The Shepherd Chemical Company

Position Description

Position Objective: The Research and Development Chemist supports the business of The Shepherd Chemical Company by researching, developing and executing product commercialization opportunities for manufacturing specialty chemicals. This job description encompasses all levels within the R&D Chemist designation.

General Responsibilities: The R&D Chemist position is responsible for researching, planning and performing the necessary activities to accomplish scale-up and commercialization of new products. This includes finding and developing new product opportunities both independently and in collaboration with sales and marketing; researching and carrying out the necessary laboratory work for chemical transformation, product quality and manufacturing process determination; scaling up and piloting of new products and processes; and commercialization of new products. The R&D Chemist keeps current on technology and professional practice including process, analysis and characterization techniques in order to achieve the desired products by the most effective and efficient methods possible.

Essential Job functions:
- Lead new product development projects
- Perform literature searching for new products or processes
- Design or propose effective, economical and environmentally friendly synthetic route or process for new projects or new products
- Practice the proposed synthetic route or process at a bench scale
- Synthesize new target materials as requested by the customers
- Analyze organic, inorganic and organometallic compounds to determine chemical and physical properties, utilizing such techniques as NMR, GC-MS, HPLC, FT-IR, XRD, SEM etc.
- Prepare lab samples of new organic, inorganic and organometallic products
- Improve or modify processes for new products or existing products
- Write technical papers or reports about the progress of the projects
- Manage and prepare documents to ship samples to the customer by collaborating with the customer service department
- Strategically source raw materials for new projects, including searching possible suppliers worldwide, getting quotes and managing placing orders
- Directly contact customer for reporting project progress, addressing technical issues and providing technical perspective to solve problems

Other Job functions:
- Propose new equipment and technologies for laboratory improvement
- Provide technical suggestions and contribute R&D perspectives to Shepherd Raw Materials Qualification Team
- Lead teams including chemists and technicians to accomplish bulk lab production (1-20 Kg) to fulfill customer orders in a timely manner
- Contribute to technical business development by visiting customers, attending professional conferences and trade shows with commercial personnel

The above statements and description are intended to describe the most significant duties and level of work to be performed. The above statements do not exclude other work assignments and are not intended to be construed as an exclusive list of all responsibilities, duties and skills required of this position. This job description may be revised at any time without notice and to require other duties to be performed when necessary.
- Initiate, establish new connections with new or potential customers and bring in new business or projects through professional network
- Perform cost estimate including raw materials and production cost and provide reasonable quote based on either lab bench scale or pilot batch to the customer for new projects in a team environment involving R&D, sales and marketing department
- Other responsibilities as assigned by the Head of R & D

**Qualifications/Knowledge/Experience:**

**Required:**
- Bachelor’s degree in Chemistry or a closely related field
- Chemical synthesis skills
- Expertise in economical synthetic route design and modification for target molecules
- Experience in instrumental analysis of products, running the instruments and interpreting the results (NMR, GC-MS, FT-IR, MS etc.)
- Process development skills
- Ability to use various software applications essential to technical performance
- Experience in Word, Excel, PowerPoint, and Outlook.

**Desired:**
- Advanced degree in chemistry or a closely related field
- Evidence of direct contact with customers and successful customer problem solving
- Strong connections or network within chemical or related industry
- Substantial experience in chemical industry and a record of accomplishment
- Track record of capabilities evidenced by new technologies and products development
- Management and industrial R&D experience

**Behavioral Competencies required:**
- Demonstrate excellent written, verbal, analytical and communication skills
- Able to work in a team-oriented environment
- Knowledge of importance of safety in industry lab
- Highly initiative, strongly self-motivated and proactive

**Physical Demands / Work Environment:**

<table>
<thead>
<tr>
<th>Physical Requirements</th>
<th>Level</th>
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</thead>
<tbody>
<tr>
<td>Strength range / material handling</td>
<td>Light strength level</td>
</tr>
<tr>
<td>Upper extremities-reach-handle</td>
<td>From hip to shoulder level mostly, occasionally reach above head or below knee</td>
</tr>
<tr>
<td>Grasp / manipulations</td>
<td>Frequently</td>
</tr>
<tr>
<td>Push / pull (force required)</td>
<td>5-10 lbs occasionally</td>
</tr>
<tr>
<td>Carry / lift</td>
<td>2-10 lbs frequently, 10-30 lbs infrequently</td>
</tr>
<tr>
<td>Lower extremities-stoop / bend</td>
<td>Occasionally</td>
</tr>
<tr>
<td>Walk / stand</td>
<td>Frequently</td>
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<tr>
<td>Climbing stairs</td>
<td>Occasionally</td>
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<tr>
<td>Other</td>
<td>Sitting, 3-4 hours/day alternating with frequent walking and standing Vibration when operating hand/power tools. Exposure to chemicals, some may be hazardous or flammable</td>
</tr>
</tbody>
</table>

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Environmental Requirements:
Floor: concrete, ceramic and vinyl tiles, rubber mat
Light: adequate
Temperature: indoors (lab and office): conditioned air; outdoors: exposed to weather elements
Safety equipment: steel-toed shoes, gloves / rubber gloves, safety glasses / goggles, respirator
Tools, equipment, machine and vehicle (sample list): computer, usual office equipment, lab hoods, analytical instruments (NMR, GC-MS, FT-IR, et al), bottles, gas cylinders, carts, balances, racks / shelves, stepstools, other laboratory supplies (glassware, containers, transferring pipettes).

Additional information:
Required to wear Shepherd uniforms at work. Full time position.