

CHEMIST I

This is journey level professional chemistry work requiring the application of established chemistry methods, chemical theory and the principles from related sciences, to conduct and interpret the results of qualitative and quantitative chemical analyses on a variety of substances. Employees operate a wide variety of complex laboratory equipment and elaborate instrumentation that often requires frequent calibration and adjustment, including making moderate repairs to many instruments and equipment. Work includes working 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. Employees select equipment or alternate methods of testing based on sample size, need to vary conditions or the limitations of equipment. Work also may include providing work direction and review to chemical 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 normally assigned a significant laboratory function or responsibility which involves performing a variety of generally complex standard and non-standard instrumental or wet chemical analyses. The tests and analyses performed could be fairly limited with a large variety of different samples, or a limited variety of samples could be tested with a range of procedures and analyses run on each. Employees may make moderate deviations, modifications and extensions to the procedures as necessary.

Intricacy - Employees normally perform significant 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 could be altered on a limited basis to achieve results. Procedures often require a number of intricate and exacting steps.

Subject Matter Complexity - Employees apply a full 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 in order to perform their assignments.

Guidelines - Employees use a variety of standardized or generally established guidelines and laboratory procedures such as procedure and methodology manuals, chemistry textbooks, instrument handbooks and regulations or agency policy. Employees may choose the procedure or method that best suits the sample or analyses. Guidelines are usually specific and directly applicable although some work can be without established guidelines or the guidelines might be vague and require interpretation.

II. RESPONSIBILITY:

Nature of Instructions - Employees perform continuing assignments with general objectives, priorities and quality and quantity of work expected, and often plan their own daily or weekly assignments within those parameters. Supervision or other technical expertise is normally readily available to assist them with unusual situations or very complex problems.

Nature of Review - A significant portion of the employees' work is usually reviewed at completion and is evaluated for technical soundness, conformance to policy and procedures, or for end result feasibility and compatibility with other work. The most complex or controversial work is normally checked very thoroughly.

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.

Consequence of Decisions - Some unreviewed conclusions or analyses could directly effect the health, financial well being or possibly life or death situations of various sized segments of the public. However, the most complex, controversial or threatening work is reviewed thoroughly resulting in a more indirect affect.

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 in the general public.

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 technicians 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 - Full knowledge of the principles, concepts, theories, reference sources and laboratory applications of chemistry and other related sciences. Working knowledge of the laws, regulations and agency policies governing responsibilities. Working knowledge of scientific methodology and of laboratory safety practices. Ability to independently perform and record complex standardized and non-standardized laboratory tests and procedures. Ability to analyze results, interpret methodology, understand and solve theoretical problems, and to provide work direction and instruction to chemical technicians. Ability to express technical information clearly, both orally and in writing, when reporting results, testifying or explaining procedures to others. 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 two years of progressive chemistry laboratory experience; or an equivalent combination of training and directly related experience.

Minimum Training and Experience for a Trainee Appointment - Graduation from a four-year college or university with a bachelors degree in chemistry; or an equivalent combination of training and directly related experience.