



Plastic pallets are used across all supply chains to move commodities. Due to their size, they require fire retardancy that makes the plastic weaker and heavier. This leads to pallets consisting of 20% fire retardant by weight, which reduces the strength while increasing the weight.

Aluminum Hydrates or Ammonium Phosphate fire retardants expand and release gases to slow down fires. These fire retardants also make the plastic denser and heavier. Due to the reduced strength FR provides, the plastic also needs to be thicker to support the weight of the product.

Pipedream's fire retardant works by absorbing the heat and then slowly releasing it over time reducing the heat released and preventing further oxidation of the plastic. The fire retardant also converts the plastic crystal into charr preventing liquid plastic from dripping and pooling.

With Pipedream's fire retardant, the dosage goes from 20% to 2% reducing the density and weight of the plastic pallet. This means that supply chains are more efficient, reducing up to 15lb of FR weight from each pallet.

The plastic also exhibits a higher max load and higher tensile strength when compared to virgin plastic. The increase in the max load is about 10% and the tensile strength increase is about 14%. This means more products can be moved per pallet than before. In situations of breakage, the plastic shows to break ductility. This means if a pallet were to fail, the plastic will not become shards and cause more harm.

	Pipedream's FR Additive (2%)	Conventional FR Additive (20-25%)
PHHR (Peak Heat Release Rate)	450	400
Breaking Characteristics	Ductile	Brittle/Brittle-Ductile
Max Load	1011 N	913 N
Tensile Strength	13.3	11.9 MPa