

Lesson 11 - Review 1

Chemistry - Key Stage 3

Energetics

Miss Charlton



What has to happen to particles before they react?

A

Break apart

B

Slow down

C

Explode

D

Collide



What do all rate of reaction practical have to do?

A

Measure a change over time

C

Time how long it takes for a reactant to be used up

B

Time how long it takes for a precipitate to be formed

D

Time how quick a product is made



What is activation energy?

A

The energy given out when new bonds are formed

C

The minimum amount of energy a reaction needs to start

B

The maximum amount of energy a reaction needs to start

D

The energy taken in when bonds are broken



The rate of reaction is...

A

Quick all the way through every reaction

C

Quickest at the start of the reaction then slows down

B

The same speed through a reaction

D

Slowest at the start of the reaction then speeds up



Which one decreases the rate of reaction?

A

Particles have more kinetic energy

C

Larger surface area of reactants

B

Use of a catalyst

D

Lower concentration of reactants



Which one increases the rate of reaction?

A

Particles have less kinetic energy

B

Use of a gas syringe

C

Larger surface area of reactants

D

Lower concentration of reactants



The dependent variable is?

A

The variable we measure

B

The variable we change

C

The variable we control

D

The variable we keep the same



Increasing the surface area...

A

Decreases the rate of reaction

C

Increases the concentration of particles

B

Increases the number of successful collisions

D

Increases the number of particles



Decreasing the concentration...

A

Increases the rate of reaction

B

Increases the number of
successful collisions

C

Decreases the number of particles

D

Increases the number of particles



Finish the equation:

Potassium carbonate → + **carbon dioxide**

A

Potassium dioxide

B

Potassium oxide

C

Potassium sulphate

D

Potassium chloride



During endothermic reactions...

A

The temperature of the surroundings increases

C

The particles decrease in temperature

B

The temperature of the surroundings decreases

D

The particle temperature increases



During exothermic reactions...

A

Bonds are broken

C

Bonds are made

B

Bonds are made then broken

D

Bonds are broken and
made



The products of complete combustion are?

A

Carbon dioxide and water

B

Carbon monoxide and water

C

Carbon, water and soot

D

Carbon monoxide and water



Correct the incorrect or poor statement

Incorrect or poor statement	Correct statement
A reaction happens when reactants collide ...	
Increasing the concentration increases the rate of reaction because there are more collisions	
The test for oxygen is to put a blown out splint into the gas and if it relights, its oxygen	
Complete combustion produces more energy than incomplete combustion	



Correct the incorrect or poor statement

Incorrect or poor statement	Correct statement
<p>2 control variables when testing the effect of surface area on the rate of reaction between HCl and calcium carbonate are:</p> <p>The amount of carbonate</p> <p>The amount of acid</p>	
<p>The test for carbon dioxide is to put a lit splint inside it and if the flame goes out, it's carbon dioxide</p>	
<p>When investigating endothermic reactions a polystyrene cup is better because it stops energy being lost to the environment</p>	



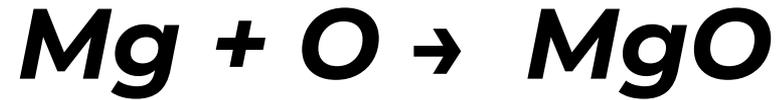
Identify the equation:



Identify the equation:



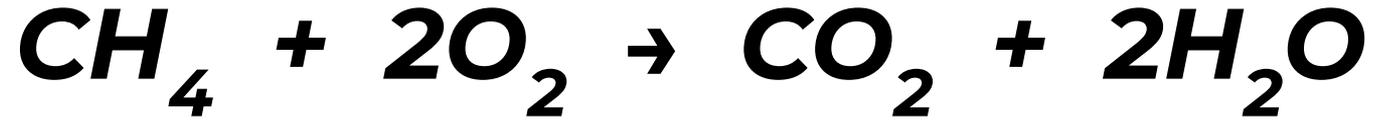
Identify the equation:



Identify the equation:



Identify the equation:



Answers



What has to happen to particles before they react?

A

Break apart

B

Slow down

C

Explode

D

Collide



What do all rate of reaction practical have to do?

A

Measure a change over time

C

Time how long it takes for a reactant to be used up

B

Time how long it takes for a precipitate to be formed

D

Time how quick a product is made



What is activation energy?

A

The energy given out when new bonds are formed

C

The minimum amount of energy a reaction needs to start

B

The maximum amount of energy a reaction needs to start

D

The energy taken in when bonds are broken



The rate of reaction is...

A

Quick all the way through every
reaction

C

Quickest at the start of the
reaction then slows down

B

The same speed through a
reaction

D

Slowest at the start of the reaction
then speeds up



Which one decreases the rate of reaction?

A

Particles have more kinetic energy

C

Larger surface area of reactants

B

Use of a catalyst

D

Lower concentration of reactants



Which one increases the rate of reaction?

A

Particles have less kinetic energy

B

Use of a gas syringe

C

Larger surface area of reactants

D

Lower concentration of reactants



The dependent variable is?

A

The variable we measure

C

The variable we control

B

The variable we change

D

The variable we keep the same



Increasing the surface area...

A

Decreases the rate of reaction

C

Increases the concentration of particles

B

Increases the number of successful collisions

D

Increases the number of particles



Decreasing the concentration...

A

Increases the rate of reaction

B

Increases the number of
successful collisions

C

Decreases the number of particles

D

Increases the number of particles



Finish the equation:

Potassium carbonate → + **carbon dioxide**

A

Potassium dioxide

B

Potassium oxide

C

Potassium sulphate

D

Potassium chloride



During endothermic reactions...

A

The temperature of the surroundings increases

C

The particles decrease in temperature

B

The temperature of the surroundings decreases

D

The particle temperature increases



During exothermic reactions...

A

Bonds are broken

C

Bonds are made

B

Bonds are made then broken

D

Bonds are broken and
made



The products of complete combustion are?

A

Carbon dioxide and water

C

Carbon, water and soot

B

Carbon monoxide and water

D

Carbon minoxide and water



Correct the incorrect or poor statement

Incorrect or poor statement	Correct statement
A reaction happens when reactants collide ...	A reaction happens when reactants collide with enough energy to start a reaction (activation energy)
Increasing the concentration increases the rate of reaction because there are more collisions	Increasing the concentration increases the rate of reaction because there are more frequent collisions
The test for oxygen is to put a blown out splint into the gas and if it relights, its oxygen	The test for oxygen is a glowing splint relights when put into oxygen gas
Complete combustion produces more energy than incomplete combustion	Complete combustion releases more energy than incomplete combustion



Correct the incorrect or poor statement

Incorrect or poor statement	Correct statement
<p>2 control variables when testing the effect of surface area on the rate of reaction between HCl and calcium carbonate are:</p> <p>The amount of carbonate</p> <p>The amount of acid</p>	<p>The mass of carbonate</p> <p>The volume of acid</p>
<p>The test for carbon dioxide is to put a lit splint inside it and if the flame goes out, it's carbon dioxide</p>	<p>The test for carbon dioxide is to bubble it through lime water and if the lime water goes cloudy, the gas is CO₂</p>
<p>When investigating endothermic reactions a polystyrene cup is better because it stops energy being lost to the environment</p>	<p>When investigating endothermic reactions, a polystyrene cup is better because it <u>cuts down</u> on energy being <u>taken in</u> from the environment</p>



Identify the equation:



Incomplete combustion



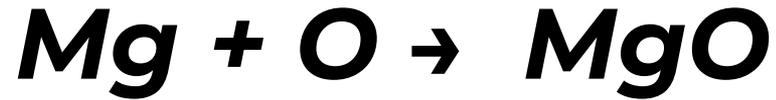
Identify the equation:



Thermal decomposition



Identify the equation:



Oxidation



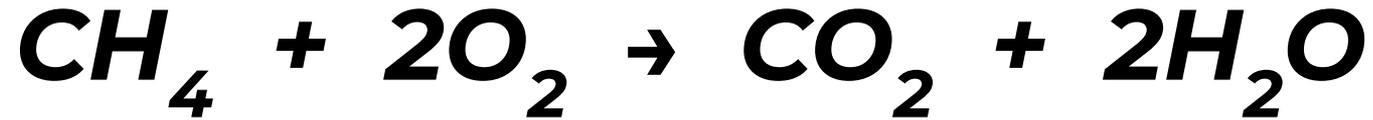
Identify the equation:



Thermal decomposition



Identify the equation:



Complete combustion

