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| logoVSCHT_zakl Annex1 - Directive A/S/961/2/2025 Rules of Operation for Laboratories  Date of revision: 31 Jan 2025  **rules of operation of school laboratory** List of hazardous properties of chemical substances and mixture Acute Corrosive Flammable Serious Oxidising Explosive Gas under Hazardous to Health  toxicity health hazard pressure the environment hazard   Basic instructions for the operation of a school (student) laboratory  * Students can be present in a school laboratory only when the instructor is present or when they are informed about it. * When doing laboratory work, students must wear appropriate clothes and equipment to minimise the risk of injury or another extraordinary operating event. In particular, they must wear work clothes (lab coat), closed-toe work shoes with non-slip sole, safety goggles, gloves and other personal protective equipment according to the instructions of the instructor. * Before laboratory work begins, the supervising person must acquaint students with the task assignments, working procedures and how to use personal protective equipment. * During an experiment, students must follow the instructions of the instructor and pay attention to personal safety. * When working with gas and electrical appliances, students must exercise maximum caution and follow the instructions of the instructor. * Students must only have things on the worktop that are necessary for the given task and other tools necessary for its execution; other things must be stored in designated places. * During the performance of laboratory work, students must not leave the workstation or do other activities that might distract them (eg using a mobile phone, headphones etc). * All persons are obliged to keep the laboratory clean and tidy. * After the work has ended, students must close used gas and water taps, clean their workstation and wipe the desk with a wet cloth. * Students must report to the instructor any injury or sudden sickness. * It is prohibited to eat and drink in the laboratory and chew a gum or use cosmetics during laboratory work. * It is prohibited to use laboratory ware for eating, drinking or storage of food * It is prohibited to store food or drinks intended for consumption in fridges or freezer boxes intended for storage of chemical substances, chemical mixtures and biological materials. * It is prohibited to use damaged laboratory ware, aids, tools and technical equipment. * It is prohibited to perform laboratory work without being properly prepared for it, do it hastily or do chemical experiments in an alternative way. * It is prohibited to smoke cigarettes, incl. electronic cigarettes and vaporisers or other types of cigarettes, on UCT Prague premises.  Instructions on how to use a gas burner  * How to light a gas burner:  1. Turn off the air supply to the burner. 2. Turn off the gas supply to the burner. 3. Turn on the gas supply to the workstation. 4. Turn on the gas supply to the burner. 5. Wait a few seconds until the gas pushes the air out of the burner hose. 6. Place a burning lighter with an extended nozzle to the mouth of the burner. 7. Using the air intake control, adjust the size and intensity of the flame.  * How to switch off a gas burner:  1. Turn off the air supply to the burner. 2. Turn off the gas supply to the burner. 3. Turn off the gas supply to the workstation.  Preventing an extraordinary operating event  * When manipulating with chemical substances in test tubes and opened containers, the neck must be tilted away from the person holding it and from other persons. * When manipulating with storage bottles with liquids, the bottle must be held by the label. * Any manipulation with hazardous gases, vapours and fuming, irritating or odorous substances must be done only in the fume hood. During this work, the fume hood must be switched on. * When assembling glass apparatuses, only compatible parts must be used; ground joints and stoppers must be lubricated with suitable fat before assembly. Apparatuses for vacuum distillation must be checked before use. * When glass rods, thermometers etc are placed in rubber stoppers or hoses, hands must be protected by eg textile gloves or a thick cloth. * When working with vacuum or overpressure in glass apparatuses, suitable containers must be used designated for this work by the manufacturer. The glass apparatus must be placed in a sealable fume hood or protected by a cover. * Oil baths may be heated only to a temperature below the flash temperature of the used oil. If water appears in the heated baths, heating must be interrupted and the oil replaced. * The feed hoses to the gas burners must be intact and made of one piece with a maximum length of 1.5m. * When dissolving solid hydroxides, hydroxide is added slowly to water and not the other way round (ie water to hydroxide). * Solid chemicals must never be held by hand, but by a laboratory spoon or spatula. * Liquids must be pipetted using suction balloons or extensions. * Contact between strongly oxidising substances and mixtures with organic substances must be avoided. * When nitrating, it is necessary to work carefully and strictly adhere to the established working procedure. It is necessary to avoid accidental mixing of nitric acid with sulphuric acid (nitrating mixture) – explosion hazard. * Waste generated during laboratory work must be disposed of in accordance with the instructions of the instructor. * Contact between alkali metals and alkali metal hybrids (including calcium carbide) with water must be avoided. * Spilled acids must be diluted with water, neutralised by sprinkling with a carbonate (soda, chalk etc) or by pouring a diluted hydroxide solution on them and then carefully rinsing them with water or collecting them in a cloth etc. * Wood sawdust or other organic materials must not be used to remove spilled nitric acid, perchloric acid and strong oxidizing mixtures; inert materials, such as diatomaceous earth must be used to collect them. * Spilled mercury must be immediately sprinkled with zinc dust or sulphur and then carefully swept away. * When a substantial amount of a flammable substance is spilled, all burners must be switched off, windows opened and the space must be sanitised. * Alkali metals must not be left exposed to air. * Pipetting by mouth is prohibited. * It is prohibited to put in laboratory washers chemical ware that has been contaminated with strong acids or alkalis, toxic substances, irritants and substances that decompose vigorously on contact with water.  First aid guidelines after exposure to chemical substances  * **When a toxic chemical substance is ingested** – if the affected person is conscious, make them drink 1–2dl of lukewarm water with a teaspoon of liquid soap and powdered or crushed activated charcoal, and induce vomiting. Immediately contact the Toxicological Information Centre (at 224 919 293) and call a doctor (hotline 155). * **When a corrosive substance is ingested** – rinse the mouth with water and make the person drink 2–5dl of cold water. **Do not induce vomiting!** * **When substances** that cause pulmonary edema **are inhaled** – quickly move the victim to fresh air and do not let him walk! Depending on the situation, rinse the oral cavity or nose with water. Call a doctor (hotline 155). * **When** the skin is **splashed with a corrosive** – immediately remove the stained clothing and rings, watches and bracelets if they are in the areas where the skin has been affected. Keep rinsing the affected areas with a stream of lukewarm water for 10–30 minutes; do not use a brush, soap or neutralisation! Cover the burned areas of the skin with a sterile bandage. Do not apply ointments or other medicines to the affected areas! * **When the eye is affected** – keep rinsing the eye with a stream of water for at least 10 minutes – eyelids must be opened (forcibly, if necessary). If the victim wears contact lenses, they must be removed immediately. Do not perform neutralisation! Seek medical attention with an ophthalmologist. * **In case of a minor burn** – cool the affected area with water, then cover with a sterile bandage. * **In case of a mechanical injury** – shards, shavings, dirt etc must be removed, the cut must be rinsed with a stream of water and then treated with hydrogen peroxide or another disinfectant. Larger cuts must be covered with a sterile bandage. |