Mirasol® Pathogen Reduction Technology (PRT) System
Simplicity by Design

TERUMO
BLOOD AND CELL TECHNOLOGIES

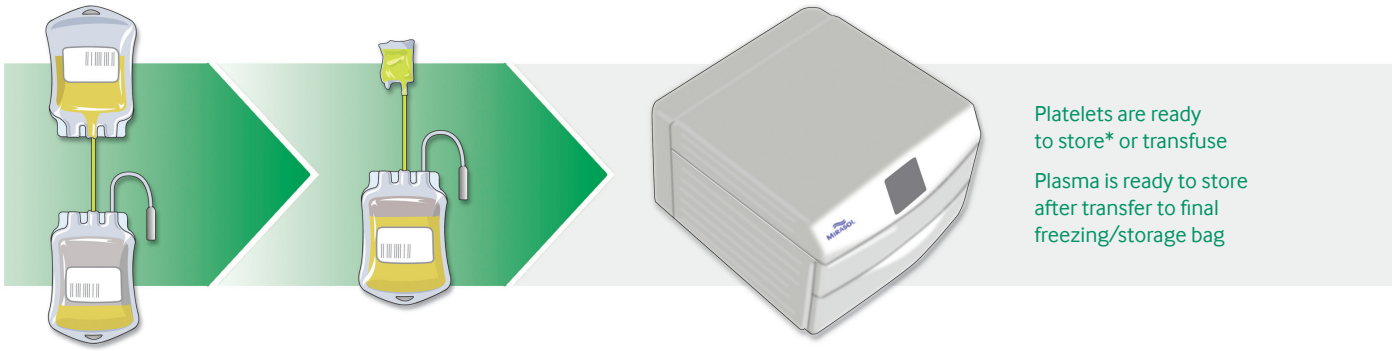
A simple, proven system with built-in flexibility

The innovative process of Mirasol technology involves adding riboflavin to the platelet or plasma product, which is then exposed to ultraviolet light for a short period of time — 10 minutes or less. This illumination triggers a photochemical reaction that prevents DNA and RNA replication.

Using this simple process, the Mirasol system reduces the pathogen load and inactivates white blood cells in blood products. With no need to remove the riboflavin or its photoproducts, treated products are immediately available to transfuse or store. The Mirasol system is easy to implement; easy to use; and provides simple, accurate data management and reporting. The system consists of a Mirasol Illuminator, disposable sets, and fully integrated data capture and storage software.

Blood safety made simple

- A single system for platelets and plasma
- Minimal training time
- Limited bag transfers; less than 5 minutes hands-on time
- Less than 15 minutes total processing time[1]
- Less than 3 percent platelet processing loss[1,2]



**Platelet additive solution (PAS) may need to be added after illumination to platelet concentrates with reduced plasma content to ensure adequate storage conditions for up to 7 days (as recommended in the Instructions for Use)*

Meeting your needs by design

The system is adaptable, giving you many options for implementing it into unique settings.

- Use one or several Illuminators as needed, to support production needs
- Multiple Illuminators can be set up in the same work area or distributed throughout a facility for optimal workflow and equipment layout
- Illuminators can be networked for centralized data capture
- Intuitive, icon-based user interface

Our easy-to-use software program, Mirasol® Manager, enhances operational efficiency and traceability through convenient data management and reporting.

A flexible process for platelets

- Handles many types of platelet products (apheresis and whole blood-derived) including those produced via the Buffy Coat and the platelet-rich plasma (PRP) methods
- Accommodates use of plasma or various phosphate containing PAS solutions for platelet storage
- Easily fits into existing processes, offering broad treatment specifications
- Allows treatment of double and triple dose platelet products, reducing costs

Characteristics	Platelets in Plasma	Plasma-Reduced Platelets	Platelets in PAS
Platelet Source	Apheresis or whole blood-derived platelets in plasma	Hyperconcentrated apheresis platelets in plasma	Apheresis or whole blood-derived platelets in PAS (30% to 45% residual plasma)‡
Treatment Window	Apheresis: Treat within 2 to 22 hours of collection	Apheresis: Treat within 2 to 18 hours of collection	Apheresis: Treat within 2 to 22 hours of collection
	Whole blood (WB): Treat within 8 hours of preparing platelet concentrate and within 32 hours of collection	WB: Treat within 32 hours of collection	WB: Treat within 8 hours of preparing platelet concentrate and within 32 hours of collection
Platelet Product Volume*	170 to 360 mL	90 to 360 mL	250 to 450 mL
Platelet Product Concentration*	0.80 to 2.10 x 10^6 platelets/µL	1.75 to 3.40 x 10^6 platelets/µL	0.80 to 1.50 x 10^6 platelets/µL
Platelet Yield†	Up to 7.50 x 10^{11}	Up to 12.0 x 10^{11}	2.40 to 6.75 x 10^{11}
Storage Concentration	0.70 to 2.10 x 10^6 platelets/µL	0.70 to 1.50 x 10^6 platelets/µL after addition of PAS	0.70 to 1.50 x 10^6 platelets/µL
Allowable Storage Time§	Up to 5 days‡	Up to 7 days	Up to 7 days

**Prior to riboflavin addition*
†The upper yield limit may vary based on the specific concentration and/or volume limits used in your facility; product may need to be split and stored in separate storage bags
‡Solutions containing phosphate buffer are recommended for storage of Mirasol-treated platelet products, as per the Instructions for Use
§Treated product may need to be split and stored in separate bags based on specified upper limits for volume and yield per storage bag, as per the Instructions for Use

Plasma treatment made simple

- Process accommodates single-unit plasma volumes
- Handles both apheresis and whole blood-derived plasma products
- Validated for a variety of blood bank processing conditions for fresh frozen plasma (FFP)
- Can treat FFP (frozen within 8 hours), removing time constraints associated with FFP processing
- Can replace quarantine methods by inactivating pathogens in FFP prior to transfusion[3,4]

Characteristics	Plasma Treatment and Storage Specifications
Plasma Source	Apheresis or whole blood-derived plasma
Plasma Volume	170 to 360 mL
Treatment Window	Apheresis plasma: Treat and freeze within 8 hours of collection Whole blood-derived plasma: Treat and freeze within 6 hours of separation* Previously frozen plasma: Treat and refreeze within 2 hours
Mirasol-Treated FFP Storage Period	Maximum storage period: 2 years from date of collection at ≤ -30 °C
Mirasol-Treated FFP Protein Quality	Mirasol-treated FFP meets the Council of Europe guidelines for protein content of FFP

**Plasma may be stored in whole blood form at 4 °C ± 2 °C for up to 18 hours prior to separation*

Learn how the Mirasol system can help you provide safer blood products today.
Contact your Terumo Blood and Cell Technologies sales representative or visit terumobct.com for additional information.

Available in select markets. Not approved for sale in the U.S. Not licensed for sale in Canada.
Refer to the Mirasol Disposables' Instructions for Use for a complete list of Mirasol process specifications.

References

[1]de Cock P, et al. The Mirasol Evaluation Program: Use of Mirasol Pathogen Reduction Technology for Platelets in Routine Clinical Practice. *Transfusion.* 2008;48(Suppl.):156A.

[2]The Mirasol Clinical Evaluation Study Group, A Randomized Controlled Clinical Trial Evaluating the Performance and Safety of Platelets Treated With Mirasol Pathogen Reduction Technology. *Transfusion.* 2010;50(11):2362-2375.

[3]European Committee on Blood Transfusion, Guide to the Preparation, Use and Quality Assurance of Blood Components, 2013, 17th Edition, European Directorate for the Quality of Medicines & HealthCare, Strasbourg, France.

[4]Hellstern P, Haubelt H. Manufacture and Composition of Fresh Frozen Plasma and Virus-Inactivated Therapeutic Plasma Preparations: Correlation Between Composition and Therapeutic Efficacy. *Thrombosis Research.* 2002;107,(Suppl.):S3-S8.

TERUMO BLOOD AND CELL TECHNOLOGIES

Terumo Blood and Cell Technologies is a medical technology company. Our products, software and services enable customers to collect and prepare blood and cells to help treat challenging diseases and conditions. Our employees around the world believe in the potential of blood and cells to do even more for patients than they do today. **TERUMOBCT.COM**

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