



# PORT PLASTICS

## Semiconductor



## Aerospace FAR 25.853 Flame Retardancy Test

Fuel consumption is critical in the design and development of aircraft. One such way to increase fuel efficiency is to reduce the weight of the aircraft itself. Given that the specific gravity of Titanium is 4.5 and Aluminum at 2.7, plastic materials such as PEEK with an specific gravity of 1.3 and PPS with a specific gravity of 1.35 provide excellent alternatives to reduce weight in the design of applications on aircraft. While plastic materials provide an excellent opportunity to assist the engineers in achieving overall aircraft efficiency the materials must not compromise the safety of the aircraft for passengers and crew. One such safety measure relates to the level of fire retardancy of the plastic material. Materials must allow for the evacuation of passengers in the event of a situation. For this reason, the US FAA (Federal Aviation Administration) developed regulation FAR 25.853 (Federal Aviation Regulation) to evaluate cabin and cargo compartment materials for fire retardancy performance. Section 25 refers to large aircraft and 853 refers to interiors. FAR 25.853a is a Bunsen burner vertical burn test used to determine the flammability of materials used in the interiors of aircraft. Test samples are tested to either a 12 second or a 60 second time duration by exposure to the flame.

Materials are then characterized by four factors:

**IGNITION TIME** – Length of time the burner is applied to the specimen

**FLAME TIME** – Time in seconds that the specimen continues to flame after the burner flame is removed

**DRIP FLAME TIME** – Time in seconds that any flaming material continues to flame after falling from the specimen

**BURN LENGTH** – Distance from original specimens edge to the farthest evidence of damage to the specimen

There are many types of materials available that meet FAR 25.9853 compliance. Whether its for seating components such as trays, decorative trim, or structural components Port Plastics has a compliant material that meets your needs and experts ready to assist you in the selection of materials.

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