

CALIFORNIA STATE SCIENCE FAIR 2002 PROJECT SUMMARY

Name(s) **Project Number** Arianna S. Cassani 22111 **Project Title** The Effect of the Amount of Paint on Rust Formation **Abstract Objectives/Goals** Determine if an environmentally friendly paint was capable of protecting mild salt water and, i capable, the minimum amount required for protection thus determining the mos ent use of resources. Methods/Materials Procedure paint. Determine thickness with an 1. Paint pieces of steel with various layers of water-based polymer electronic dry film thickness guage. 2. Leave two pieces without paint as your control. 3. Scribe pieces 3, 6, 9, and 12. 4. Suspend half of ea piece in salt water. 5. Take pictures/observations every 3 days for 3 weeks Materials 28 coupons of 1/8th inch mild steel 2 buckets of seawater 1 qt water based polymer paint 1 electronic dry film thickness guage 2 wooden poles 3 metal hangers **Results** The average measurment of sample 1 \text{ 16.633, sample 2 is 17.733, and sample 3 is 13.533. (AVG.(single coat of paint each)is 15.966) Sample 4 average is 21.4, sample 5 is 22.366, and sample 6 is 19.566. (AVG. (two coats of paint each) (AVG. (two coats of paint each 9 is 26.33. (AVG. (three coats of part each) is \$\int(1.333)\$. Sample 10#s average is 33.9, sample 11 is 31.96 and sample 12 is 31.3. (AVG. (four coats of paint each) is 32.388) The control group was used to determine that the panels would be fact rust in the saltwater solution. The thickness of the rust on the control group panels was measured with the results being Sample 13 measuring 1.566 and sample 14 measuring 1.7133, for an average of 1.6397. The rust and paint combination on the panels was measured to determine the amount of resulting rust. The single cout of paint, penels 1-3, measured an average of 18.611. The panels with two coats panels with a **Summary Statement** The project is about be protection of steel with environmentally friendly paint, and what amount you need to protest the streel. Help Received Mom and Dad helped prepare and test; Mrs. McKinney helped me through a few problems.