

A hand is shown reaching towards a brass door handle. A blue lightning bolt, representing a static shock, is depicted between the hand and the handle. The background is split: dark on the left and gold on the right.

Why are some materials
more likely to give us a
static shock than others?

Study*ladder*

When you rub materials together, some materials are more likely to give up their electrons. Other materials hold on more tightly to their electrons.



Triboelectric Series

When two substances rub together, which substance is more likely to become positively or negatively charged?

The Triboelectric Series ranks materials in order from most positively charged to most negatively charged.

This means that if two materials from the list are rubbed together, the one higher up the list is more likely to give up its electrons to the other one and become more positively charged.

So if you rub a balloon made of rubber on your hair, the atoms from your hair will give up their electrons to the balloon. Your hair will become more positively charged and the strands will repel each other. If you were to hold the negatively charged balloon near some more positively charged pieces of paper you might find they will stick together.



Studyladder



+ charged

polyurethane foam
hair, oily skin
dry skin, nylon
glass
acrylic
leather
rabbit's fur
quartz
mica
cat's fur
silk
aluminium
paper
cotton
wool

0 charged

steel
wood
amber
wax
polystyrene
rubber balloon
resin
copper, nickel
brass, silver
rayon
synthetic rubber
polyester
plastic wrap
sticky tape
vinyl
silicon
teflon
silicone rubber
ebonite

- charged