

Rate of a reaction of a specific the amount of a specific

reactant or product per unit time.

i.e. Measured change in a given property

Time taken for change to occur

Collision Theores ale.co.uk (14 of 80 ontd) 2. The colliding particles must produce sufficient energy

to break the old bonds in the reactants.

This energy is called the activation energy.

Collision Theores Co.uk 3. Reactant particles must collide with the <u>correct</u>

orientation so that the energy produced by the

collision can be passed on to the bonds to be broken.

con^c of a reactages (contd) An increase in the cons of the reactants or pressure

for gases increases the rate of a reaction,

i.e. increasing $con^{\underline{c}}$ increases the number of particles

per unit volume-thus frequency of collision increases.



Molecular equ.

 $\begin{array}{l} Na_{2}S_{2}O_{3\,(aq)} + 2HCl_{(aq)} \rightarrow 2NaCl_{(aq)} + S_{(s)} + H_{2}O_{(l)} \\ +SO_{2\,(g)} \end{array}$

• Ionic equ. $S_2O_3^{2-}(aq) + 2H^+(aq) \rightarrow S_{(s)} + SO_2(g) + H_2O_{(l)}$

i.e. surface area only affects reactants which are in the

solid state.

Effect of surface area/particle size (contd) Notesale.co. In Porder to have more collisions and react more collisions and reactions between the particles, the surface area of the solid must be increased by sub-dividing the particles into

smaller pieces

Effect of surface area/ particle size (contd) i.e. an increase in the surface area (i.e. the smaller the

particle size) of the solid increases the rate of reaction.

Presence of a catalyst (contd) It is believed the positive catalyst will

lower the activation energy;

hence many more reactant particles will attain the

activation energy and are able to react when they

collide.

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- Blue litmus paper
- Explain your answers fully.

