**Part 1: Effect of Temperature**

**Data Table 1: How Temperature Affects the Rate of Reaction**

|  |  |
| --- | --- |
| **Temperature of Water (°C)** | **Trial 1** |
| 9°C | Small bubbles of gas formed in the water. The Seltzer tablet dissolved slowly; a slow reaction rate.***Reaction took 144 seconds*** |
| 51°C | Fast and violent bubbles of foam formed in the water. The Seltzer tablet dissolved faster than in Trial 1.***Reaction took 32 seconds*** |
| 80°C | Enormous fizzing occurred immediately after the tablet was placed in the water. Large bubbles and foam formed on the surface of the water. The Seltzer tablet dissolved quickly; a fast reaction rate.***Reaction took 25 seconds.*** |

**Part 2: Effect of Concentration**

**Data Table 2: How Concentration Affects the Rate of Reaction**

|  |  |
| --- | --- |
| **Concentration of HCl (M)** | **Trail 1** |
| 0.01M | The zinc metal did not fully dissolve |
| 1.0M | It took the zinc metal to dissolve in 34 minutes; low reaction rate |
| 2.0M | It took the zinc metal to dissolve in 17 minutes; fast reaction rate |

**Part 3: Effect of Surface Area**

**Data Table 3: How Surface Area Affects the Rate of Reaction**

|  |  |
| --- | --- |
| **Surface Area of Alka Seltzer**  | **Trial 1** |
| Whole Tablet | Small bubbles of gas formed, along with a layer of foam on the surface of the water. The tablet dissolved in 90 seconds; low rate of reaction.  |
| Chunks | A few bubbles of gas formed, along with a lot of fizzing. The tablet dissolved in 79 seconds; faster rate of reaction compared to the whole tablet. |
| Crushed | Huge bubbles of foam and gas formed during the chemical reaction. The tablet dissolved in 53 seconds; high rate of reaction. |

**Part 4: Effect of the Presence of a Catalyst**

**Data Table 4: How a Catalyst Affects the Rate of Reaction**

|  |  |
| --- | --- |
| **Catalyst**  | **Trial 1** |
| NaCl | No reaction occurred, since NaCl is a salt. |
| Nothing | No reaction occurred. |
| CuCl2 | A very rapid reaction occurred. Blue foam expanded and spilled over the top of the test tube. |
| KI | Reaction happened slower than CuCl2, but lasted longer. Orange foam spilled over the top of the test tube. |