Customer receipt and storage of plasma unit guide

This guidance refers to Fresh Frozen Plasma (FFP), Frozen Plasma (FP), Cryo-Precipitate (Cryo-P), and Cryo-Supernatant (Cryo-S), hereby referred to as frozen plasma units.

Expiry dates of frozen plasma units

FFP has an expiry date of 12 months from the date of collection. After 12 months, this unit can be relabelled and stored for a further four years as FP.

FP has an expiry date of five years from the date of collection.

Cryo-P and Cryo-S have expiry dates of 12 months from the date of collection.

All expiry dates are shown on the unit label. On the date of expiry, the unit must be discarded as clinical waste. The only exception is FFP which can be relabelled as FP, as stated above.

Receipt of frozen plasma units

All practices should have an acceptance policy in place for the receipt of blood products. Acceptance of blood products into your facility should be performed by a trained member of staff and as soon as possible after receipt of the delivery. Where present in the transport box, the timestrip should be verified as part of the acceptance policy. Guidance on reading timestrips can be found on our website.

All our frozen plasma units are subject to quality control checks prior to release, which includes confirmation of the integrity and normal appearance of the unit. However, some faults present at issue may only become visible in a defrosted plasma unit. Frozen plasma units are carefully packaged in padded envelopes for transit as they are very brittle and easily damaged. Please inspect your frozen plasma unit upon receipt as part of your acceptance policy. If you have received a visibly damaged unit, we kindly ask that you inform us within 24 hours of receipt so we can investigate this.

After 24 hours of receipt, damaged units demonstrating broken ports, missing, or damaged corners may not be subject to replacement as the changes may have occurred because of sub-optimal on-site handling and storage.

We are aware of a unit packaging fault that may be present at issue, but which only becomes visible once the unit has thawed. This fault is a separation of the unit bag from the seam, typically near the corner (see figure 1), although often the separation is much smaller than this. Frozen units that demonstrate this damage once thawed will be subject to replacement.

Figure 1: bag seam separation

To maintain the optimum quality of your frozen plasma units, please follow our storage guidance below.

Storage of frozen plasma units

To ensure frozen units are being stored correctly at a temperature of -18°C or lower (Kaplan, 2021), it is vital that the correct equipment is used. The freezer should not have an auto-defrost as this will significantly decrease the lifespan of the units. A dedicated freezer that maintains a temperature of -18°C or below with a continuous max/min temperature recording thermometer is ideal. Take care when positioning your freezer to avoid placing it in direct sunlight and close to heating or cooling vents. Temperatures should be read and recorded at least twice daily and fluctuations outside of the normal range immediately reported to a designated member of staff. A storage temperature below -18°C improves the preservation of labile coagulation factors (Nayak and Nayak, 2020), however lower temperatures increase the fragility of the units. We have a plasma freezer temperature log available for download on our website.

Plasma units are supplied in a padded envelope containing a card insert (see figure 2). We recommend that you store the units carefully within this packaging to protect them from damage. This is especially important if the freezer they are stored in is multipurpose. All staff involved in handling plasma units should be instructed on proper handling. Frozen units can remain in their zip lock bag during storage. Ensure that stock is rotated so that older units are accessed first.

Storage of plasma units without any protection is done so at the practice's own risk as this can easily result in damage and the avoidable loss of units.

Figure 2: plasma unit packaging

If stored in the provided padded envelope, the product name, unit ID, blood type, volume and expiry date can be transferred to the outer envelope for ease of identification.

If plasma has been exposed to an increase in core temperature for under four hours at 22°C (+/- 2°C) or 24 hours if stored at 4°C (+/- 2°C), i.e. due to equipment failure) the unit may be refrozen and released for transfusion provided:

- That, in the case of FFP and Cryo-P, the plasma unit is relabelled as FP
- That the plasma unit has been exposed to such a temperature change on one occasion only
- That a documented system is available to cover such eventualities
- That adequate records of the incident are compiled and retained

If plasma units are removed from storage to be transfused but are then no longer required, the unit may be stored and should be used within four hours if maintained at 22°C (+/- 2°C) or up to a

maximum 120 hours if stored at 4°C (+/- 2°C). However, it should be kept in mind that extended post-thaw storage will result in a decline of the content of labile coagulation factors. Further information can be found on in our step by step guide to blood unit separation.

All plasma units should be discarded after four hours from breach when held at room temperature.

Appearance of frozen plasma units

Abnormalities in the appearance of frozen plasma units are uncommon. These units are not metabolically active during storage and therefore do not undergo age-related decline to the same degree as red cell products. You should check the frozen units for signs of storage damage prior to defrosting and check the integrity once thawed as some storage damage will not become apparent until the unit is in its liquid state. The thawed unit should also be checked for any discolouration or turbidity prior to administration. The unit should not be transfused if any damage or abnormality is noted.

Please notify Pet Blood Bank as soon as possible of any abnormalities prior to discarding the unit. We may wish to investigate this further in line with our returns policy and this may require the unit to be returned. Ensure that the unit is clearly marked to indicate it cannot be administered to a patient.

References

Kaplan, A. (2021). 'Preparation, Storage and Characteristics of Whole Blood, Blood Components and Plasma Derivatives, in McCullough, J. (Ed.) *Transfusion Medicine Fifth Edition.* Oxford: Wiley & Sons

National Blood Service. (2013). *Guidelines for the Blood Transfusion Services in the United Kingdom*, 8th edition. TSO

Nayak, R. and Nayak, R. (2020). *Manual of Transfusion Medicine.* London: Jaypee Brothers