

Missouri Department of Transportation

Code: R04087

Title: Senior Chemist

Exemption Status: Exempt

Grade: 15

Job Description

Effective Date 12-01-2013

Replaces (Effective Date) 04-01-2006

General Summary The senior chemist conducts varied and complex chemical and physical tests and analyses by gravimetric, volumetric, and potentiometric methods, using specialized instruments to determine properties and ensure compliance with specifications. Responsibilities are performed under general supervision.

Minimum/Required Qualifications Bachelor's Degree: Chemistry
Four years of experience in chemical testing procedures.

Supervisory Responsibilities Lead Worker Only

Location Central Office - Construction and Materials

Special Working Conditions/Job Characteristics Job requires occasional, statewide, overnight travel.
Job requires exposure to physical hazards, health and safety risks, and/or adverse or otherwise undesirable characteristics in the environment.
Job requires moderate physical activity.
Job may require operation of vehicles to plow snow and spread ice control materials.

Examples of Work

- (1) Conducts quantitative and qualitative analyses of bituminous materials, cements, paints, petroleum products, metals, soils, reflective materials, wood, and other materials used in the construction and maintenance of the state highway system.
- (2) Contacts and maintains communications with cement, fly ash, slag, power generating stations, sign and related.
- (3) Conducts tests using specialized equipment such as atomic absorption spectrophotometer, infrared spectrophotometer, inductively coupled plasma spectrophotometer, solvent reclamation unit, automatic titrator, water still, colorimeter and equipment to measure reflective products.
- (4) Inspects established and new, instate and out-of-state, manufacturing facilities for cement, fly ash, and GGBFS for compliance with existing and new qualifications.
- (5) Performs analysis on signing materials, delineators, and pavement marking tape.
- (6) Meets with industry representatives to discuss and resolve problems pertaining to various materials.

- (7) Demonstrates test procedures during on-site American Association of State Highway and Transportation Officials (AASHTO) Materials Reference Laboratory and the Cement and Concrete Reference Laboratory inspections, maintains assigned Quality Systems Manual, and accurately analyzes proficiency samples as required to maintain national laboratory accreditation.
- (8) Performs calculations, maintains records, prepares reports of testing activities and corresponds with various department personnel, producers/suppliers, and vendors to ensure efficient functioning of the work unit.
- (9) Calibrates, maintains, programs, trouble-shoots, and repairs specialized test equipment.
- (10) Develops test methods for research, new products, and Material Special Provisions; recommends modifications for AASTHO, American Society for Testing and Materials, and department specifications and testing methods.
- (11) Provides technical support and training to department personnel.
- (12) Performs lead worker responsibilities, which may include providing general instruction, assigning and reviewing work, coaching and training, providing guidance and instruction in the proper and most efficient methods of accomplishing tasks, and providing input to the direct supervisor on staffing decisions and performance management.
- (13) Performs other responsibilities as required or assigned.

The Missouri Department of Transportation promotes an equal opportunity workplace that includes reasonable accommodation of otherwise disabled applicants and employees. Please see your manager should you have any questions about this policy or these job duties.