

CHEMIST II

This is advanced level professional chemistry work requiring the application of chemistry methods, chemical theory and the principles from related sciences, to develop, conduct and interpret the results of complex qualitative and quantitative chemical analyses on a wide variety of substances. Employees operate with considerable technical independence under jointly set objectives, projects and priorities. Employees are recognized as a technical specialist and may work with issues and factors that are largely undefined and require extensive analysis and frequent development of approaches and methods. Employees select, arrange and modify complex laboratory equipment and elaborate instrumentation to implement complex testing operations. Employees primarily work with samples that are unknown or in minute or very difficult to work with concentrations and have substances that mask, react or interfere with the reagents or with each other during analysis. Guidelines and references can be generally vague and non-specific and include laws, regulations, agency guidelines, policies, precedents and recent work in their specialty area. Work may also include providing work direction and review to lower level chemists and technicians, programming computerized test instruments, evaluating existing equipment and new developments to recommend the purchase and application of equipment, and testifying in court or at hearings as a technical expert. Employees may be required to perform other duties and responsibilities as assigned.

I. DIFFICULTY OF WORK:

Variety and Scope - Employees are often assigned a major, complex or very sensitive laboratory function or responsibility which involves performing a wide variety of standard, non-standard and developmental wet or instrumental chemical analyses. The tests and analyses performed could be limited with a wide variety of unknown samples, or the samples could be limited with a wide range of procedures and analyses run on each. Employees may make major or frequent adaptations, modifications or extensions to established methods and procedures and develop new methods and techniques to a limited degree.

Intricacy - Employees are assigned responsibilities that include unusual, non-standard and developmental situations and procedures. Employees perform considerable evaluation, analysis and interpretation of results to reach conclusions especially when dealing with unknown samples. Some samples, reagents or solutions may require special preparation and/or methodology and equipment could be altered to achieve results. Procedures often require a number of intricate and exacting steps.

Subject Matter Complexity - Employees apply an advanced professional knowledge of chemistry theory, principles and methods; the principles and practices of related sciences such as physics, biology or statistics; and the applicable laws, regulations and policies governing the department to perform their assignments.

Guidelines - Employees use a variety of standardized or generally established guidelines such as procedure and methodology manuals, chemistry and other textbooks, instrument handbooks and regulations or agency policy. Some guides and references may be vague or non-existent and require interpretation. Employees may choose the procedure or method that best suits the sample or analyses required, including making significant deviations, modifications or extensions to them.

II. RESPONSIBILITY:

Nature of Instructions - Employees usually operate under general objectives, priorities and special projects, and plan their own daily and weekly assignments within those parameters. Supervision or other technical expertise is normally readily available to assist them with unusual situations or the most complex problems.

Nature of Review - Some of the employees' work is evaluated for technical soundness and for conformance to policy and standard procedures, but most work is only reviewed for end result feasibility and compatibility with other work.

Scope of Decisions - Work performed could be part of a regulatory or law enforcement process that could directly affect a limited group of criminals or a broader segment of society through environmental, food, drug or other area controls. Employees could also have responsibility for a service oriented function and have a more indirect impact.

Consequence of Decisions - Some unreviewed conclusions or analyses could directly have an effect on the health, financial well being, or possibly life or death situations, of individuals and various sized segments of the public. However, the most complex, controversial or threatening work is usually reviewed thoroughly.

III. INTERPERSONAL RELATIONSHIPS:

Scope of Contacts - The majority of work completed is discussed with others in a similar work function or orientation. Some work could be discussed with other agency personnel, administrators, prosecutors or with non-technical individuals.

Nature and Purpose - Most contacts are for the purpose of obtaining, presenting, reporting or explaining technical information. A more limited portion of contacts could be concerned with directing and reviewing technicians and lower level chemists, or testifying and justifying data in court or at legal hearings.

IV. OTHER WORK DEMANDS:

Work Conditions - Working conditions can vary from a relatively clean and safe chemistry laboratory requiring only minimal safety precautions, to a laboratory that exposes employees to high risks and potentially dangerous situations and requires the use of a wide range of safety precautions.

Hazards - Employees may work with irritant chemicals, acid fumes, infectious or carcinogenic materials and a wide variety of laboratory equipment and glassware. Some discomfort is ongoing but the likelihood of severe or fatal injuries is normally very small if safety precautions are followed.

V. RECRUITMENT STANDARDS:

Knowledge, Skills and Abilities - Advanced knowledge of the principles, concepts, theories, reference sources and laboratory applications of chemistry and other related sciences. Considerable knowledge of the laws, regulations and agency policies governing responsibilities. Considerable knowledge of scientific methodology and of laboratory safety practices. Ability to independently perform and record complex standardized, non-standardized and developmental laboratory tests and procedures. Ability to analyze results, interpret methodology, understand and solve complex theoretical problems, and to provide work direction and instruction to technicians and lower level chemists. Ability to express technical information clearly, both orally and in writing, when reporting results, testifying or explaining procedures. Ability to perform advanced mathematics and statistical analysis, to understand and follow complex oral and written instructions, to perceive colors normally and to make olfactory distinctions, and the ability to establish and maintain effective working relationships.

Minimum Training and Experience Requirements - Graduation from a four-year college or university with a bachelors degree in chemistry and a minimum of four years of progressive chemistry laboratory experience; or an equivalent combination of training and directly related experience.