Australian Red Cross
BLOOD SERVICE

INFORMATION SHEET – MARCH 2019

Introduction of Apheresis Platelets in Platelet Additive Solution (PAS) and Triple Dose Apheresis Platelets

On 28 March 2019, the Australian Red Cross Blood Service will be commencing the production of apheresis platelets suspended in platelet additive solution (PAS) using the same additive solution, SSP+, as is presently used in the manufacture of pooled platelets.

Concurrently, we will commence manufacturing triple dose apheresis platelets from suitable plateletpheresis donations.

Background

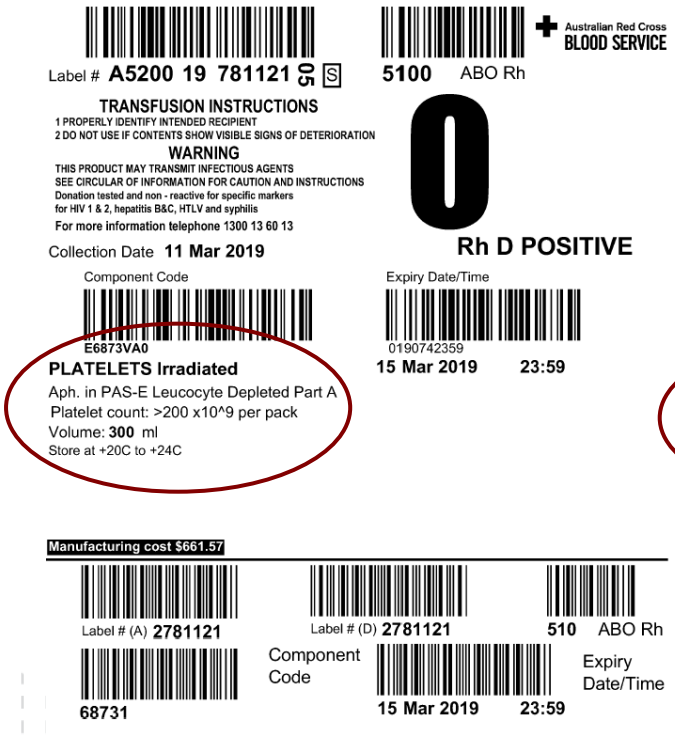
Currently, the Blood Service produces apheresis platelets suspended in 100% plasma. The transition to apheresis platelets in PAS will result in reduced levels of residual plasma, which can be expected to reduce the incidence of transfusion-related acute lung injury (TRALI) and allergic reactions in patients receiving these components.

The introduction of triple dose apheresis platelet collections, in addition to the current single and double dose collections, will help improve overall platelet availability, particularly during periods of high clinical demand.

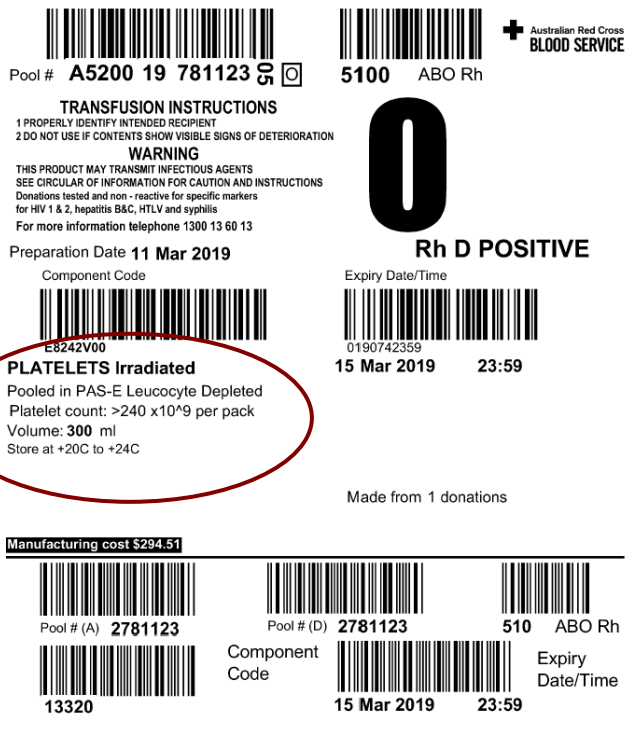
Changes to the component label

To align with ICCBBA generic nomenclature for platelet additive solutions, SSP+ will now be referred to as “PAS-E” in the component description rather than by its proprietary name. For consistency, this change will also be applied to the pooled platelet component description.

Label A: Apheresis Platelets in PAS-E



Label B: Pooled Platelets in PAS-E



The following table provides a complete list of the new platelet component descriptions.

Table 1: Platelet component descriptions

Apheresis Platelets
PLATELETS Irradiated Aph. In PAS-E Leucocyte Depleted Part A
PLATELETS Irradiated Aph. In PAS-E Leucocyte Depleted Part B
PLATELETS Irradiated Aph. In PAS-E Leucocyte Depleted Part C
Paediatric Apheresis Platelets [a]
PLATELETS Paediatric Irradiated Aph. In PAS-E Leucocyte Depleted Part Aa
PLATELETS Paediatric Irradiated Aph. In PAS-E Leucocyte Depleted Part Ab
PLATELETS Paediatric Irradiated Aph. In PAS-E Leucocyte Depleted Part Ac
PLATELETS Paediatric Irradiated Aph. In PAS-E Leucocyte Depleted Part Ba
PLATELETS Paediatric Irradiated Aph. In PAS-E Leucocyte Depleted Part Bb
PLATELETS Paediatric Irradiated Aph. In PAS-E Leucocyte Depleted Part Bc
PLATELETS Paediatric Irradiated Aph. In PAS-E Leucocyte Depleted Part Ca
PLATELETS Paediatric Irradiated Aph. In PAS-E Leucocyte Depleted Part Cb
PLATELETS Paediatric Irradiated Aph. In PAS-E Leucocyte Depleted Part Cc
Pooled Platelets
PLATELETS Irradiated Pooled in PAS-E Leucocyte Depleted

[a] Due to a slight reduction in the final platelet concentration, there will be a small increase to the average volume of the paediatric platelet packs (from the current 50mL to about 55mL). Only three paediatric apheresis platelet packs will be produced from one adult dose apheresis platelet pack.

Transition period

Following the commencement of the manufacturing change on 28 March 2019, there will be a short transition period during which hospitals may receive a mixed inventory of apheresis platelets in plasma and apheresis platelets in PAS. At the completion of this transition, apheresis platelets suspended in 100% plasma will no longer be available.

Choice of platelet components

- Platelet components of the same ABO group as the recipient are the components of choice.
- Where these are unavailable (e.g. due to limited inventory, or the need for human leucocyte antigen (HLA) or human platelet antigen (HPA) matching), ABO incompatible platelets may need to be used. When transfusing across ABO blood groups, the risk of haemolysis due to anti-A and/or anti-B may be reduced by using platelet components that are known to have low titre of anti-A and/or anti-B, and/or plasma-reduced and suspended in additive solution.
- Pooled platelets are suspended in platelet additive solution (PAS) and pose a lower risk of haemolysis if ABO incompatible platelets are transfused.
- Whilst apheresis platelets suspended in PAS have reduced levels of residual plasma, it is recommended that transfusion of minor ABO-mismatched apheresis platelets in PAS be avoided unless they are labelled as having “Low anti-A/B”.
- *It should be noted that screening for high titre anti-A/B does not provide absolute assurance that a haemolytic reaction will not occur. Caution should always be taken when selecting and transfusing ABO incompatible components.*

Table 2: Platelet compatibility

Recipient ABO Group	Platelet Component ABO Group		
	1st Choice	2nd Choice	3rd Choice
O	O	A*	B
A	A	B# or O#	AB
B	B	A*# or O#	AB
AB	AB	A# or B#	O#
Unknown	A*# or O#	-	-

* Group A platelets that have an **A2** subgroup do not express significant amounts of A antigen and are, therefore, more preferable for transfusion to group O and B recipients than other group A platelets.

Apheresis platelets in PAS that have **low titre anti A/B**, or **pooled platelets**, pose a lower risk of haemolysis when transfusing ABO incompatible components

Table 3: Comparison of Apheresis Platelets in Platelet Additive Solution (PAS) and Pooled Platelets in PAS

	Apheresis Platelets in PAS		Pooled Platelets in PAS	
	Specification	Typical Unit Content [1] (Mean ± SD)	Specification	Typical Unit Content [2] (Mean ± SD)
Volume (mL)	100 – 400	198 ± 11	> 160	336 ± 15
Platelet count (x10⁹/unit)	> 200 to ≤ 450	274 ± 31	> 240	263 ± 36
pH (at expiry)	6.4 – 7.6	7.2 ± 0.1	6.4 – 7.4	7.0 ± 0.1
Leucocyte count (x10⁶/unit)	< 1.0	0.1 ± 0.1	< 0.8	0.2 ± 0.2
Platelet additive solution (PAS)	PAS-E (SSP+)		PAS-E (SSP+)	
PAS content as % of the total component volume	Approximately 60%		Approximately 70%	
Availability	Available in group O, A and B; and Rh (D) positive and negative groups. Group AB must be requested in advance.		Available in groups O, A and B; and Rh (D) positive and negative groups.	
Shelf life, storage	5 days at 20–24 °C. Platelets components must be agitated gently and continuously in a single layer on a platelet agitator.		5 days at 20–24 °C. Platelets components must be agitated gently and continuously in a single layer on a platelet agitator.	
Modifications	CMV-seronegative; Irradiated; HLA-compatible; Phenotyped; Low anti-A/B.		CMV-seronegative; Irradiated.	

[1] Based on Blood Service validation data

[2] Based on Blood Service data from 1 January to 31 December 2017