

The design of Chemical Laboratory

There is a certain risk factors in laboratory, for experimental operation using some acids, alkalis, organic solvents and other reagents drugs; test tube, flask, beaker, condenser and other glassware; atomic absorption, gas chromatography, liquid chromatography, UV spectrophotometer and other precision instruments and oven, muffle furnace and other high temperature equipment. Laboratory Planning and Design must make the "practical security" as a starting point, considering comprehensively the safe operation of various instruments and equipment requirements, configuring the appropriate laboratory equipment.

(1) general and analytical chemistry laboratory

The research experiments in general and analytical chemistry laboratory includes a mixture of chemicals, heating, cooling, distillation, evaporation, dilution and reaction. these experiments are taken in an open platform or a fume hood, the necessary analytical equipment such as spectrophotometer, gas, liquid chromatography and other terms, analytical chemistry labs often use some hazardous materials, including highly toxic, volatile liquid, powder, pressure combustible gas. Although the analysis process can be decomposed into a non-toxic compounds, but it is still in toxic state of operation, generally there is not recommended operating extremely poisonous in chemical analysis laboratory, for example, carcinogenic, lethal ,easy-explosion chemical materials and high radiation substances.

Configuration test equipment: side bench, Central bench (sink, reagent rack), fume hood, medicine cabinets, utensils, counters, reflux condensation device (a small cup and water cock), filtration device (filtration faucet, small cup).

2) Organic Chemistry Laboratory

Organic Chemistry Laboratory conducts research experiments including general organic analysis (quantitative and qualitative analysis, medicine testing (determination and identification, determination of pesticide residues (666 DDT pesticide residues, ju lipid pesticide residues, Organic nitrogen pesticide residues, Organic phosphorus pesticides residual gas analysis (gas composition analysis,

the composition of natural gas, liquefied petroleum gas component analysis), determination of harmful substances (Benzo Imidacloprid, polycyclic aromatic hydrocarbons, aflatoxin), IR identification of unknown objects, MS identification of unknown compounds, detector samples (water, food, blood) and so on. organic lab has high performance liquid chromatography, gas chromatography, thin layer scanner, elemental analysis, nuclear magnetic resonance, infrared spectroscopy and other large equipment and facilities.

Configuration test equipment: side bench, Central bench, Central bench overall ventilation hood, medicine cabinets, utensils, counters, reflux condensation device (a small cup and water cock), filtration device (filtration faucet, small cup).

(3) Inorganic Chemistry Laboratory

Inorganic Chemistry Laboratory conducts research experiments, including heavy metals (lead, cadmium, mercury, arsenic, etc.) quantitative analysis, including environmental, food, biological, herbal medicines and other types of samples, trace metals common qualitative and quantitative analysis, such as: Fe, Cu, Ca, K, Mg, Mn, Zn, Li, Mo, Sr, Co, etc., trace precious metals (Au, Ag, Pt) and trace metals (such as: Tl), non-metallic compounds (for example: Se, B, P, N, NO₂⁻, NO₃⁻, F⁻, Cl⁻, SO₄²⁻, etc.), the capacity of the various projects, content analysis of Chinese herbal medicines and proprietary Chinese medicines, food and nutrition component analysis (such as: carbohydrates, starch, fat, cellulose, etc.), analysis of physical indicators (eg: density, melting point, refractive index, optical rotation, PH value, water, etc.), inorganic chemical analysis of various physical and chemical indicators. Inorganic laboratory has atomic absorption spectrometry, UV spectroscopy, fluorescence spectroscopy, inductively coupled plasma atomic emission spectrometer, ion chromatography and other large imports of precision instruments, capable of undertaking the project of most inorganic testing.

Configuration test equipment: side bench, Central bench (sink, reagent rack), fume hood, medicine cabinet, utensils, counters, filtration device (filtration faucet, small cup).