A Serious Accident Associated with Heat Burn

A teacher sustained serious heat burn in the accident. The accident occurred when the teacher was conducting a S.2 practical lesson. It was a double-period lesson on "Testing the Starch in Leaves". The teacher divided the practical work into two parts. The first part was to prepare alcohol treated leaves for use by the students and this part was done by the teacher himself as teacher's demonstration on the teacher bench. The second part was to test the presence of starch in the alcohol treated leaves prepared by the teacher and this was done by the students as group experiment.

During the demonstration, the teacher first boiled a number of leaves in hot water to break down the cuticle and kill the leaf cells. Then he transferred the leaves to a large test tube containing hot alcohol with a view to dissolving the chlorophyll in the leaves. The alcohol was heated by a water bath over a Bunsen flame. After some time, when he tried to take out an alcohol treated leaf from the test tube and placed it on the white tile, he noticed that his right hand caught fire. When he tried to put out the fire from his hand, he also noticed that his shirt caught fire as well. He immediately removed his shirt from his body and threw it onto the floor. He then went into the preparation room and informed the laboratory technician of the accident. The laboratory technician promptly helped to put out the fire (burning alcohol) on the teacher's bench as well as the fire (burning shirt) on the floor. The teacher sustained serious heat burn on the upper part of his body, his face, his neck and right hand. The laboratory technician informed the Principal of the accident at once and an ambulance was summoned to the school to take the victim to the hospital for treatment. The injured teacher was hospitalized and received skin graft on his right hand. He had to go back to the hospital for regular physiotherapeutic treatment after discharged. A number of scars are left over after the injured parts have recovered.

Alcohol is a highly flammable solvent. The cause of the fire was probably due to the ignition of the alcohol by the Bunsen flame. The teacher had not turned off the Bunsen flame before he took out the leaf from the hot alcohol. Some hot alcohol might have spilled onto his hand and his shirt which caught fire near the Bunsen flame.

In order to avoid similar accident from happening in the future, teachers should note that:

1. When using hot alcohol to remove the chlorophyll from leaves, add boiling stones or broken porcelain to the alcohol to avoid uneven or over-heating which may result in shooting out of the hot alcohol.
2. The Bunsen flame should be turned off when the leaves are to be taken out from the hot alcohol.
3. Similar precautions should be taken when handling highly flammable liquids in other science experiments.