

Question #46437, Chemistry, Inorganic Chemistry

i) The dipole moment of HBr is 2.602×10^{-30} C m and its bond length is 141 pm. Calculate its percentage ionic character.

Answer:

m- dipole moment

e- electron charge ($1.602 \cdot 10^{-19}$)

d- bond length

X - ionicity connection

$$X = m / (e \cdot d)$$

$$X = (2.602 \cdot 10^{-30}) / (1.602 \cdot 10^{-19} \cdot 141 \cdot 10^{-12}) = 0.115$$

$$0.115 \cdot 100 \% = \mathbf{11.5 \%}$$