Sticky Styrofoam

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Polystyrene, commonly known as Styrofoam, is a major environmental concern due to its non-degradability and low recyclability. This experiment explored the potential of using D-limonene, a terpene found in citrus oils, to dissolve styrofoam and create a strong adhesive. Three trials were conducted using 10ml, 15ml, 20ml, and 25ml of D-limonene. The resulting adhesive was tested for drying time, viscosity, and strength. The viscosity was determined by measuring the time it took a metal sphere to sink to the bottom of a tube filled with the glue. The strength was determined by gluing two pieces of wood together and measuring the weight required to separate them. The data revealed that the adhesive made with 20ml of D-limonene had the best drying time, highest viscosity, and strongest strength. The findings of this experiment suggest that D-limonene can be used as an effective solvent for recycling styrofoam, creating a practical solution for recycling this material. Additionally, the adhesive created from the dissolution of styrofoam in D-limonene could be used as a water-resistant coating. This experiment provides a promising avenue for the development of an economical and environmentally friendly method for recycling styrofoam and transforming it into a useful product. In conclusion, the results of this experiment support the hypothesis that D-limonene can create a strong adhesive when mixed with Styrofoam. Further research can focus on optimizing the adhesive for different applications. Using D-limonene provides a potential solution to the environmental impact of styrofoam waste.

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