

DEMONSTRATION 8.12

ZINC AND SULFUR

When a mixture of zinc and sulfur are ignited, a violent reaction occurs.

EQUIPMENT

- large insulating mat
- bunsen burner
- length of strong wire

REAGENTS

- powdered sulfur, S₈ (1 g)
- powdered zinc, Zn (6 g)

PREPARATION

- Place insulating mat and burner into the otherwise empty fume hood.
- Using a small evaporating basin, weigh out 6 g of zinc and 1 g of sulfur.
- With a small spatula mix the two powders until the colour of the mixture is uniform.
- Place the powder directly on and in the middle of the insulating mat.

PROCEDURE

- Turn on ventilation and light the burner.
- Heat the tip of the wire to red heat.
- At arm's length, plunge the red-hot tip of the wire into the centre of the powder pile.

CAUTION



- **This is a violent reaction.**
- **Step back as soon as the reaction has been initiated.**
- **Warn the audience not to look directly at the reaction site.**

RESULT

Almost immediately a violent reaction will occur with much hissing and sparking, and the emission of a flash of bright light and dense smoke. The smoke consists of ZnS, ZnO and SO₂. The solid remaining on the insulating mat is yellow and grey.

The reactions that are thought to occur are:

