

CHEMIST III

This is the most advanced level of professional chemistry work requiring an application and in-depth understanding of chemical methods, chemical theory and the principles of related sciences, to evaluate, develop, conduct and interpret the results of the most complex qualitative and quantitative chemical analyses on a wide variety of substances.

Employees usually operate under very limited or no technical direction with broadly defined objectives and functions. Employees may often determine their own projects, priorities and deadlines and function as a technical expert or master in a specialty area. The results of their work require very extensive interpretation and analysis and could contribute to altering established concepts, theories, objectives or agency policy, including the development of new methodology and techniques. Employees evaluate, select, arrange, modify and develop complex laboratory equipment and elaborate instrumentation to implement the most complex testing operations. Employees work with the most difficult and complex samples which are usually in very minute or hard to work with concentrations, and often have substances that mask, react or interfere with the reagents or with each other during analysis. Work may include providing work direction and review to lower level chemists and technicians, programming computerized test instruments, evaluating new equipment and methods, recommending 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 responsible for a major, or very complex or sensitive project, function or testing operation. They perform a wide variety of standard, non-standard and developmental methods, or a narrower range of complex specialty procedures, including extensive evaluation, modification, adaptation and extension of existing procedures. Employees could be an expert or master of equipment/procedures such as gas chromatography/mass spectroscopy or the Scanning Electron Microscope. Employees may develop new methods, techniques or procedures as necessary.

Intricacy - Employees are assigned the most complex chemistry assignments that include unusual, non-standard and developmental situations and procedures. Employees perform the highest degree of evaluation, analysis and interpretation of results to reach conclusions especially when dealing with unknown samples. Equipment and glassware employed are usually the most elaborate and intricate requiring extensive calibration, adjustment and fine-tuning.

Subject Matter Complexity - Employees apply a very advanced professional knowledge of chemistry theory, principles and methods; the principles, practices and theory 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 wide range of standardized and generally established guidelines and laboratory procedures such as procedure and methodology manuals, chemistry and other textbooks, instrument handbooks, laws, regulations and agency policy. However, many of the guides and references used could be very broad or non-specific and require considerable interpretation and research.

II. RESPONSIBILITY:

Nature of Instructions - Employees are usually assigned major or very complex ongoing functions or special projects. They normally have almost complete freedom in planning their daily and weekly work and in the technical decision making related to their responsibilities. Supervision is usually readily available to assist them. Employees are a technical expert or master in a very complex specialty which requires them to often make the final technical decision.

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 functional area controls. Employees normally have a direct impact in their area of responsibility because of the many unreviewed technical decisions they make.

Consequence of Decisions - Many unreviewed conclusions or analyses could have a direct 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 or controversial work is usually reviewed more extensively.

III. INTERPERSONAL RELATIONSHIPS:

Scope of Contacts - A large proportion of work completed is discussed with others in a similar work function or orientation. However, a considerable amount of work could be discussed with other agency personnel, administrators, prosecutors or with non-technical individuals in the general public.

Nature of Purpose - Many contacts are for the purpose of obtaining, presenting, reporting or explaining technical information. Employees do however, spend a considerable portion of their time in directing and reviewing lower lever technicians and 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:

Knowledges, Skills and Abilities - Thorough 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 the most complex standardized, non-standardized and developmental laboratory tests, procedures and analyses. Ability to analyze results, interpret and evaluated methodology, understand and solve very 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 to others. Ability to perform advanced mathematics and statistical analysis, to understand and follow very 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 six years progressive chemistry laboratory experience; or an equivalent combination of training and directly related experience.