

**COLD FIRE***Action:*

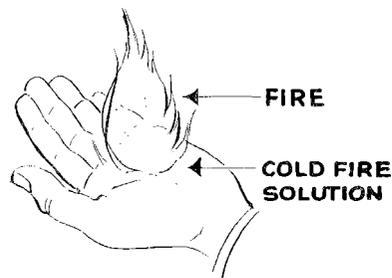
You pour a few ml. of liquid in the palm of your hand. Someone brings a burning piece of paper to the liquid and lights it. The flame has a yellow glow.

*You Need:*

A mixture of 60 ml. of carbon disulfide and 40 ml. of carbon tetrachloride.

*Why:*

Cooling by rapid evaporation prevents burning of the hand.

*Suggestions:*

Should you be afraid to burn the liquid in your hand, you might pour it on a handkerchief which will be unharmed by fire.

The amount of liquid in the palm of the hand should be small or it will seep around to the back of the hand.

This experiment is fairly safe and could even be tried on a willing member of the audience. Remember, however, that you are dealing with fire.

The demonstration is especially effective in a darkened room.

Use a freshly prepared solution. On standing, the volatile carbon tetrachloride may evaporate leaving a mixture that may cause burns.

**COLD LIGHT***Action:*

A two-liter flask containing 1800 ml. of a special solution is standing on the demonstration table. The room is darkened. A small amount of solid is added. The liquid is rotated in the flask and it begins to glow in a mysterious fashion with a blue violet color.

*You Need:*

Two liter flask containing .1 gram of luminol powder, 10 ml. of freshly prepared 5% sodium hydroxide solution and 10 ml. of 3% hydrogen peroxide solution to which has been added water to a total volume of 1800 ml. In addition you need a solid known as "catalyst A."

*Why:*

The demonstration shows that chemical oxidation takes place without heat.

*Source of Materials:*

Materials and directions for a number of interesting cold light experiments can be purchased from the Varniton Company, 416 North Varney Street, Burbank, California.

*Suggestions:*

A yellow green glow can be produced by repeating the above experiment, and adding 20 ml. of a 2% fluorescein solution just before adding the catalyst. A 1% rhodamine B solution used in place of fluorescein produces an orchid glow.

Solutions prepared in these demonstrations glow in a manner resembling the firefly, the glowworm, or the deep sea fish.