



## Job Description – Senior Chemical Engineer

Doc# SRCHMENG

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**Position Title:** Senior Chemical Engineer

**Department:** Operations/Engineering

**Location:** Delta, B.C. or Toronto, ONT with occasional travel to project sites and test laboratories

**Reports To:** Vice President, Metallurgy

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### General Accountability:

This is a full time position reporting to the Vice President, Metallurgy; the Senior Chemical Engineer will be responsible for enhancing chemical and hydrometallurgical processes for the production of rare metals as part of a rare metal mining operation. The individual will manage test work, prepare basic design packages (Flow Sheets, Mass Balance, Equipment specifications) and build process simulations for new process designs. The Chemical Engineer will research and test new ideas on a bench/pilot/industrial scale as necessary; provide support to process engineering and production; support and coordinate process trials, testing, experiments and improvements, and ensure successful transfer of all projects from R&D to manufacturing. Additional assignments and duties may be required. The position will evolve from management of testwork and related work in a feasibility study through to plant design and eventually operations management.

### Primary Responsibilities:

The fundamental responsibilities for this position are to lead the investigation, design, engineering, and commissioning of chemical and hydrometallurgical processes for the recovery, separation, and refining of rare earths and rare metals from mineral concentrates. The candidate may have both theoretical and practical industrial chemical and/or hydrometallurgical experience in consulting/contracting, and/or operations, and may also have a strong academic background. The applicant will have demonstrated a keenness to learn new knowledge and technologies, and an ability to develop new innovative processes. The following experience and knowledge should be in the applicant's background:

- Fundamental theoretical and practical understanding of the industrial chemistry of rare earths and rare metals (Nb, Ta, Zr, Ga, Be, etc.).
- Experience in the testing and design of technologies such as various types of high temperature furnaces, precipitation and filtration methodologies, solvent extraction, among others.
- Experience in flowsheet design, chemical plant engineering, estimation of capital and operating costs, and other aspects of feasibility studies including industrial chemical plant operations experience.

### Experience:

- Experience in mining industry operations especially relating to hydrometallurgy and industrial chemistry.
- Practical experience in start-up operations.
- Environmental aspects of industrial plant operation, treatment and disposal of chemical tailings and other waste products.
- Risk analysis and Quality control.
- Application of computer simulation software for industrial chemistry and/or hydrometallurgy.
- Management of engineering contractors and consulting companies.
- Experience in development and implementation of ISO systems at operating plants
- The position will also require extensive travel to the planned plant sites and test sites.

### Education:

- Minimum Chemical Engineering, Chemistry, or Metallurgy degree
- Ten years' experience in Industrial Chemical or Hydrometallurgical Plant design and/or operations
- Experience in Process Safety Management knowledge and experience (HAZOP, PHA and MOC)
- Experience in the preparation of plant layouts equipment lists, capital cost estimate operating cost estimates
- Experience in directing and managing people in cross functional organizations and projects teams

### Core Competencies:

- Support and practice the Health and safety practices
- Ability in project accountability and cost management
- Strong team player with other technical and non-technical people
- A practical and hands-on chemical engineer or hydro metallurgist
- Has a methodical approach to work practices with strong emphasis on quality
- Must be a strong team player and an excellent problem solver
- Must have excellent written and verbal communication skills
- Professional Engineer status
- Willingness to travel within North America