

TRIBOELECTRIC SERIES

The Greek philosopher and mathematician, Thales of Miletus observed, in around 600 BC, that by rubbing amber with wool, the amber could be made to attract small items like leaves or dust. This is known as the triboelectric effect.

In 1757, the Swedish physicist, Johan Carl Wilcke, published the first Triboelectric Series: a list that ranks materials according to their tendency to gain or lose electrons and therefore how quickly a material develops a charge relative to other materials on the list.

This list is not exhaustive but serves to illustrate that many industrial plastics will develop a charge easily and that this charge is of a negative polarity.

POSITIVE	Human hands
Tends to lose electrons	Rabbit fur
↑	Acetate
	Glass
	Mica
	Human hair
	Nylon
	Wool
	Fur
	Lead
	Silk
	Aluminium
	Paper
NEUTRAL	COTTON
↓	Steel
	Wood
	Amber
	Sealing wax
	Hard rubber
	BoPet
	Nickel, copper
	Silver
	Brass
	Gold, platinum
	Sulphur
	Acetate rayon
	Polyester
	Celluloid
	Acrylic
	Plastic food wrap
	Polyurethane
	Polyethylene
	Polypropylene
	PVC (vinyl)
PCTFE	
Silicon	
Tends to gain electrons	PTFE
NEGATIVE	Silicone rubber