

**MICHIGAN CIVIL SERVICE COMMISSION**  
**JOB SPECIFICATION**  
**TOXICOLOGIST**

**JOB DESCRIPTION**

Employees in this job complete and oversee a variety of professional assignments to assess and control the impact of toxic substances on human health and the environment.

There are three classifications in this job.

**Position Code Title - Toxicologist-E**

Toxicologist 10

This is the intermediate level. The employee performs an expanding range of professional toxicologist assignments in a developing capacity.

Toxicologist P11

This is the experienced level. The employee performs a full range of professional toxicologist assignments in a full-functioning capacity. Considerable independent judgement is used to make decisions in carrying out assignments that have significant impact on services or programs. Guidelines may be available, but require adaptation or interpretation to determine appropriate courses of action.

**Position Code Title - Toxicologist-A**

Toxicologist 12

This is the advanced level. The employee may function as a lead worker or senior worker. At this level, employees are responsible for overseeing the work assignments of other professionals or have regular assignments which have been recognized by Civil Service as having significantly greater complexity than those assigned at the experienced level.

**NOTE:** Employees generally progress through this series to the experienced level based on satisfactory performance and possession of the required experience.

**JOB DUTIES**

**NOTE:** The job duties listed are typical examples of the work performed by positions in this job classification. Not all duties assigned to every position are included, nor is it expected that all positions will be assigned every duty.

Conducts evaluations of the physical, chemical and toxicological properties of chemical substances; assesses associated hazards.

Develops criteria and rationale for assessing chemical hazards.

Compiles, analyzes and interprets field and laboratory toxic substances; obtains toxicological, biological and chemical data and reports conclusions.

Identifies possible presence of toxic substance components in discharges, emissions and waste streams.

Assists in interdisciplinary reviews of toxic substance problems and contamination sites; participates in the development of strategies for the correction and clean up of sites.

Assists in the development of environmental monitoring programs for toxic substances.

Prepares information necessary for legal action against illegal discharges of toxic substances.

Reviews industrial and municipal environmental permits for toxic substance concerns; participates in the development of emission and effluent limitations to protect the environment and human health.

Reviews related scientific literature and keeps abreast of technical developments.

Attends meetings and conferences on related technical topics and issues.

Prepares periodic and special technical and scientific reports and articles.

Appears as an expert witness on the effects of toxic substances at hearings and court cases.

Plans, conducts and documents formal assessments of the risks associated with the use and manufacture of chemicals.

Reviews and evaluates test procedure protocols to verify their adequacy and validity of use for application in evaluating various toxic substance issues.

Plans, coordinates and assists in toxic substances field studies and sampling.

Inspects food processing facilities for prevention of toxic contamination of manufactured food products.

Maintains records and prepares reports and correspondence related to the work.

Performs related work as assigned.

### **Additional Job Duties**

#### **Toxicologist 12 (Lead Worker)**

Oversees the work of professional staff by making and reviewing work assignments, establishing priorities, coordinating activities, and resolving related work problems.

#### **Toxicologist 12 (Senior Worker)**

Performs on a regular basis professional toxicologist assignments that are recognized by Civil Service as more complex than those assigned at the experienced level.

## **JOB QUALIFICATIONS**

### **Knowledge, Skills, and Abilities**

**NOTE:** Developing knowledge is required at the intermediate level, considerable knowledge is required at the experienced level, and thorough knowledge is required at the advanced level.

Knowledge of the general principles, practices and procedures of toxicology, biology and chemistry.

Knowledge of hazard assessment procedures.

Knowledge of the relationships between the toxicological, physical and chemical properties of chemicals.

Knowledge of the application of statistical methods to research data in toxicology, chemistry and biology.

Knowledge of biological and chemical degradation processes.

Knowledge of the laws and regulations pertaining to the management and control of chemicals.

Knowledge of risk assessment procedures and applications.

Knowledge of general concepts pertaining to the environmental fate of chemicals.

Knowledge of the procedures and techniques utilized in investigating toxic substance problems.

Knowledge of the procedures and techniques utilized in correcting or mitigating toxic substance problems.

Knowledge of the analytical equipment and techniques utilized to identify environmental concentrations of toxic substances.

Knowledge of computer technology applications to the management and analysis of toxic substances data.

Knowledge of techniques used to treat or remove chemical substances from discharges and the environment at large.

Ability to utilize available scientific literature to obtain references and information on the physical, chemical and toxicological properties of chemical substances.

Ability to apply knowledge of toxicology, biology and chemistry to practical situations.

Ability to interpret tests, surveys, analytical results, toxic substance bioassays and other scientific data.

Ability to compile toxicological, biological and chemical data.

Ability to document information necessary for legal action against sources of toxic contamination.

Ability to interpret toxicological data to determine the potential impact of toxic chemicals on the environment and human health.

Ability to work with others as part of a scientific team.

Ability to write in a concise, easily understandable manner at both the technical and non-technical levels.

Ability to maintain records, and prepare reports and correspondence related to the work.

Ability to communicate effectively with others.

Ability to maintain favorable public relations.

### **Additional Knowledge, Skills, and Abilities**

#### **Toxicologist 12 (Lead Worker)**

Ability to organize and coordinate the work of others.

Ability to set priorities and assign work to other professionals.

### **Working Conditions**

Some jobs require an employee to work in an environment that involves exposure to unpleasant and noxious fumes and odors.

Some jobs require an employee to be exposed to hazardous work environments.

Some jobs require an employee to work outdoors as well as in an office or a laboratory.

### **Physical Requirements**

*None*

### **Education**

Possession of a master's degree in toxicology.

### **Experience**

#### **Toxicologist 10**

No specific type or amount is required.

### Toxicologist P11

Two years of professional experience in assessing and controlling the impact of toxic substances on human health and the environment equivalent to a Toxicologist, including one year equivalent to a Toxicologist 10.

### Toxicologist 12

Three years of professional experience in assessing and controlling the impact of toxic substances on human health and the environment equivalent to a Toxicologist, including one year equivalent to a Toxicologist P11.

## **Alternate Education and Experience**

### Toxicologist 10

Possession of a master's degree in a physical, biological, or environmental science with 10 semester (15 term) credits in one or more of the following subject areas: toxicology, human or environmental risk assessment, pharmacology, pathology, environmental stress, mechanisms or modes of chemical action on living organisms; and an additional 10 semester credits (15 term) in any combination of the following: molecular biology, biochemistry, chemistry, anatomy, epidemiology, industrial hygiene, zoology, ecology, biology, limnology, environmental science, soil science, physiology, histology, statistics, and chemical fate and transport.

### Toxicologist P11

Possession of a Doctor of Philosophy (PhD) degree in toxicology; or, a PhD in a physical, biological, or environmental science with 10 semester (15 term) credits in a one or more subject areas including toxicology, human or environmental risk assessment, pharmacology, pathology, environmental stress, mechanisms or modes of chemical action on living organisms; and an additional 10 semester credits (15 term) in any combination of the following: molecular biology, biochemistry, chemistry, anatomy, epidemiology, industrial hygiene, zoology, ecology, biology, limnology, environmental science, soil science, physiology, histology, statistics, and chemical fate and transport.

## **Special Requirements, Licenses, and Certifications**

*None*

**NOTE:** Equivalent combinations of education and experience that provide the required knowledge, skills, and abilities will be evaluated on an individual basis.

## **JOB CODE, POSITION TITLES AND CODES, AND COMPENSATION INFORMATION**

### **Job Code**

TOXICLGST

### **Job Code Description**

TOXICOLOGIST

### **Position Title**

Toxicologist-E

Toxicologist-A

### **Position Code**

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TOXGSTA

### **Pay Schedule**

H21-006

H21-013

SC

10/29/2023