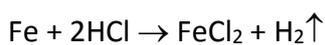


Answer on Question #44156 - Chemistry - Physical Chemistry

Question:

What minimum mass of HCl{\rm HCl} in grams would you need to dissolve a 2.2g{\rm g} iron bar on a padlock?

Solution:



$$n(\text{Fe}) = \frac{m(\text{Fe})}{M(\text{Fe})} = \frac{2,2 \text{ g}}{56 \text{ g/mole}} = 0.039 \text{ mole}$$

M (Fe) - Formula mass

$$n(\text{HCl}) = 2n(\text{Fe}) = 2 \cdot 0.039 \text{ mole} = 0.078 \text{ mole}$$

$$m(\text{HCl}) = n(\text{HCl}) \cdot M(\text{HCl}) = 0.078 \cdot 36.6 \text{ g/mole} = 2.8 \text{ g.}$$

Answer: 2.8 g.