



Inertion Control Systems

SPECIALIST IN GAS TESTING, INSTRUMENTATION, VALIDATION AND DESIGN

SGS GAS recently completed the design, supply and installation of an Inertion Management System that provided an Independent Layer of Protection on a Filter Dryer for a large pharmaceutical manufacturing facility in the United Kingdom.

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Instrumentation Case Study

During a HAZOP assessment for a pharmaceutical client, it was identified that the risk of explosion within the Filter Dryer necessitated an Independent Layer of Protection Analysis to achieve a SIL2 rating. Following a detailed examination of the User Requirement Specification (URS), the SGS GAS project team devised a custom design that not only met but exceeded all URS requirements for this pharmaceutical client's application.

In preparing a Functional Design Specification (FDS) for API (Active Pharmaceutical Ingredient) manufacturers, we take into consideration various factors such as pressure and vacuum ranges, ATEX compliance, material compatibility, as well as the impact of high temperatures and concentrations of moisture and solvent vapours. In addition to integrating a sample conditioning system, a Servomex 1900 Oxy with a SIL2 rating, incorporating non-depleting paramagnetic technology, was selected as the most reliable choice for O2 measurements. The system also included a SIL2 pressure transmitter with a SIL3 Rated PLC to manage the interlock, integrated with the customer's SIL2 Variable Speed Drive.

The construction of the system was carried out within SGS GAS's purpose-built sample system manufacturing facility, overseen by our CompEx approved electricians and qualified mechanical and electrical engineers.



A Factory Acceptance Test (FAT) was successfully completed prior to delivery. Following this, the onsite installation and commissioning were handled by SGS GAS engineers in a cGMP environment, where a Site Acceptance Test (SAT) was conducted to ensure compliance and functionality.

Recent pharmaceutical related projects undertaken by SGS GAS include:

- Installation of a Tuneable Diode Laser (TDL) monitoring system for oxygen process control in an API product facility.
- Development of an Inertion control system for a powder mill in a large pharmaceutical plant in Ireland.

- System for monitoring Hydrogen eluted during the "Suzuki reaction"- key in the synthesis of complex organic molecules typical in API product facility.

Furthermore, SGS GAS provides a comprehensive documentation and support package to every customer, including FDS, Operation and Maintenance (O&M) instructions, General Arrangement drawings, Electrical and Mechanical Schematics, Descriptive System Documents (DSD), Cable Schedule, Bill of Materials (BOM), Inspection and Test Reports, Material Certificates, FAT & SAT documents, as well as Analyser and accessory manuals.

Additionally, SGS GAS provide planned preventative maintenance and 24/7 call-out support under a Service Level Agreement (SLA) which is managed by our team of 16 trained service engineers who adhere to ISO standards. Subsequently, during a thorough examination of the User Requirement Specification (URS), the SGS GAS project team devised a custom design that exceeded all URS requirements.

CONTACT US
IE.GAS.INFO@SGS.COM
WWW.SGS.COM/GAS

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