

Oefenopgaven kloppend maken reactievergelijkingen

1. $\dots \text{K (s)} + \dots \text{Br}_2 \text{ (l)} \rightarrow \dots \text{KBr (s)}$
2. $\dots \text{KClO}_3 \text{ (s)} \rightarrow \dots \text{KCl (s)} + \dots \text{O}_2 \text{ (g)}$
3. $\dots \text{N}_2 \text{ (g)} + \dots \text{H}_2 \text{ (g)} \rightarrow \dots \text{NH}_3 \text{ (g)}$
4. $\dots \text{Na (s)} + \dots \text{O}_2 \text{ (g)} \rightarrow \dots \text{Na}_2\text{O (s)}$
5. $\dots \text{P (s)} + \dots \text{Cl}_2 \text{ (g)} \rightarrow \dots \text{PCl}_3 \text{ (s)}$

6. $\dots \text{SO}_2 \text{ (g)} + \dots \text{O}_2 \text{ (g)} \rightarrow \dots \text{SO}_3 \text{ (g)}$
7. $\dots \text{ZnO (s)} \rightarrow \dots \text{Zn (s)} + \dots \text{O}_2 \text{ (g)}$
8. $\dots \text{C}_3\text{H}_8 \text{ (g)} + \dots \text{O}_2 \text{ (g)} \rightarrow \dots \text{CO}_2 \text{ (g)} + \dots \text{H}_2\text{O (g)}$
9. $\dots \text{P}_2\text{O}_3 \text{ (s)} \rightarrow \dots \text{P (s)} + \dots \text{O}_2 \text{ (g)}$
10. $\dots \text{Al (s)} + \dots \text{Cl}_2 \text{ (g)} \rightarrow \dots \text{AlCl}_3 \text{ (s)}$

11. $\dots \text{C}_2\text{H}_4 \text{ (s)} + \dots \text{O}_2 \text{ (g)} \rightarrow \dots \text{CO}_2 \text{ (g)} + \dots \text{H}_2\text{O (g)}$
12. $\dots \text{CS}_2 \text{ (g)} + \dots \text{O}_2 \text{ (g)} \rightarrow \dots \text{CO}_2 \text{ (g)} + \dots \text{SO}_2 \text{ (g)}$
13. $\dots \text{Sb}_2\text{O}_5 \text{ (s)} + \dots \text{HCl (g)} \rightarrow \dots \text{SbCl}_5 \text{ (s)} + \dots \text{H}_2\text{O (g)}$
14. $\dots \text{NH}_3 \text{ (g)} + \dots \text{NO (g)} \rightarrow \dots \text{N}_2 \text{ (g)} + \dots \text{H}_2\text{O (l)}$
15. $\dots \text{C}_4\text{H}_{10} \text{ (g)} + \dots \text{O}_2 \text{ (g)} \rightarrow \dots \text{CO}_2 \text{ (g)} + \dots \text{H}_2\text{O (g)}$

16. $\dots \text{Fe (s)} + \dots \text{O}_2 \text{ (g)} \rightarrow \dots \text{Fe}_2\text{O}_3 \text{ (s)}$
17. $\dots \text{FeCl}_3 \text{ (s)} + \dots \text{Na (s)} \rightarrow \dots \text{Fe (s)} + \dots \text{NaCl (s)}$
18. $\dots \text{C}_5\text{H}_{10} \text{ (g)} + \dots \text{O}_2 \text{ (g)} \rightarrow \dots \text{CO}_2 \text{ (g)} + \dots \text{H}_2\text{O (g)}$
19. $\dots \text{C}_6\text{H}_{14} \text{ (g)} + \dots \text{O}_2 \text{ (g)} \rightarrow \dots \text{CO}_2 \text{ (g)} + \dots \text{H}_2\text{O (g)}$
20. $\dots \text{C}_3\text{H}_7\text{NO}_2 \text{ (g)} + \dots \text{O}_2 \text{ (g)} \rightarrow \dots \text{CO}_2 \text{ (g)} + \dots \text{H}_2\text{O (g)} + \dots \text{N}_2 \text{ (g)}$

21. $\dots \text{H}_2\text{S (g)} + \dots \text{O}_2 \text{ (g)} \rightarrow \dots \text{SO}_2 \text{ (g)} + \dots \text{H}_2\text{O (g)}$
22. $\dots \text{NH}_4\text{Br (s)} \rightarrow \dots \text{N}_2 \text{ (g)} + \dots \text{H}_2 \text{ (g)} + \dots \text{Br}_2 \text{ (g)}$
23. $\dots \text{Fe}_2\text{O}_3 \text{ (s)} + \dots \text{C (s)} \rightarrow \dots \text{CO (g)} + \dots \text{Fe (s)}$
24. $\dots \text{CON}_2\text{H}_4 \text{ (aq)} \rightarrow \dots \text{C}_3\text{N}_6\text{H}_6 \text{ (l)} + \dots \text{CO}_2 \text{ (g)} + \dots \text{NH}_3 \text{ (g)}$
25. $\dots \text{Al (s)} + \dots \text{HBr (aq)} \rightarrow \dots \text{AlBr}_3 \text{ (aq)} + \dots \text{H}_2 \text{ (g)}$

26. $\dots \text{CuO (s)} + \dots \text{C (s)} \rightarrow \dots \text{CO}_2 \text{ (g)} + \dots \text{Cu (s)}$
27. $\dots \text{K (s)} + \dots \text{O}_2 \text{ (g)} \rightarrow \dots \text{K}_2\text{O (s)}$
28. $\dots \text{C}_6\text{H}_6 \text{ (l)} + \dots \text{O}_2 \text{ (g)} \rightarrow \dots \text{CO}_2 \text{ (g)} + \dots \text{H}_2\text{O (g)}$
29. $\dots \text{P (s)} + \dots \text{Br}_2 \text{ (l)} \rightarrow \dots \text{PBr}_5 \text{ (s)}$
30. $\dots \text{NH}_3 \text{ (g)} + \dots \text{O}_2 \text{ (g)} \rightarrow \dots \text{N}_2 \text{ (g)} + \dots \text{H}_2\text{O (g)}$

31. $\dots \text{H}_2\text{S (g)} + \dots \text{HNO}_3 \text{ (aq)} \rightarrow \dots \text{H}_2\text{O (l)} + \dots \text{NO (g)} + \dots \text{S (s)}$
32. $\dots \text{FeS}_2 \text{ (s)} + \dots \text{O}_2 \text{ (g)} \rightarrow \dots \text{Fe}_2\text{O}_3 \text{ (s)} + \dots \text{SO}_2 \text{ (g)}$
33. $\dots \text{CH}_4 \text{ (g)} + \text{H}_2\text{O (g)} \rightarrow \dots \text{CO (g)} + \dots \text{H}_2 \text{ (g)}$
34. $\dots \text{NH}_4\text{Cl (s)} + \dots \text{CaO}_2\text{H}_2 \rightarrow \dots \text{CaCl}_2 \text{ (s)} + \dots \text{NH}_3 \text{ (g)} + \dots \text{H}_2\text{O (l)}$
35. $\dots \text{TiO}_2 \text{ (s)} + \dots \text{CO (g)} + \dots \text{Cl}_2 \text{ (g)} \rightarrow \dots \text{TiCl}_4 \text{ (s)} + \dots \text{CO}_2 \text{ (g)}$

36. $\dots \text{FeS}_2 \text{ (s)} + \dots \text{O}_2 \text{ (g)} \rightarrow \dots \text{Fe}_2\text{O}_3 \text{ (s)} + \dots \text{SO}_2 \text{ (g)}$
37. $\dots \text{C}_6\text{H}_6\text{O (l)} + \dots \text{O}_2 \text{ (g)} \rightarrow \dots \text{CO}_2 \text{ (g)} + \dots \text{H}_2\text{O (g)}$
38. $\dots \text{Na (s)} + \dots \text{H}_2 \text{ (g)} \rightarrow \dots \text{NaH (s)}$
39. $\dots \text{CO}_2 \text{ (g)} + \dots \text{H}_2\text{O (l)} \rightarrow \dots \text{C}_6\text{H}_{12}\text{O}_6 \text{ (s)} + \dots \text{O}_2 \text{ (g)}$
40. $\dots \text{KO}_2 \text{ (s)} + \dots \text{H}_2\text{O (g)} \rightarrow \dots \text{KOH (s)} + \dots \text{O}_2 \text{ (g)}$

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>

Antwoorden kloppend maken reactievergelijkingen

1. $2 \text{ K (s)} + \dots \text{ Br}_2 \text{ (l)} \rightarrow 2 \text{ KBr (s)}$
2. $2 \text{ KClO}_3 \text{ (s)} \rightarrow 2 \text{ KCl (s)} + 3 \text{ O}_2 \text{ (g)}$
3. $\dots \text{ N}_2 \text{ (g)} + 3 \text{ H}_2 \text{ (g)} \rightarrow 2 \text{ NH}_3 \text{ (g)}$
4. $4 \text{ Na (s)} + \dots \text{ O}_2 \text{ (g)} \rightarrow 2 \text{ Na}_2\text{O (s)}$
5. $2 \text{ P (s)} + 3 \text{ Cl}_2 \text{ (g)} \rightarrow 2 \text{ PCl}_3 \text{ (s)}$
6. $2 \text{ SO}_2 \text{ (g)} + \dots \text{ O}_2 \text{ (g)} \rightarrow 2 \text{ SO}_3 \text{ (g)}$
7. $2 \text{ ZnO (s)} \rightarrow 2 \text{ Zn (s)} + \dots \text{ O}_2 \text{ (g)}$
8. $\dots \text{ C}_3\text{H}_8 \text{ (g)} + 5 \text{ O}_2 \text{ (g)} \rightarrow 3 \text{ CO}_2 \text{ (g)} + 4 \text{ H}_2\text{O (l)}$
9. $2 \text{ P}_2\text{O}_3 \text{ (s)} \rightarrow 4 \text{ P (s)} + 3 \text{ O}_2 \text{ (g)}$
10. $2 \text{ Al (s)} + 3 \text{ Cl}_2 \text{ (g)} \rightarrow 2 \text{ AlCl}_3 \text{ (s)}$
11. $\dots \text{ C}_2\text{H}_4 \text{ (s)} + 3 \text{ O}_2 \text{ (g)} \rightarrow 2 \text{ CO}_2 \text{ (g)} + 2 \text{ H}_2\text{O (g)}$
12. $\dots \text{ CS}_2 \text{ (g)} + 3 \text{ O}_2 \text{ (g)} \rightarrow \dots \text{ CO}_2 \text{ (g)} + 2 \text{ SO}_2 \text{ (g)}$
13. $\dots \text{ Sb}_2\text{O}_5 \text{ (s)} + 10 \text{ HCl (g)} \rightarrow 2 \text{ SbCl}_5 \text{ (s)} + 5 \text{ H}_2\text{O (g)}$
14. $4 \text{ NH}_3 \text{ (g)} + 6 \text{ NO (g)} \rightarrow 5 \text{ N}_2 \text{ (g)} + 6 \text{ H}_2\text{O (l)}$
15. $2 \text{ C}_4\text{H}_{10} \text{ (g)} + 13 \text{ O}_2 \text{ (g)} \rightarrow 8 \text{ CO}_2 \text{ (g)} + 10 \text{ H}_2\text{O (g)}$
16. $4 \text{ Fe (s)} + 3 \text{ O}_2 \text{ (g)} \rightarrow 2 \text{ Fe}_2\text{O}_3 \text{ (s)}$
17. $\dots \text{ FeCl}_3 \text{ (s)} + 3 \text{ Na (s)} \rightarrow \dots \text{ Fe (s)} + 3 \text{ NaCl (s)}$
18. $2 \text{ C}_5\text{H}_{10} \text{ (g)} + 15 \text{ O}_2 \text{ (g)} \rightarrow 10 \text{ CO}_2 \text{ (g)} + 10 \text{ H}_2\text{O (g)}$
19. $2 \text{ C}_6\text{H}_{14} \text{ (g)} + 19 \text{ O}_2 \text{ (g)} \rightarrow 12 \text{ CO}_2 \text{ (g)} + 14 \text{ H}_2\text{O (g)}$
20. $4 \text{ C}_3\text{H}_7\text{NO}_2 \text{ (g)} + 15 \text{ O}_2 \text{ (g)} \rightarrow 12 \text{ CO}_2 \text{ (g)} + 14 \text{ H}_2\text{O (g)} + 2 \text{ N}_2 \text{ (g)}$
21. $2 \text{ H}_2\text{S (g)} + 3 \text{ O}_2 \text{ (g)} \rightarrow 2 \text{ SO}_2 \text{ (g)} + 2 \text{ H}_2\text{O (g)}$
22. $2 \text{ NH}_4\text{Br (s)} \rightarrow \dots \text{ N}_2 \text{ (g)} + 4 \text{ H}_2 \text{ (g)} + \dots \text{ Br}_2 \text{ (g)}$
23. $\dots \text{ Fe}_2\text{O}_3 \text{ (s)} + 3 \text{ C (s)} \rightarrow 3 \text{ CO (g)} + 2 \text{ Fe (s)}$
24. $6 \text{ CON}_2\text{H}_4 \text{ (aq)} \rightarrow \dots \text{ C}_3\text{N}_6\text{H}_6 \text{ (l)} + 3 \text{ CO}_2 \text{ (g)} + 6 \text{ NH}_3 \text{ (g)}$
25. $2 \text{ Al (s)} + 6 \text{ HBr (aq)} \rightarrow 2 \text{ AlBr}_3 \text{ (aq)} + 3 \text{ H}_2 \text{ (g)}$
26. $2 \text{ CuO (s)} + \dots \text{ C (s)} \rightarrow \dots \text{ CO}_2 \text{ (g)} + 2 \text{ Cu (s)}$
27. $4 \text{ K (s)} + \dots \text{ O}_2 \text{ (g)} \rightarrow 2 \text{ K}_2\text{O (s)}$
28. $2 \text{ C}_6\text{H}_6 \text{ (l)} + 15 \text{ O}_2 \text{ (g)} \rightarrow 12 \text{ CO}_2 \text{ (g)} + 6 \text{ H}_2\text{O (g)}$
29. $2 \text{ P (s)} + 5 \text{ Br}_2 \text{ (l)} \rightarrow 2 \text{ PBr}_5 \text{ (s)}$
30. $4 \text{ NH}_3 \text{ (g)} + 3 \text{ O}_2 \text{ (g)} \rightarrow 2 \text{ N}_2 \text{ (g)} + 6 \text{ H}_2\text{O (g)}$
31. $3 \text{ H}_2\text{S (g)} + 2 \text{ HNO}_3 \text{ (aq)} \rightarrow 4 \text{ H}_2\text{O (l)} + 2 \text{ NO (g)} + 3 \text{ S (s)}$
32. $4 \text{ FeS}_2 \text{ (s)} + 11 \text{ O}_2 \text{ (g)} \rightarrow 2 \text{ Fe}_2\text{O}_3 \text{ (s)} + 8 \text{ SO}_2 \text{ (g)}$
33. $\dots \text{ CH}_4 \text{ (g)} + \text{ H}_2\text{O (g)} \rightarrow \dots \text{ CO (g)} + 3 \text{ H}_2 \text{ (g)}$
34. $2 \text{ NH}_4\text{Cl (s)} + \dots \text{ CaO}_2\text{H}_2 \rightarrow \dots \text{ CaCl}_2 \text{ (s)} + 2 \text{ NH}_3 \text{ (g)} + 2 \text{ H}_2\text{O (l)}$
35. $\dots \text{ TiO}_2 \text{ (s)} + 2 \text{ CO (g)} + 2 \text{ Cl}_2 \text{ (g)} \rightarrow \dots \text{ TiCl}_4 \text{ (s)} + 2 \text{ CO}_2 \text{ (g)}$
36. $4 \text{ FeS}_2 \text{ (s)} + 11 \text{ O}_2 \text{ (g)} \rightarrow 2 \text{ Fe}_2\text{O}_3 \text{ (s)} + 8 \text{ SO}_2 \text{ (g)}$
37. $\dots \text{ C}_6\text{H}_6\text{O (l)} + 7 \text{ O}_2 \text{ (g)} \rightarrow 6 \text{ CO}_2 \text{ (g)} + 3 \text{ H}_2\text{O (g)}$
38. $2 \text{ Na (s)} + \dots \text{ H}_2 \text{ (g)} \rightarrow 2 \text{ NaH (s)}$
39. $6 \text{ CO}_2 \text{ (g)} + 6 \text{ H}_2\text{O (l)} \rightarrow \dots \text{ C}_6\text{H}_{12}\text{O}_6 \text{ (s)} + 6 \text{ O}_2 \text{ (g)}$
40. $4 \text{ KO}_2 \text{ (s)} + 2 \text{ H}_2\text{O (g)} \rightarrow 4 \text{ KOH (s)} + 3 \text{ O}_2 \text{ (g)}$

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.

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