

GENERAL DESCRIPTION OF CLASS

The CHEMIST 2 provides accurate and timely detection and identification of chemical and radiochemical contaminants and constituents on a variety of environmental, agricultural, and biological samples. This requires the application of a variety of standard and technically complex tests and procedures whose results generally involve interpretations or correlations with other information.

DISTINGUISHING FEATURES

This is the second level of a three-level series. It is distinguished from the lower level by the degree of specialized knowledge required, by the performance of more complex tests and procedures, and by exercising independent scientific judgment in the interpretation of data. It is distinguished from the higher level because of less emphasis as an analytical specialist who designs, develops, and implements state of the art methods and procedures.

DUTIES AND RESPONSIBILITIES

Employees in this class may specialize in one of the fields of chemistry such as organic, inorganic, environmental, or analytical; however, the employee may be called upon to assist in any of these areas as the need arises.

Allocation of positions to this class will depend on the total work performed which may include one or a combination of the duties or tasks listed below.

- 1. Benchwork.** Typical tasks: logs in sample or specimen, noting date, time, and tests to be performed; prepares necessary equipment and organizes supplies and reagents; prepares samples for testing by diluting, filtering, centrifuging, digesting; performs and develops various standard and complex chemical tests, such as microscopic analysis for foreign substances, asbestos, etc; metals analysis by various techniques (i.e. atomic absorption, inductively coupled plasma, x-ray fluorescence, or x-ray diffraction); chromatographic analyses for various organic compounds (PCB's [polychlorinated biphenyls], THM's [trihalomethanes], pesticides or oils); using GC's [gas chromatographs], GCMS's [gas chromatograph/mass spectrophotometers], LC's [liquid chromatographs]; radiochemical analysis (i.e. gross alpha and beta, low level alpha and beta, gamma spectroscopy, and separations for specific radionuclides); other analyses as appropriate; prepares and runs quality control samples with known values to determine if procedures and results are within acceptable limits; calculates numerical results based on calibrations; interprets results by correlating with other information, if appropriate; investigates deviations from expected results as identified by Quality Assurance.
- 2. Reports.** Typical tasks: enters results of test in appropriate log or computer; completes test result form to be sent to person or agency that submitted specimen or sample; contacts supervisor immediately in cases of significant test findings; interprets results for submitter; requests additional samples, if necessary; completes daily and monthly reports including number and types of tests performed; maintains accurate and up-to-date records detailing quality control procedures and results for all tests.
- 3. Advancement of Knowledge.** Typical tasks: keeps current in field by reading literature and attending

symposiums, conferences, and workshops; recommends or develops improvements in methodology and incorporation of new procedures; assists in implementing pilot programs to test recommended improvements and procedures; participates in procedure-manual preparation by suggesting revisions deemed appropriate; may develop a specialty in a particular area.

4. Miscellaneous. Typical tasks: provides technical direction and assistance to new employees, student interns, and laboratory technicians; calibrates, troubleshoots, and performs minor maintenance to laboratory equipment; keeps inventory of supplies current; testifies on methodology and results of tests when those results are evidence in cases of litigation.

RELATIONSHIPS WITH OTHERS

Employees in this class may have daily in-person or telephone contact with agency staff to exchange information or discuss test results. They may have occasional contact with governmental agencies, industrial and business representatives, and other organizations to discuss issues pertaining to a sample or specimen.

SUPERVISION RECEIVED

Employees in this class work under general supervision of a laboratory supervisor or other administrative superior. Test data, results, and any standard interpretation are reviewed routinely for accuracy and precision. Reports are reviewed for completeness and accuracy (may be used in cases of litigation). Records are reviewed routinely for quality control. Guidelines used in performance of duties include standardized testing procedures, accepted handling and cleaning procedures, established laboratory procedures, and applicable State and Federal regulations.

GENERAL INFORMATION

Positions are found in central and remote locations throughout State government (e.g., general government agencies, natural resource agencies, higher education institutions, or hospitals). They require the willingness to work within the environment associated with the position's location (usually a laboratory).

KNOWLEDGE, SKILLS, AND ABILITIES (KSA)

General knowledge of laboratory and chemical principles, terminology, material, equipment, procedures, and techniques.

General knowledge of various fields of chemistry such as organic and inorganic.

General knowledge of various laboratory testing procedures such as spectroscopic, titrametric, or microscopic.

General knowledge of the operation and maintenance of various laboratory instruments and equipment.

General knowledge of the techniques required for laboratory safety and the proper handling of hazardous materials.

Skill in preparing laboratory samples, reagents, and solutions.

Skill in the care and handling of laboratory samples.

Skill in performing laboratory tests.

Skill in operating laboratory equipment and instruments.

Skill in reading and following scientific laboratory methods and procedures.

Skill in calibrating and maintaining standard laboratory equipment.

Skill in interpreting test results.

Skill in preparing written reports which contain analysis of laboratory test results.

Ability to determine appropriate test equipment or instruments to be used.

Ability to learn new complex laboratory procedures.

Ability to perform highly repetitive tasks while maintaining accuracy and speed.

Ability to provide direction and leadership to students and other employees.

Ability to organize and prioritize own work and work of others.

Ability to communicate orally and in writing to gather and exchange information.

Ability to work with flammable, corrosive, reactive, toxic, radioactive, or irritating substances on a regular basis.

NOTE: The KNOWLEDGE and SKILLS are required for initial consideration. ABILITIES may be required for initial consideration, at any time during the selection process, or during a trial service period as a final stage of the selection process. Some duties performed by positions in this class may require different KSA's. No attempt is made to describe every KSA required for **all** positions in this class. Additional KSA requirements will be explained on the recruiting announcement.

Adopted 1/90

Revised

Examples of work are typical of duties assigned to this class. No attempt is made to describe every duty performed by all positions in this class.