

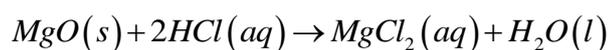
Answer on Question #54465 – Chemistry – Inorganic Chemistry

Question:

A patient took some tablets containing magnesium oxide to relieve his gastric pain, which was caused by excess hydrochloric acid. Each tablet contains 3.0g of magnesium oxide. How many tablets should he take to relieve the pain?

Solution

If his stomach contains the equivalent of 100 cm^3 of excess hydrochloric acid of concentration 3.00 mol/dm^3 .



Since No of moles = Molarity x volume

No of moles of HCl = $3.00 \times (100/1000) = 0.30$

From the equation, Mole ratio of $\text{MgO}:\text{HCl} = 1:2$

No of moles of MgO = $0.30/2 = 0.15$

Mass of MgO needed = no of moles of MgO x molar mass of MgO = $0.15 \cdot (24+16) = 6.0\text{g}$

No of MgO tablet needed = $6/3 = 2$

Answer: 2 tablets