

6 Rate of reaction – Part 1 —Answers

Answers

Work through these after trying the questions yourself.

6.1 Any two of: a chemical change makes a new substance, a physical change does not; a chemical change is usually hard to reverse, a physical change is easy to reverse.

6.2 They must collide, and collide with enough energy (the activation energy).

6.3 A powder has much more surface area, so more particles are exposed; collisions happen more often, so the rate is faster.

6.4 The particles gain kinetic energy and move faster, so they collide more often and more of them have enough energy to react.

6.5 No —it is unchanged at the end.

6.6 Any two, each explained —e.g. (1) **heat the acid**: the particles move faster, so they collide more often and more of them reach the activation energy; (2) **use powdered marble** (or a higher acid concentration): more particles are exposed / packed per volume, so collisions happen more often each second.