

STRESS? WE CAN HELP.

ISO 9001 & 13485 CERTIFIED

SCIENCE BASED METHODS FOR PHARMACEUTICAL
DESIGN ANALYSIS AND TESTING SERVICES



PROCESS ENGINEERING

Process Design & Development
Technology Evaluation
Technology Transfer
(Scale-Up / Scale-Down)
Evaluate Existing Process
Improve Throughput/Optimize Process
Process Safety Management
Custom Test Equipment Design & Build
Bench Scale Test Equipment & Testing
Vial Washing/Drying/Filling Simulation



MECHANICAL INTEGRITY

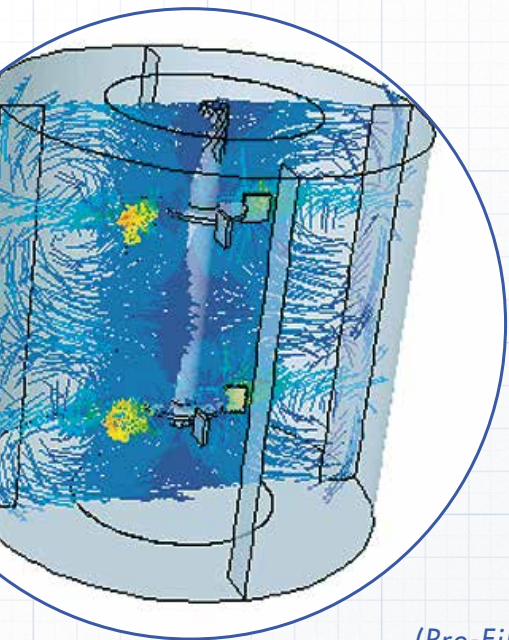
Thermal & Stress Analysis
(Equipment, Mixers, Dryers, Etc.)
Remaining Life Assessment
Metallurgical Evaluation
Strain Gaging & Vibration Monitoring
Acoustic Emission Testing
Corrosion/Erosion Assessment

FACILITIES

Flow Modeling of HVAC/Air Flow,
Cleanrooms, & Flow Benches
Explosion Containment &
Venting Design/Analysis
Design, Procurement & Construction



 **STRESS
ENGINEERING
SERVICES INC.**



MANUFACTURING SUPPORT

Manufacturability Assessment
Data Gathering
Reliability & Throughput Improvement
Mfg. Process Evaluation
Mfg. Line Audit
Mfg. Line Design & Setup
Lean 6 Sigma/Total Quality

COMBINATION PRODUCTS (Pre-Filled Syringes/Inhalers/Syringes)

Drug Delivery Device Development
Analytical Design Support
Human Factors/Usability
Component/Device/Material Testing
Materials Characterization & Selection
Failure Analysis
Reliability Assessment
Risk Mitigation
Manufacturing Support
Stability/Conditioning Studies



PHARMACEUTICAL PACKAGING (Vials/Autoinjectors/Inhalers/Syringes)

Packaging Design & Development
Package Performance Analysis
Materials Characterization & Selection
Material & Package Testing
Package Failure Analysis
Cost Reduction
Transportation Studies
Stability/Conditioning Studies
ASTM D4169 Requirements



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