

SOCMA 2024 Nashville, TN



Our Heritage



• **1950:** John Birmingham pioneered the synthesis of metallocenes at Harvard during his graduate work with Sir Geoffrey Wilkinson.

Bis(Cyclopentadienyl) Compounds of Ti, Zr, V, Nb and Ta. J. Am. Chem. Soc. **1954**, 76 (17), 4281

- 1961: Boulder Scientific is incorporated in Boulder, CO.
- 1972: John Birmingham shifts his focus to Boulder Scientific full time and begins making custom chemicals for catalog and industrial chemical companies.
- 1979: Spurred by continued growth, Birmingham purchases a 10-acre parcel in Mead, CO to develop a manufacturing plant.





Who We Are Today

Custom Specialty Chemicals

Advanced Catalysts

Polyolefins Industry

Electronic Materials

•ALD and CVD Precursor

Performance Materials

Defense and Aerospace Industry

Fine Chemicals

- Research and Development
- •Life Sciences



>200 full time employees and growing



















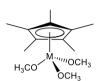
BSC Product Offerings

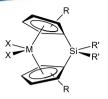
Advanced Catalysts & Precursors

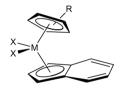


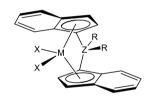














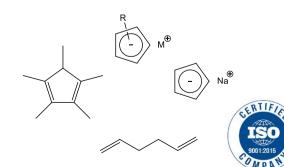
M = Ti, Zr, Hf, Ru, Nb, Ta, etc. R,R' = H, Alkyl, Aryl X = Halide, Alkyl Z = C, Si, Ge, etc.

Grignard Reagents

-MgCl

Boron Compounds

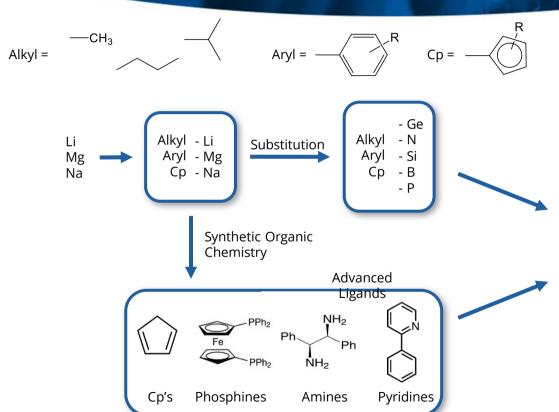
Organic Compounds





BSC Core Capabilities

Confidential



BSC Core Capabilities:

Organic chemistry
Pyrophoric reagents

Commercial scale manufacturing of air/moisture sensitive compounds

Solid Supported Catalysts

Solutions for Your Custom Chemical Needs



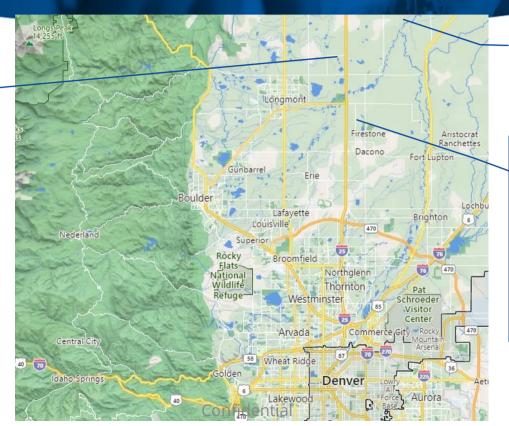


Facilities in Northern Colorado

Mead

R&D, Pilot Plant, Manufacturing, Analytical





Milliken

107 Acres Expansion
Site for Future
Production

Longmont (HQ)

R&D, Manufacturing, Corporate Office







Facilities in Northern Colorado







Production Capabilities

- Reactors of various sizes and materials of construction (lab to commercial scale)
- Variety of Filtration Technology & Centrifuges
- Commercial scale distillation
- Handling of air/moisture sensitive materials at commercial scale
 - Liquid and solid packaging
 - Pyrophoric materials







Longmont Multipurpose Expansion











R&D / Analytical Laboratories



Extensive Analytical Instrumentation & Process Safety Equipment

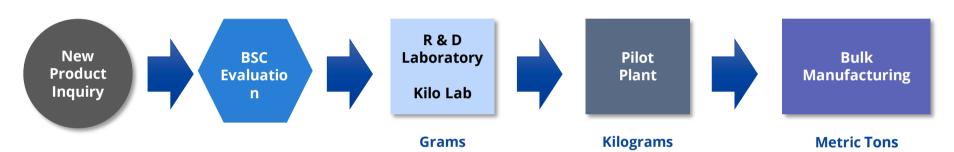
- NMR
- GC / GC-MS
- HPLC
- FTIR
- UV/VIS
- Karl Fischer
- ICP-OES / ICP-MS
- Particle Size Analyzer
- Headspace Analyzer
- Reaction Calorimeter
- DSC & TGA





Specialty Custom Manufacturing – New Products

New Product Scale-Up Work Process



- Typical Work Process: Close collaboration with customers on development
- Scale Up from R&D to Commercial Quantities

- Air & Moisture-Sensitive Compounds
- Pyrophoric Materials
- Multi-Step Syntheses





Custom Packaging and Shipping







- Solids Packaging, Drums, Cylinders, ISO Tankers
- Global Shipments
- Customer Specific Packaging and Shipping





Environmental Health & Safety













- ChemStewards Certified (SOCMA)
 Tier 3
- Member of the Colorado Green Business Network – formerly CDPHE Environmental Leader Gold Award (since 2012)
- Sustainability Platforms
 - Ecovadis
 - CDP





Culture









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ISO POOLSOID