Rust Protection

M3-05 Chemistry

Testable Question & Purpose

Question: Will different solutions change how something will rust?

Purpose: To see if rust can be prevented in a cheap and affordable way.

Abstract

My experiment's problem was how nails rusting can be solved with solutions. My purpose for doing this experiment was to find an alternative and cheaper way to protect nails from rusting. My hypothesis was that if I covered the nails in the solution they would not rust as much as the nails not coated in the solution. I had hammered nails into a board, covered one row in the solution and left it outside for three days to test my hypothesis. My results were actually the opposite. The solution had only increased the rusting process. My conclusion was that my hypothesis was not supported and that the solution had not protected the nails from rusting.

Hypothesis

If I leave one row of nails not covered in the solution and one row with the solution, then the row of nails with the solution will not have as much rust as the row without the solution because the solution has detergents that will lessen the impact of rust.

Materials

My materials for my project included:

- 11” x 3” Block of wood
- Twenty Nails
- Dish soap solution
- Hammer
- Camera (for pictures)

Procedure

- 1. Hammer twenty nails carefully into two rows of ten on a 11” x 3” block of wood.
- 2. Coat the first row in the dish soap solution.
- 3. Leave the block of wood outside for three days.
- 4. For each day, record the amount of rust you see on both rows of nails on a scale of low, moderate, or high.
- 5. Record and publish your final results on the third day.

Variables

Independent: Solution

Dependent: Amount of rust

Control: Nails, Wood, Number Of Days

Pictures

Monday w/ Solution

Monday w/o Solution

Pictures

Tuesday w/ Solution

Tuesday w/o Solution

Pictures

Wednesday w/ Solution

Wednesday w/o Solution

Results (Graph)

**There's no graphs because apparently words and levels (very low, moderate, etc.) mess up Excel and don't work on any other graph maker sites. But I can tell you that there's a adequate explanation on the next slide. See ya there.*

this displeased me highly

Results

My results showed that all the solution did was speed up the rusting progress. Throughout the days, though there may not have been much change, the slight difference proved that the coated nail sped up the rusting.

Conclusion

In short, my hypothesis was incorrect. It was not supported because the solution did not protect the nails from rust. I inferred that the solution may have sped up the rusting process because in order for rust to occur moisture need to be in play, and moisture in the dish soap caused the nails to rust.

References

- "Rust in History." *Rust in History*. N.p., n.d. Web. 19 Nov. 2016.
http://www.corrosion-doctors.org/Corrosion-History/Rust-history.htm

- Gromicko, Nick. "Rust Inspection and Protection." InterNachi. N.p., n.d. Web. 19 Nov. 2016.
https://www.nachi.org/rust-inspection-prevention.htm

- "Rules for All Projects." Student Science. N.p., n.d. Web. 25 Aug. 2015.
https://student.societyforscience.org/rules-all-projects

- "How to Remove Rust - Bob Vila." *Bob Vila*. N.p., n.d. Web. 19 Nov. 2016.
http://www.bobvila.com/articles/how-to-remove-rust/

- "How to Prevent Rust." *How to Prevent*. N.p., n.d. Web. 19 Nov. 2016.
http://www.howtoprevent.com/misc/how-to-prevent-rust/