Blood fractionation – making the most of every drop

Pharmaceutical and Life Science Industries
Siemens’ products and systems meet the following blood fractionation process challenges:

- **Strict regulations**: all steps in a Siemens solution, from blood/plasma donation to plasma delivery, are strictly controlled and traceable, to rule out contamination of the end products by pathogenic agents.

- **Explosion protection**: Siemens solutions meet the special personnel and safety demands caused by the large amounts of ethanol required for purification during the Cohn process.

- **Cleanroom environment**: Siemens Building Technologies portfolio provides the perfect fit for an adequate production environment.

- **Batch control**: on top of the challenges above the blood fractionation process demands a state-of-the-art batch control system. The integrated PCS 7 functionality SIMATIC Batch ensures flexible automation.
A Consistent and Efficient Portfolio

Siemens is an internationally experienced partner for blood plasma fractionation. Its comprehensive product and service portfolio meets all basic branch requirements from data tracking and a safe process to building technology.

- **Reliable explosion protection**
  - Unique value: Siemens’ fast, reliable signal routing solution is unique on the market for application in Ex hazardous areas.
  - Flexible system: Siemens offers a scalable, flexible solution that is based on SIMATIC PCS 7 with PROFIBUS PA fieldbus technology and the intrinsically safe and modular SIMATIC ET 200iSP I/O system.
  - Intrinsically safe yet convenient: the ET 200iSP I/O system can be installed directly in Zone 2, the connected sensors in Zone 1.

- **Innovative fail-safe function**
  - Innovative integration of fail-safe signals: compared with conventional solutions, SIMATIC PCS 7 connects with SIMATIC Safety to introduce integrated fail-safe functions in a very harmonious way.
  - Significant cost savings: by integrating safety technology into the standard automation, far-reaching advantages and significant cost savings can be achieved of the entire life cycle of the plants.

- **EBR, SIMATIC Batch and Route Control**
  - Paperless and exhaustive documentation: SIMATIC PCS 7 offers all the functions for creating Electronic Batch Reports of all batch data.
  - Adaptability: Siemens’ process control system can be optimally adapted to the respective requirements by numerous system extensions.
  - Flexible automation: the modular batch control add-on SIMATIC Batch ensures flexible automation.
  - Compliant with 21 CFR Part 11: SIMATIC PCS 7 supports functions such as Audit Trail, Access Protection or Electronic Signature, in accordance with 21 CFR Part 11.
  - Reliable hygiene: SIMATIC Route Control, an optimum addition, controls material flow and reliably controls the hygiene status of the equipment.

- **Integration of package units**
  - Simplified application: SIMATIC PCS 7 simplifies the integration of package units both with SIMATIC systems such as S7 and WinCC and OEM systems.
  - Reduced costs: integration reduces costs for engineering and training.
  - Consistency: integration provides consistent data storage throughout the process.
• **Consistent tracking and tracing**
  - **Experience you can trust**: Siemens works hand in hand with proven partners to enable consistent tracking of blood and plasma from donor to patient.
  - **State-of-the-art RFID technology**: a solution for the comprehensive monitoring of blood donations that is based on radio frequency identification (RFID) makes transfusions safer.
  - **Improved safety**: a temperature sensor in the system also enables continuous monitoring of the cooling chain.

• **Optimum ambient conditions**
  - **Exact specification compliance**: ambient conditions in the blood plasma industry play a decisive role in the quality and purity of the end product. Siemens provides support with the exact compliance with the respective specifications.
  - **Custom solutions**: Siemens supplies tailor-made solutions for blood fractionation based on our wide range of products for building automation and safety.
  - **Precision control**: Siemens solutions precisely monitor and control temperature, humidity or pressure.
  - **Accordance with 21 CFR Part 11**: all Siemens controls, including innovative alarm systems or GMP-compatible access control, are in accordance with 21 CFR Part 11.

On the basis of Totally Integrated Automation (Siemens’ unique range for consistent automation), Totally Integrated Power (Siemens’ consistent solutions for energy distribution), and Total Building Solutions (Siemens’ comprehensive program for building technology), it is clear that Siemens supplies an efficient portfolio for all requirements in blood plasma fractionation.

**Proven in practice: international projects**
Siemens has implemented successful automation solutions for almost all blood plasma product manufacturers worldwide. The following reference plants at e.g. CSL, Australia and Ronsen, China show only a portion of our long years of commitment in all areas of blood plasma fractionation.

For more information see: **siemens.com/pharma**
In numerous projects with almost all well-known manufacturers of blood plasma products around the world, Siemens has gained extensive knowledge about the sensitive processes of blood plasma fractionation and channeled it into a unique industry-specific portfolio.

As an automation market leader in blood process fractionation, Siemens covers the entire process with efficient and uniform solutions that are tailor-made for the requirements of each process step. The heart of our portfolio is the SIMATIC PCS 7 distributed control system (DCS). It meets the requirements for blood plasma fractionation more comprehensively and efficiently than any other system available on the market.
The information provided in this brochure contains merely general descriptions or characteristics of performance which in actual case of use do not always apply as described or which may change as a result of further development of the products. An obligation to provide the respective characteristics shall only exist if expressly agreed in the terms of contract.

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