




# UL - 94 Flammability Testing

**UL 94 Flammability Testing** is the first step toward obtaining a plastic recognition and subsequent listing in the "Plastics Recognized Component Directory" (former known as "Yellow Cards"). UL 94 contains the following tests: 94HB, 94V, 94VTM, 94-5V, 94HBF, 94HF and Radiant Panel.

The following is a brief description of three tests that apply to stock shape products (sheet, rod, tube and film) and how the rating system works. This is not meant as a procedure for running the tests nor as a way of determining the acceptability of a material for a particular application.

UL 94 Flammability Ratings Summary	
<b>Surface Burn</b> 	<p align="center"><b>Doesn't ignite under hotter flame</b></p> <p align="center">UL 94 5VA UL 94 5VB</p>
<b>Vertical Burn</b> 	<p align="center"><b>Self extinguishing</b></p> <p align="center">UL 94 V-0 (Best) UL 94 V-1 (Good) UL 94 V-2 (Drips)</p>
<b>Horizontal Burn</b> 	<p align="center"><b>Slow burn rating</b></p> <p align="center">Takes more than 3 min. to burn 4 inches</p>
<b>5VA Surface Burn</b>	Burning stops within 60 seconds after five applications of five seconds each of a flame (larger than that used in Vertical Burn testing) to a test bar. Test specimens MAY NOT have a burn-through (no hole). This is the highest (most flame retardant) UL94 rating.
<b>5VB Surface Burn</b>	Burning stops within 60 seconds after five applications of five seconds each of a flame (larger than that used in Vertical Burn testing) to a test bar. Test specimens MAY HAVE a burn-through (a hole).
<b>V-0 Vertical Burn</b>	Burning stops within 10 seconds after two applications of ten seconds each of a flame to a test bar. NO flaming drips are allowed.
<b>V-1 Vertical Burn</b>	Burning stops within 60 seconds after two applications of ten seconds each of a flame to a test bar. NO flaming drips are allowed.
<b>V-2 Vertical Burn</b>	Burning stops within 60 seconds after two applications of ten seconds each of a flame to a test bar. Flaming drips ARE allowed.
<b>H-B Horizontal Burn</b>	Slow horizontal burning on a 3mm thick specimen with a burning rate is less than 3"/min or stops burning before the 5" mark. H-B rated materials are considered "self-extinguishing". This is the lowest (least flame retardant) UL94 rating.