In-Mold Labeling Solutions
Grafilm® / Grafilm® Ultra

Grafilm® is a patented, UL Certified In-Mold Label film that mechanically bonds to any surface making it the ultimate solution for label durability, production flexibility and product cost efficiency. Grafilm is ideal for use on injection molded, blow molded, compression molded and thermoformed parts.

Grafilm®

- **Unsurpassed Durability**
  Unlike competitive products, Grafilm® is micro-porous. It bonds mechanically with any resin and adapts to the part's expansion and contraction rate. This creates unsurpassed durability, longevity, and chemical resistance, making the label **impossible to remove** or damage without damaging the product itself.
- **Expanded Label Area**
  Grafilm contours to texture in molds. Grafilm works where other films fail - it will work with contours and a degree of hemispherical stretches, like corners and ridges, which are impossible for other in-mold films. This allows for larger labels and **expanded placement** options.
- **Unsurpassed Graphics**
  Grafilm labels provide superior graphics that will not fade, bleed, chip, or peel. You can be assured that your messaging and logo will **last the life of the product**.
- **Sustainable**
  Grafilm is completely recyclable. It contains no adhesives. Grafilm does not require a liner so it produces **less waste** than pressure-sensitive labels.
- **Manufacturing Flexibility and Cost Efficiency**
  Because Grafilm is micro-porous, it **works with all resins**. This eliminates the need for engineering development to match the IML film to the resin in use. It also allows the use of lower cost or recycled resins. Grafilm has a high coefficient of friction to steel and aluminum. This means the Grafilm label will not move in the mold and will **reduce scrap rates** associated with label placement. Grafilm adapts to existing molds and tooling, requiring **no costly mold modification**.

Customer Quote

"We are very pleased with the impact Grafilm has made in our molding process and Grafilm has definitely impacted our manufacturing efficiency. Our scrap rates are down to ½% (Vs. 5 to 10% with our previous supplier) and because of that we have also lowered our overall cost of assemble."

- Ken Bowers
Operations tooling lead for Scotts Temecula

TAYLOR COMMUNICATIONS

Grafilm® Ultra

Grafilm Ultra is **the most durable IML on the market today**. Grafilm Ultra offers all the advantages of Grafilm **PLUS** increased abrasion resistance, chemical resistance, optional additional UV protection and shaping capabilities. Grafilm Ultra is the choice for labels that come in contact with abrasive materials, hard particles or have irregular surfaces.

Thermal Shock Cycling

Molded parts were placed in a controlled oven at 180°F for a minimum of one hour. Upon removal, the parts were flexed and inspected for separation of label from the resin. The parts were then placed in a freezer at 15°F for a minimum of one hour. Upon removal, the parts were flexed and inspected for label separation and surface cracking. The test consisted of six cycles of heat and cold.

Grafilm® Ultra
> 6 Cycles

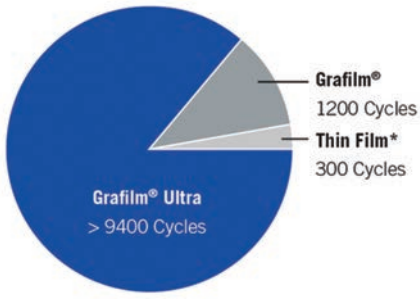
Grafilm®
> 6 Cycles

Thin Film*
4 Cycles

*Label separation from center
- stays attached on outer edges*

Abrasion Resistance

Samples were molded to ABS, unless otherwise noted, and cut into 3x4" sections, and then applied to a Taber® Abrader with 500g load using CS-10 wheels.



Sample mounted to Taber Abrader test plate, not molded to ABS

Chemical Resistance

Grafilm Ultra delivers superior chemical resistance

MATERIAL	THIN FILM	GRAFILM®	GRAFILM® ULTRA
Salt Water	> 500	> 500	> 1,000
Kitchen Cleaner	> 500	> 500	> 1,000
Liquid Fertilizer (Miracle Gro™)	> 500	> 500	> 1,000
Brake Fluid	60	> 500	> 1,000
IPA 95%	42	250	> 1,000
Oil (10w-30)	> 500	> 500	> 1,000
Goo Gone™	> 500	> 500	> 1,000
Bleach	> 500	> 500	> 1,000
Car Wash	> 500	> 500	> 1,000
Purell™	> 500	> 500	> 1,000
Mineral Spirits	> 500	> 500	> 1,000
Bug and Tar Remover	> 500	> 500	> 1,000
Armor All Protectant™	> 500	> 500	> 1,000
Soft Scrub™	20	> 500	> 1,000
Acetone	50	50	> 1,000

Test condition: Samples were rubbed with a new cotton swab soaked in the chemical. One pass up and back represents a cycle. Medium to heavy pressure was used. ***Additional testing available upon request.***

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