

Title: Sulfur volcano

Work instructions

Task: The redox reactions of the zinc-sulfur mixture induced by ignition of the mixture achieve exothermic explosive-pyrophoric effects.

Theory

Powdered zinc combines violently with powdered sulfur after the reaction is initiated by temperature. The reaction is violently exothermic.



In addition to white zinc sulfide, white zinc oxide is also formed:



and pungent sulfur dioxide:



Equipment: mortar and pestle, evaporating dish, laboratory spoon, burner, fume hood

Chemicals: zinc powder, sulfur powder

Procedures:

1. Weigh 0.1 g of S and 0.2 g of Zn.
2. Grind the mixture well and homogenise in a mortar.
3. Then place the mixture in an evaporating dish and heat over the flame of a stove in a fume hood.
4. Observe the rapid ignition, a flash of color and the ZnS and ZnO products are formed.

Management of chemical substances

Chemicals	Form	H-statements	P-statements
Zn	Solid, powdered	---	---
S	Solid, powdered	H315	P302 + P352, P332 + P313

Name of the project: Digitization of chemistry experiments to improve the quality and support chemistry teaching in secondary schools
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Sources of risk and assessment of risk severity

Possibility of skin burns and eye damage.

Waste management method

Certified chemical waste disposal company.

Risk reduction measures

Lab coat, goggles, gloves, keeping a safe distance.