

## General instructions for work in the laboratory

*glasses, experiment, blanket, note-book, records, water, acid, extinguished, calculate, fireproof, inflammable, explosion, summary, concentrated, permitted, dangers, liquids, wet, vessel, bath*

Before beginning any preparation in the laboratory, the student should study the complete details of the ..... as well as the theory.

The results of all experiments must be recorded in a ..... at the time the observations are made. If the experiment needs ..... of weights, volumes or other numerical results, these must be put directly into the note-book and not on scraps of paper. When the experiment is complete, the student should ..... the yield and then submit the laboratory note-book and the product suitably labelled to the demonstrator or teacher. Also a short ..... of the results as well as the name of preparation, the yield, and the m.p. or b.p (melting point or boiling point) range should be submitted. If the work is accepted, the student will be ..... to proceed with the next experiment.

Laboratory work is attended by certain..... . The chief of them is fire since many liquid chemicals and solvents are highly ..... substances. Highly volatile ..... such as diethyl ether, carbon disulfide, acetone and benzene should never be handled in the vicinity of a free flame.

A common mistake of beginners is to heat an inflammable liquid in an open ..... over a free flame. The correct procedure is to heat the liquid in a vessel provided with a reflux condenser on the water or a steam bath or by immersion in a ..... of hot water with the burner extinguished.

The student should be familiar with the position of the fire, extinguisher, buckets of sand, first aid cabinet and the ..... blanket.

If a fire occurs, all flames in the vicinity should be ..... and inflammable material removed. A small fire may be extinguished with a ..... towel or by throwing sand on it. For a large fire the laboratory fire extinguisher should be used. If the clothing of a fellow student catches fire, he (she) should be wrapped in a special fire-proof ..... or; if this is not available, in a heavy coat. He(she) should not run about and fan the flames.

Other dangers arise from the handling of such chemicals as: ..... acids, alkalis, metallic sodium and bromine and in working with such poisonous substances as sodium and potassium cyanide.

### **Caution.**

Never use "the taste" test in the laboratory.

Add the sulfuric acid to the water slowly while stirring. Never add the ..... to the ..... because that will cause a violent reaction which produces steam and spatters the acid. Sodium must not come into contact with water since a dangerous ..... may result. It should not be handled with the fingers but with tongs or pincers.

**Protective ..... are a must while working in the laboratory!**