

Pre-lab assignment for the Electric Charge experiment

Name: _____

Date: _____

Below is an excerpt of the triboelectric series:

MORE POSITIVE

rabbit's fur

glass

nylon

cat's fur

silk

polyethylene

rubber balloon

MORE NEGATIVE

When two of the materials from this list are rubbed together, the one higher up the list ends up with a positive charge, and the one lower down the list ends up with a negative charge.



An uncharged electroscope, on the left, and a charged electroscope, on the right.

In the questions below, about an experiment involving an electroscope, select from the choices A – D that will best describe the experimental observations.

- A. The arm remains in its original position
- B. The arm deflects from an originally undeflected position
- C. The arm deflects more from an originally deflected position
- D. The arm deflects less from an originally deflected position

(a) A polyethylene rod is rubbed with cat's fur, then brought close to an uncharged electroscope (but the rod does not touch the electroscope). The rotating arm of the electroscope ...

A B C D

(b) If the polyethylene rod is then taken away from the electroscope without touching it, the rotating arm of the electroscope ...

A B C D

(c) Suppose instead the polyethylene rod is brought in contact with the electroscope and rubbed against it before being taken away.

(i) Imagine a nylon rod previously rubbed with silk is then brought close to this electroscope without touching it. The rotating arm of the electroscope ...

A B C D

(ii) Imagine instead a rubber balloon previously rubbed with cat's fur is then brought close to this electroscope without touching it. The rotating arm of the electroscope ...

A B C D