



CALIFORNIA STATE SCIENCE FAIR  
2004 PROJECT SUMMARY

<b>Name(s)</b> Syedali A. Khan	<b>Project Number</b> <b>S0515</b>
<b>Project Title</b> What Is the Effect of Temperature on the Corrosion of Aluminum?	
<b>Abstract</b>	
<b>Objectives/Goals</b> To determine the relationship between the temperature and the corrosion rate of aluminum and to prove or disprove the hypothesis that the corrosion rate would be affected by temperature.	
<b>Methods/Materials</b> Materials:  3 Rubber-band 3 Aluminum computer port covers 18g Sodium Chloride (NaCl) 41g Ferric Chloride (FeCl <sub>3</sub> ) 3 600 ml beaker 1 Incubator 1 Storage bin 1 Aquarium heater 1 Aquarium circulator  Method:  The (3) 600ml beakers were filled with 450ml of water. The solution was created by adding 5.85g of sodium chloride and 13.52g of ferric chloride to the water. The (3) computer port covers were placed in the (3) beakers. Each of the beakers were covered with plastic wrap and a rubber-band was stretched around each to hold the plastic wrap securely. The (3) beakers were placed in 65C, 33C and 21C environments.	
<b>Results</b> The temperature did have an effect of the corrosion of aluminum. The port strip submerged into 65C corroded the most as compared to others. The 33C did not corrode due to time limitation. The solution set to 21C did not corrode because there was not enough kinetic energy to increase the rate of corrosion. The aluminum submerged into the higher temperature did corrode due to the increase of collision of particles.	
<b>Conclusions/Discussion</b> It was concluded that temperature does have some effect on the corrosion of aluminum. Time was also discovered to be an important factor in corroding the substance.	
<b>Summary Statement</b> The project determines whether or not if temperature has an effect on the corrosion of aluminum.	
<b>Help Received</b> None	