# Calculating Amounts in Reactions

1. Work out the relative formula masses of the following compounds:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 1. CH4 | 2.CO2 | 3.NH3 | 4.NaOH | 5.HCl |
| 6. H2O | 7. C3H8 | 8.H2SO4 | 9.MgSO4 | 10. HNO3 |

1. How many moles of:

|  |  |  |
| --- | --- | --- |
| 1. CH4 in 48g? | 1. CO2 in 66g? | 1. HCl in 73g? |
| 1. H2SO4 in 49g? | 1. H2O in 4.5g? | 1. HNO3 in 6.3g? |

1. What are the ratios of underlined chemicals in the following reactions?
2. HC*l* + NaOH 🡪 NaC*l* + H2O
3. H2SO4 + 2NaOH 🡪 Na2SO4 + 2H2O
4. CH4 + 2O2 🡪 CO2 + 2H2O
5. 2HNO3  + Mg 🡪 Mg(NO3)2 + H2
6. In each case use the equation and amounts provided to deduce the mass of the underlined compound.

|  |
| --- |
| 1. H2SO4 + 2NaOH 🡪 Na2SO4 + 2H2O   When starting with 49g of H2SO4 |
| 1. CH4 + 2O2 🡪 CO2 + 2H2O   When starting with 48g of CH4 |
| 1. HC*l* + NaOH 🡪 NaC*l* + H2O   When 58.5g of NaC*l* is produced |
| 1. 2HNO3  + Mg 🡪 Mg(NO3)2 + H2   When 74g of Mg(NO3)2 is produced |

Creative Commons Licence Calculating Amounts In Reactions Scaffolding by I Sadler (2017) of [English Martyrs’ Catholic School.](http://www.englishmartyrs.org)  This work is licensed under a [Creative Commons Attribution 4.0 International License](http://creativecommons.org/licenses/by/4.0/).