Formulier afdrukken

Klas 3 Scheikunde

Oefenopgaven kloppend maken reactievergelijkingen

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 1. | …K (s) + …Br2 (l) | | | Æ …KBr (s) |
| 2. | …KClO3 (s) | Æ …KCl (s) + …O2 (g) | | |
| 3. | …N2 (g) + | …H2 | (g) | Æ …NH3 (g) |
| 4. | …Na (s) + | …O2 | (g) | Æ …Na2O (s) |
| 5. | …P (s) + …Cl2 (g) Æ …PCl3 (s) | | | |
| 6. | …SO2 (g) + …O2 (g) Æ …SO3 (g) | | | |
| 7. | …ZnO (s) Æ …Zn (s) + …O2 (g) | | | |
| 8. | …C3H8 (g) + …O2 (g) Æ …CO2 (g) + …H2O (g) | | | |
| 9. | …P2O3 (s) Æ …P (s) + …O2 (g) | | | |

1. …Al (s) + …Cl2 (g) Æ …AlCl3 (s)
2. …C2H4 (s) + …O2 (g) Æ …CO2 (g) + …H2O (g)
3. …CS2 (g) + …O2 (g) Æ …CO2 (g) + …SO2 (g)
4. …Sb2O5 (s) + …HCl (g) Æ …SbCl5 (s) + …H2O (g)
5. …NH3 (g) + …NO (g) Æ …N2 (g) + …H2O (l)
6. …C4H10 (g) + …O2 (g) Æ …CO2 (g) + …H2O (g)

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| 16. | …Fe (s) + …O2 (g) Æ …Fe2O3 (s) | | | |  |
| 17. | …FeCl3 (s) + …Na (s) Æ …Fe (s) + …NaCl (s) | | | | |
| 18. | …C5H10 | (g) + …O2 | (g) Æ …CO2 | (g) | + …H2O (g) |
| 19. | …C6H14 | (g) + …O2 | (g) Æ …CO2 | (g) | + …H2O (g) |

1. …C3H7NO2 (g) + …O2 (g) Æ …CO2 (g) + …H2O (g) + …N2 (g)
2. …H2S (g) + …O2 (g) Æ …SO2 (g) + …H2O (g)
3. …NH4Br (s) Æ …N2 (g) + …H2 (g) + …Br2 (g)

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| 23. | …Fe2O3 (s) + …C (s) Æ …CO (g) | + | …Fe (s) |
| 24. | …CON2H4 (aq) Æ …C3N6H6 (l) + | …CO2 (g) + …NH3 (g) | |
| 25. | …Al (s) + …HBr (aq) Æ …AlBr3 (aq) + …H2 (g) | | |
| 26. | …CuO (s) + …C (s) Æ…CO2 (g) | + | …Cu (s) |
| 27. | …K (s) + …O2 (g) Æ …K2O (s) |  |  |
| 28. | …C6H6 (l) + …O2 (g) Æ …CO2 (g) | | + …H2O (g) |

1. …P (s) + …Br2 (l) Æ …PBr5 (s)
2. …NH3 (g) + …O2 (g) Æ …N2 (g) + …H2O (g)
3. …H2S (g) + …HNO3 (aq) Æ …H2O (l) + …NO (g) + …S (s)
4. …FeS2 (s) + …O2 (g) Æ …Fe2O3 (s) + …SO2 (g)
5. …CH4 (g) + H2O (g) Æ …CO (g) + …H2 (g)

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| 34. | …NH4Cl (s) | + …CaO2H2 | Æ …CaCl2 (s) + | | …NH3 (g) + …H2O (l) | |
| 35. | …TiO2 (s) + | …CO (g) + | …Cl2 (g) Æ …TiCl4 | | | (s) + …CO2 (g) |
| 36. | …FeS2 (s) + | …O2 (g) Æ …Fe2O3 (s) + | | …SO2 | | (g) |
| 37. | …C6H6O (l) | + …O2 (g) Æ …CO2 (g) | | + | …H2O (g) | |
| 38. | …Na (s) + | …H2 (g) Æ …NaH (s) | |  |  |  |

1. …CO2 (g) + …H2O (l) Æ …C6H12O6 (s) + …O2 (g)
2. …KO2 (s) + …H2O (g) Æ …KOH (s) + …O2 (g)

Extra oefenen:

**Lavoisier.exe** downloaden van:http://home.hetnet.nl/mr\_3/213/alchemilab/

On line: http://www.thiememeulenhoff.nl/assets/curie/Lecture%20notes/rxnbalancingcsn7.html

On line: http://www.deringvanputten.nl/files/Scheikunde/klas3/introrv.htm

Klas 3 Scheikunde

**Antwoorden** kloppend maken reactievergelijkingen

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 1. | 2 | K (s) + …Br2 (l) Æ 2 KBr (s) | | | |  |  |
| 2. | 2 | KClO3 (s) |  | Æ 2 KCl (s) + 3 O2 (g) | |  |  |
| 3. | …N2 (g) + | | 3 H2 (g) Æ 2 NH3 (g) | | |  |  |
| 4. | 4 | Na (s) + | …O2 (g) Æ 2 Na2O (s) | | |  |  |
| 5. | 2 | P (s) + 3 Cl2 (g) Æ | | | 2 PCl3 (s) |  |  |
| 6. | 2 SO2 (g) + | |  | …O2 (g) Æ 2 SO3 (g) | |  |  |
| 7. | 2 | ZnO (s) Æ 2 Zn (s) + | | | …O2 (g) |  |  |
| 8. | …C3H8 (g) + | | | 5 O2 (g) Æ 3 CO2 (g) + | | 4 H2O (l) | |
| 9. | 2 | P2O3 (s) Æ 4 P (s) + | | | 3 O2 (g) |  |  |
| 10. | 2 | Al (s) + | 3 Cl2 (g) Æ | | 2 AlCl3 (s) |  |  |
| 11. | …C2H4 (s) | | + | 3 O2 (g) Æ 2 CO2 (g) | | + | 2 H2O (g) |
| 12. | …CS2 (g) + | |  | 3 O2 (g) Æ …CO2 (g) + | | 2 SO2 (g) | |
| 13. | …Sb2O5 (s) | |  | + 10 HCl (g) Æ 2 SbCl5 (s) + 5 H2O (g) | | | |
| 14. | 4 | NH3 (g) + |  | 6 NO (g) | Æ 5 N2 (g) + | 6 H2O (l) | |
| 15. | 2 | C4H10 (g) | + | 13 O2 (g) Æ 8 CO2 (g) | | + | 10 H2O (g) |
| 16. | 4 | Fe (s) + 3 O2 (g) Æ | | | 2 Fe2O3 (s) |  |  |
| 17. | …FeCl3 (s) + 3 Na (s) Æ …Fe (s) + 3 NaCl (s) | | | | | | |
| 18. | 2 | C5H10 (g) + 15 O2 (g) Æ 10 CO2 (g) | | | | + | 10 H2O (g) |
| 19. | 2 | C6H14 (g) + 19 O2 (g) Æ 12 CO2 (g) | | | | + | 14 H2O (g) |
| 20. | 4 C3H7NO2 (g) + 15 O2 (g) Æ 12 CO2 (g) | | | | | | + 14 H2O (g) |

Op de plekken waar nu niets ingevuld is, mag je ook een 1 neerzetten.

Pas op: een 0 kan nooit!

Soms heb je iets anders, maar klopt je oplossing wel. Je kunt dan vaak nog alles door 2 delen. Dit moet ook.

Opgave 24 en 31 zijn echt moeilijk, het geeft niet als deze niet lukken.

+ 2 N2 (g)

1. 2 H2S (g) + 3 O2 (g) Æ 2 SO2 (g) + 2 H2O (g)
2. 2 NH4Br (s) Æ …N2 (g) + 4 H2 (g) + …Br2 (g)
3. …Fe2O3 (s) + 3 C (s) Æ 3 CO (g) + 2 Fe (s)

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| 24. | 6 CON2H4 (aq) Æ …C3N6H6 (l) + 3 CO2 (g) + 6 NH3 (g) | | | | | | | | | | |
| 25. | 2 | Al (s) + |  | 6 HBr (aq) Æ 2 AlBr3 (aq) + | | | |  | 3 H2 (g) |  |  |
| 26. | 2 CuO (s) + …C (s) Æ…CO2 (g) + | | | | | | 2 Cu (s) | | |  |  |
| 27. | 4 | K (s) + | …O2 (g) Æ 2 K2O (s) | | | |  |  |  |  |  |
| 28. | 2 | C6H6 (l) |  | + | 15 O2 (g) Æ 12 CO2 (g) | | + | 6 | H2O (g) |  |  |
| 29. | 2 | P (s) + | 5 Br2 (l) Æ 2 PBr5 (s) | | | |  |  |  |  |  |
| 30. | 4 | NH3 (g) + 3 O2 (g) Æ 2 N2 (g) + 6 H2O (g) | | | | | | |  |  |  |
| 31. | 3 | H2S (g) + | | 2 HNO3 (aq) | | Æ 4 H2O (l) + | | 2 | NO (g) | + | 3 S (s) |
| 32. | 4 | FeS2 (s) + | |  | 11 O2 (g) Æ 2 Fe2O3 (s) + | | | 8 | SO2 (g) |  |  |
| 33. | …CH4 (g) + | | |  | H2O (g) Æ …CO (g) + | | 3 H2 (g) | | |  |  |
| 34. | 2 NH4Cl (s) + | | | | …CaO2H2 | Æ …CaCl2 (s) + | |  | 2 NH3 (g) | | + 2 H2O (l) |
| 35. | …TiO2 (s) | | | + | 2 CO (g) + | 2 Cl2 (g) Æ …TiCl4 (s) + | | | | 2 CO2 (g) | |
| 36. | 4 | FeS2 (s) + | |  | 11 O2 (g) Æ | 2 Fe2O3 (s) | + | 8 | SO2 (g) |  |  |
| 37. | …C6H6O (l) | | | | + 7 O2 (g) Æ 6 CO2 (g) + | | |  | 3 H2O (g) | |  |
| 38. | 2 | Na (s) + |  | …H2 (g) Æ | | 2 NaH (s) |  |  |  |  |  |

1. 6 CO2 (g) + 6 H2O (l) Æ …C6H12O6 (s) + 6 O2 (g)
2. 4 KO2 (s) + 2 H2O (g) Æ 4 KOH (s) + 3 O2 (g)

Extra oefenen:

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On line: http://www.thiememeulenhoff.nl/assets/curie/Lecture%20notes/rxnbalancingcsn7.html On line: http://www.deringvanputten.nl/files/Scheikunde/klas3/introrv.htm