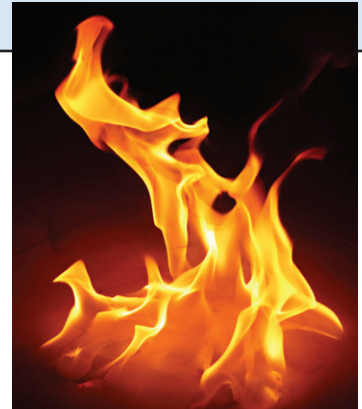


Flame Retardant Label Materials



Setting the Standard

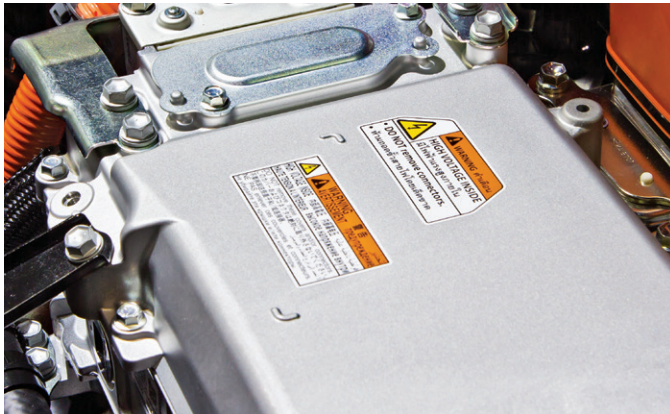
Polyonics, the leader in materials for high temperatures and harsh environments, continues to set the standard for thermal transfer printable flame retardant label materials with FlameGard™ technology. The technology combines chemical and physical mechanisms that help control heat, oxygen and flammable gases (see diagrams 1 & 2). Together with high temperature top coats for superior ink reception and flame retardant PSAs, Polyonics provides the most durable label materials for the harshest applications while preventing the propagation of fire.



UL94 VTM0 Recognized and Tested

Polyonics halogen free flame retardant label materials are either tested to or fully recognized by UL94 with some products also tested to FAR 25.853 and BSS 7238/7239 flammability, smoke and toxicity standards. Materials tested to the DOT FMVSS 302 burn test are also available.

The REACH and RoHS compliant polyimide and polyester (PET) materials are used in a wide variety of applications to help prevent the propagation of fire.



Applications

- Aerospace
- Auto under-the-hood & interiors
- Batteries
- PCB ID & tracking
- Power supplies
- Wire wraps

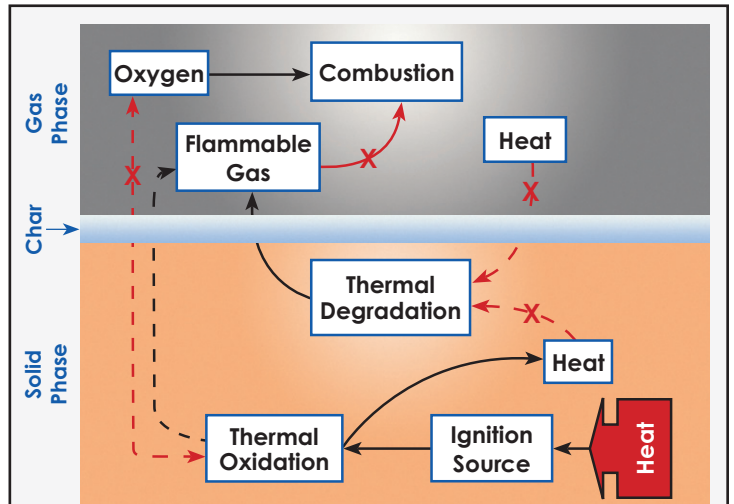


Diagram 1

Diagram 1 depicts how heat contributes to burning and illustrates the areas (X) where the chemical mechanisms, incorporated in the FlameGard™ technology, actively help retard the burn cycle.

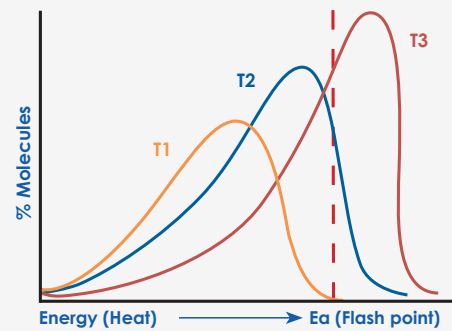


Diagram 2

Diagram 2 illustrates how temperature effects burn cycles. At temperature (T1) few molecules (area under the curve) have enough activation energy (E_a) to burn. When the temperature reaches (T3), the majority of molecules now have enough energy to sustain a fire. FlameGard™ helps keep the temperature below (T3) and prevent burning.



Flame Retardant Label Materials in Colors

Polyonics offers flame retardant label materials in a wide variety of colors including white polyimide and polyester (PET) along with polyimide options in semi-gloss and matte yellow and blue plus semi-gloss green, violet and pink.



Features and Benefits

- Thermal transfer printable
- Help prevent the propagation of fire
- Colors allow visual product identification
- UL94 VTM0 recognized or tested
- FAR25.853, BSS 7238/7239, DOT FMVSS 302 tested

Product Line

Label	Film	PSA	Applications	Temperature
XF-603	38 μm (1.5 mil) semi-gloss white PI	28 μm (1.1 mil) LSE	Flame retardant, UL94 VTM0 and UL969 recognized, FMVSS 302 tested	100 hrs @ 150°C 5 min @ 260°C 90 sec @ 300°C
XF-611	38 μm (1.5 mil) semi-gloss white PI	30 μm (1.2 mil) Acrylic	Flame retardant, UL94 VTM0 and UL969 recognized, FMVSS 302 tested	Range: -40 to 150°C
XF-641	36 μm (1.4 mil) matte white PI	46 μm (1.8mil) Acrylic	Flame retardant, tested to UL94 VTM0, BSS 7238/7239 and FAR 25.853	100 hrs @ 150°C 5 min @ 260°C 90 sec @ 300°C
XF-647	36 μm (1.4 mil) matte yellow PI	46 μm (1.8 mil) Acrylic	Flame retardant, tested to UL94 VTM0, BSS 7238/7239 and FAR 25.853	100 hrs @ 150°C 5 min @ 260°C 90 sec @ 300°C
XF-673	35 μm (1.4 mil) semi-gloss yellow PI	25 μm (1 mil) Acrylic	Flame retardant, UL94 VTM0 and UL969 recognized, BSS 7238/7239 and FAR 25.853 tested	100 hrs @ 150°C 5 min @ 260°C 90 sec @ 300°C
XF-674	35 μm (1.4 mil) semi-gloss blue PI	25 μm (1 mil) Acrylic	Flame retardant, UL94 VTM0 and UL969 recognized, BSS7238/7239 and FAR 25.853 tested	100 hrs @ 150°C 5 min @ 260°C 90 sec @ 300°C
XT-675	35 μm (1.4 mil) semi-gloss green PI	25 μm (1 mil) Acrylic	Flame retardant, UL94 VTM0 and UL969 recognized, BSS 7238/7239 and FAR 25.853 tested	100 hrs @ 150°C 5 min @ 260°C 90 sec @ 300°C
XF-676	35 μm (1.4 mil) semi-gloss violet PI	25 μm (1 mil) Acrylic	Flame retardant, UL94 VTM0 and UL969 recognized, BSS 7238/7239 and FAR 25.853 tested	100 hrs @ 150°C 5 min @ 260°C 90 sec @ 300°C
XT-677	35 μm (1.4 mil) matte blue PI	25 μm (1 mil) Acrylic	Flame retardant, UL94 VTM0 and UL969 recognized, BSS 7238/7239 and FAR 25.853 tested	100 hrs @ 150°C 5 min @ 260°C 90 sec @ 300°C
XF-678	35 μm (1.4 mil) semi-gloss pink PI	25 μm (1 mil) Acrylic	Flame retardant, UL94 VTM0 and UL969 recognized, BSS 7238/7239 and FAR 25.853 tested	100 hrs @ 150°C 5 min @ 260°C 90 sec @ 300°C

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