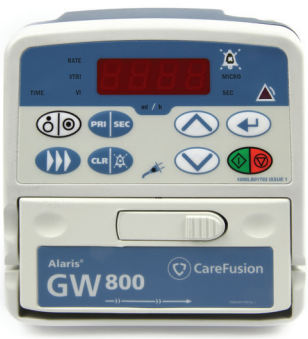
Blood transfusion with pumps

Alaris™ GW & GW800 volumetric pump

The haemolysis test is intended to provide a means of screening devices and materials which have extensive contact with human blood, for potential haemolytic activity.

Devices such as intravenous catheters and transfusion equipment, and products such as wound dressings and graft materials may produce various effects on blood, of which clotting and thrombosis are the most obvious evidence of blood material incompatibility. Adverse effects on plasma proteins, enzymes and the formed blood elements can also occur.

BD initiated this particular study[1]. It was performed to investigate possible interactions between human blood and Alaris GW infusion lines concentrating on the infusion pump process and the anti-syphon valve of the infusion line. Testing previously performed by Alaris verified the non-haemolytic nature of the infusion line materials.



BD

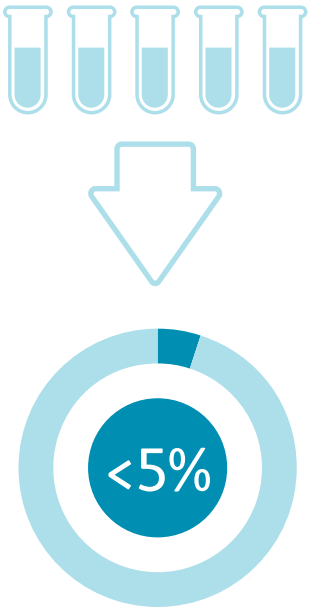
Method

Whole human blood was passed through five representative samples from one manufactured lot of Asena GW set using the Asena GW infusion pump (rather than gravity or other means) terminating in a 21G needle.

- The blood was mixed with 0.9% sodium chloride (saline) and incubated for 1 hour at 37'C.
- The samples were then centrifuged and the absorbence of the supernatant determined using a spectrophotometer.

Results

The haemolysis values obtained from the five representative samples were all less than 5%.



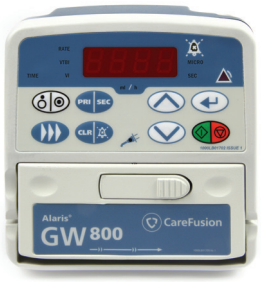
- The negative control (syringe/connection taps and tubing) was non-haemolytic under the conditions of this test.
- The positive control (0.1% sodium carbonate) was haemolytic under the conditions of this test.

Conclusion

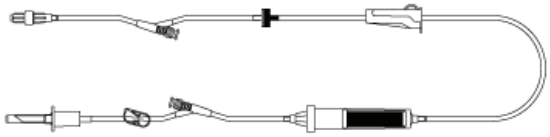
Whole human blood passed through five representative samples from one manufactured lot of Asena GW sets showed no evidence of haemolytic effects.

Therefore the infusion pump process and the anti-syphon valve of the infusion line were considered to be non-haemolytic under the conditions of this test.

Alaris GW and GW800 infusion pump

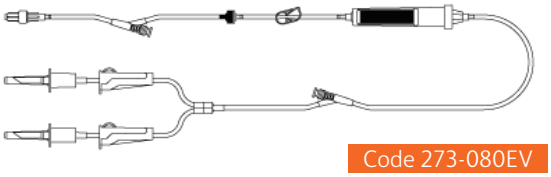


Alaris GW blood infusion set



Code 273-008EV

Alaris GW blood infusion set



Code 273-080EV

Implementing the use of volumetric pumps such as Alaris System, for blood transfusion would:

- improve patient safety[2]
- improve clinician's efficiency[3]
- contribute to reduce costs

1 SPL Project Number: 1222/010 Asena GW Blood Compatibility – haemolysis test direct contact method (Iso 10993-4) Safepharm Laboratories Limited. Full study available upon request (2001).

2. Intravenous Infusion Practices and Errors (ECLIPSE): protocol for a mixed-methods observationnal study- Ann Blandford- Imperial College Healthcare 2017

3. Thames Valley Chemotherapy Regimens: Colorectal Cancer- June 2015- Urological cancer October 2014- Breast cancer: March 2014- Lung cancer: October 2014

BD - Europe, Terre-Bonne Park - A4, Route de Crassier 17, 1262 Eysins, Switzerland

bd.com