to drive train, suspension and wheels. Each application requires a label with a unique blend of high temperature films, durable print or ablation surfaces and aggressive PSA to be successful.



Polyonics Solutions

Polyonics manufactures a family of label materials that addresses the key automotive under-the-hood labeling requirements. The label materials range from low cost thermal transfer printable (TTP) polyester (PET) to high temperature polyimide (PI) and ultra-high temperature aluminum. In addition, black and white laser markable polyimide and white aluminum label constructions

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For more information or to receive samples for evaluation, please contact: info@polyonics.com or 603.352.1415



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are available for applications too harsh for traditional thermal transfer printing.

The materials include durable topcoats and pressure sensitive adhesives (PSA) designed expressly for the types of high temperatures, abrasion and harsh chemical exposures typical of under-the-hood applications. Polyonics has tested its label materials to the leading automotive requirements including the GMW 14573 and GM 1621M standards.

Flame retardant polyimide and PET label materials are also available that pass both the UL94 VTM0 the DOT FMSVSS 302 requirements.

Label	Film	PSA	Applications	Temperature
XF-455	50 µm (2 mil) gloss white PET	25 µm (1 mil) LSE	TTP, strong bonds to PP and PE plastics, auto apply, chemical resistance per GMW 14573/GM 1621M Class B.	Operational: -40 to 148°C
XF-456	102 µm (4 mil) matte white PET	75 µm (3 mil) LSE	TTP, strong bonds to PP and PE plastics, auto apply, chemical resistance per GMW 14573/GM 1621M Class B.	Operational: -40 to 148°C
XF-592	61 µm (2.4 mil) white PI	50 µm (2 mil) Acrylic	TTP, rough/uneven surfaces high tack PSA, chemical resistance per GM 1621M tested, auto apply.	100 hrs @ 150°C 5 min @ 260°C 90 sec to 300°C
XF-603	38 µm (1.5 mil) semi-gloss white PI	28 µm (1.1 mil) acrylic	TTP, flame retardant, auto apply, VTM0 and V0 rated, UL94 (file # E338081), UL 969 rated (file # MH 19503 PGJ12), passes FMVSS 302 burn rate test	100 hrs @ 150°C, 5 min @ 260°C, 90 sec @ 300°C
XF-611	38 µm (1.5 mil) semi-gloss white PET	30 µm (1.2 mil) acrylic	TTP, flame retardant, auto apply, VTM0 rated, UL94 (file # E338081), UL 969 rated (file # MH 19503 PGJ12), passes FMVSS 302 burn rate test	Range: -40 to 150°C
XF-670	43 µm (1.7mil) matte black top coat (TC)	25 µm (1 mil) LSE	Laser markable, GMW 14573/1621M.	100 hrs @ 125°C 24 hrs @ -70°C 5 min @ -55 to 260°C 90 sec to 300°C
XF-672	43 µm (1.7 mil) with white TC	25 µm (1 mil) LSE	Laser markable, GMW 14573/1621M.	100 hrs @ 125°C 24 hrs @ -70°C 5 min @ -55 to 260°C 90 sec to 300°C
XF-680	61 µm (2.4 mil) AL white TC	25 µm (1 mil) ultra-high temp silicone	Laser markable, high temperature exhaust, heat treating, low out gassing.	Operational: -100°C to 350°C, Range: -100°C to 600°C
XF-803	61 µm (2.4 mil) AL with white TC	25 µm (1 mil) ultra-high temp silicone	TTP, auto apply.	Operational: -40 to 400°C, Range: -40 to 600°C
XF-808	61 µm (2.4 mil) AL with white TC	50 µm (2 mil) high temp acrylic	TTP, auto apply.	Operational: -40 to 232°C, Range: -40 to 450°C

POLYONICS AT A GLANCE

Polyonics manufactures high performance polymeric materials for harsh environments. These include printable and laser markable label materials, single and double coated engineered tapes and flexible substrates with highly reflective and printable top coats. Polyonics materials are used by OEMs and converters worldwide. The ultra-thin polyimide, polyester and aluminum materials are designed expressly for high temperatures and harsh environments plus provide flame retardant and ESD properties for electronics, automobile, aerospace and medical components.



For more information or to receive samples for evaluation, please contact: info@polyonics.com or 603.352.1415



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