

### Question #57916, Chemistry / Organic Chemistry

All these are electron donating groups with respect to reactivity and orientation, except:

-OH, -O-R, -NH-CO-R, -C≡N

**Answer:**

There is one strong acceptor group between the listed substituents – it is the nitrile group -C≡N, which possesses negative inductive and mesomeric effects due to the highly unsaturated nature of C≡N triple bond with *sp* hybridized electron orbitals of carbon atom. Also, formation of resonance structures with positively charged carbon makes a significant contribution to the electrophilic nature of nitrile group:

