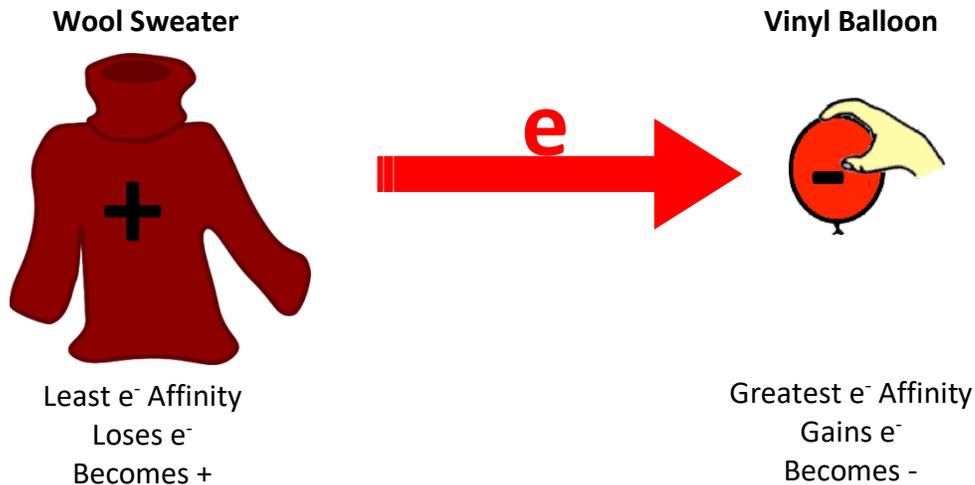


Triboelectric Charging Video Notes

Triboelectric Charging

- a charging process that typically involves rubbing two insulating objects together
- results in the transfer of electrons from the material with the smallest electron affinity to the material with the greatest electron affinity



Triboelectric Series

- Ranking of materials based on their relative affinity for electrons.
- The provided diagram shows materials with the greatest electron affinity being highest on the charts.

Observation #1:
X rubbed with Cotton
X becomes +



X has lesser
 e^- affinity
than Cotton

Observation #2:
X rubbed with Wool
X becomes -



X has greater
 e^- affinity
than Wool

Teflon
Vinyl
Polyethylene
Polyester
Acrylic
Natural Rubber
Wood
Cotton
Paper
X { Aluminum
Silk
Wool
Glass
Acetate
Rabbit Fur

Smallest
 e^- Affinity

Producing a Triboelectric Series

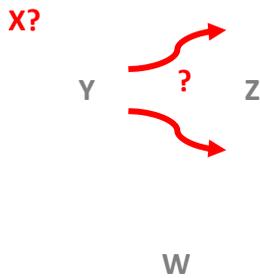
By performing triboelectric charging experiments with a collection of materials, you can produce your own triboelectric series.

The General Rule:

When two materials are rubbed together, the one with the greatest e^- affinity becomes $-$.

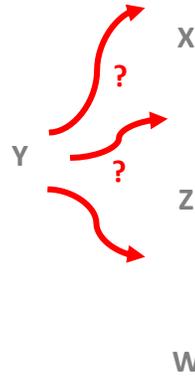
	Test	Result
1	Rub W and Y	W is +, Y is -
2	Rub W and Z	W is +, Z is -
3	Rub X and Z	X is -, Z is +
4	Rub Y and Z	Y is +, Z is -

Rows 1 and 2:



Y and Z both have a greater e^- affinity than W. But we don't know how they compare to each other or to X.

Row 3:



X has a greater e^- affinity than Z. But we don't know how Y's e^- affinity compares to X or to Z.

Row 4:



The ranking can now be finalized. From Greatest to Least e^- Affinity:
 $X > Y > Z > W$