Glowing Gumballs: Can Gumballs Be Used as an Additive to Reduce Paint's Flammability?

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Purpose: To see if gumballs from sweet gum trees can be used as an additive in paint to reduce flammability. Hypothesis: If I create a mixture of the paint, with a 20% powdered gumballs additive, then the flammability will be lowered more than if there was a 10% powdered gumball ratio or no gumballs at all. This will paint/gumball mixture will create a natural flame retardant that can add texture to the wood. Procedure: Collect materials. Cut gumballs. Remove the acorn cupule. Put the gumballs into a blender and blend for 2 minutes, or until they are fine dust. Repeat with the acorns. Label cups. Place the gumball and acorn dust in their proper cups. Label paint sticks. Take a measuring cup for each paint stick and create the mixtures for them. Paint the bottom 2 inches of each stick with their proper mixtures. Separate the sticks into groups based on the material painted on them. Allow drying. One at a time, take paint stick and place it in the fire. Start stopwatch. Once the part of the paint stick with the mixture is completely burnt up, stop timer. Record time. Repeat using larger commercial wood samples. Repeat using filtered gumball dust measure time to start, stop, and temperature. Results: The 20% powdered gumball ratio for every mixture caused the flammability to lower, making the sticks take longer to burn. Conclusion: My hypothesis was correct, the 20% powdered gumball mixtures lowered the flammability and created a natural flame retardant.

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