

SIEMENS



Blood fractionation – making the most of every drop

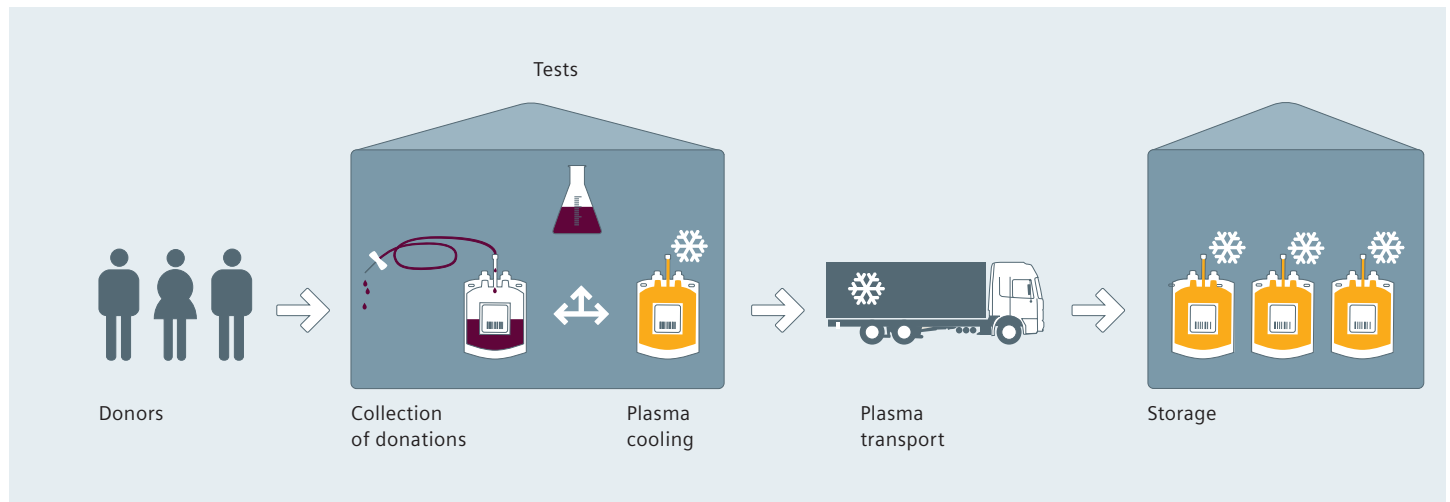
Pharmaceutical Industry

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Proven expertise

The demand for blood plasma-based products is continuously increasing. But it is becoming more and more difficult to meet. One reason is that blood as a raw material has limited availability. Another reason is that the yield from the raw material is very low, compared to production of pharmaceutical products. Not only that, the blood fractionation process must meet demanding regulations and highly sensitive production scenarios. To achieve the most effective and safest extraction process, Siemens has worked with companies from around the world for many years. The result is an integrated portfolio of products and systems for all steps in the blood plasma fractionation process.



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:** We offer a scalable, flexible solution that is based on SIMATIC PCS 7 with PROFIBUS PA field bus 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.

Integrated fail-safe function

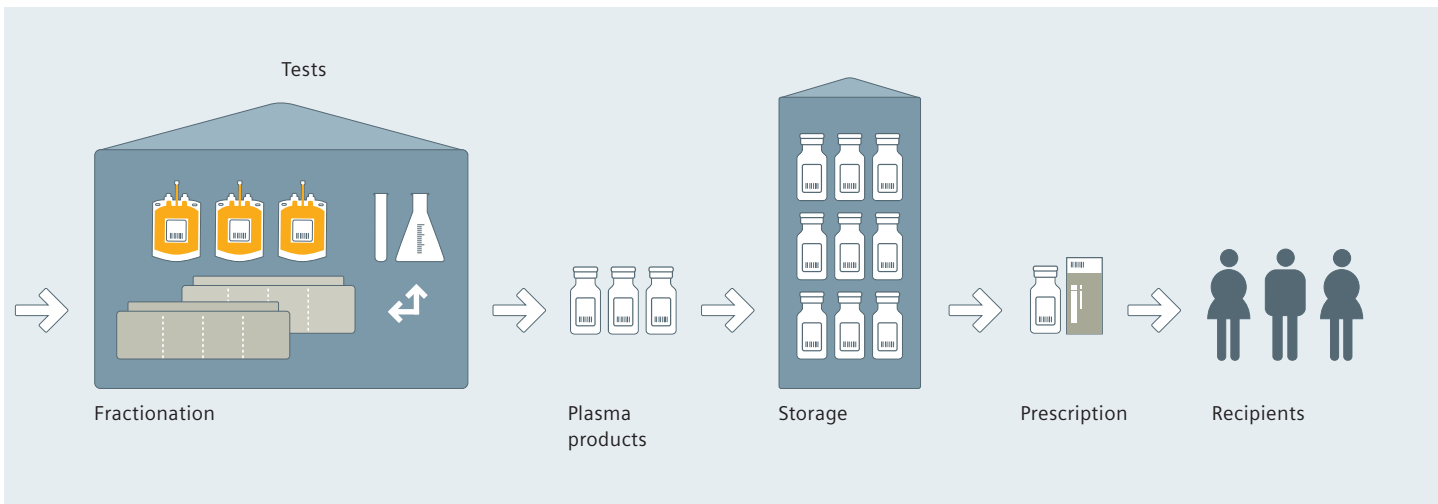
- **Innovative integration of fail-safe signals:** Compared with conventional solutions, SIMATIC PCS 7 connects with SIMATIC Safety to introduce integrated fail-safe functions in a very harmonious way.
- **Significant cost savings:** By integrating safety technology into the standard automation, far-reaching 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 (eBR) 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.



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

Almost all global suppliers of blood plasma products rely on automation solutions from Siemens for their production processes. Numerous references provide ample evidence of our long-time commitment to all areas of blood plasma fractionation.

Our 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.
- **Clean room environment**
- **Batch control:** The integrated PCS 7 functionality SIMATIC Batch ensures flexible automation.

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.



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for a strong future of
the pharmaceutical
industry.

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