Customer Service Report CS0014

ISAF WASHING PROGRAM

A washing, siliconization and drying method for pharmaceutical rubber closures using Purified Water and Water-for-Injection

Edition 3

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Distribution List:
VP R&D and Technology, Global Product Support Mgr, Tooling Mgr, Materials Development Mgr, Product Development Mgr, Global Dir. of Scientific Affairs, Alu/Plastic R&D Mgr, R&D and Technology Project Mgrs

Report type: General

1 Abstract

The ISAF washing program is a method for washing, siliconization and drying of pharmaceutical rubber parts.

Typical for this method is the use of a high-viscosity (30,000 cSt) silicone oil and the use of Purified Water in rinsing steps preceding a final rinse of the products with Water-for-Injection.

The washing process takes place in a proprietary drum-type washing machine.

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3 Description of ISAF washing program

3.1 Step 1 : Washing

The rubber parts are first washed with cold, softened water that is filtered through a 1-µm filter. A small quantity of an alkyl-glycol polyether is added as a non-ionic detergent.

3.2 Step 2 : Rinse

After drainage of the wash water, the products are rinsed by means of a high-pressure water shower. The rinsing water is cold Purified Water. The rinsing water is immediately drained.

3.3 Step 3 : Siliconization

In the washing machine, the rubber parts are covered with cold Purified Water. High viscosity silicone oil (Silbione Oil 70047 V30000 from Bluestar Silicones) is injected into the water. This silicone oil meets the requirements of the European Pharmacopoeia 3.1.8. for "Silicone oil used as a lubricant" and also the requirements of the USP Official Monograph for Dimethicone.

The quantity of oil is calculated based on the required siliconization degree and taking into account the type of product, the product compound and the quantity of rubber parts being processed.

3.4 Step 4 : Final rinse with Water-for-Injection

The products are rinsed with Water-for-Injection. This WFI is prepared by the technique of distillation and is kept circulating in a loop at 80 °C min.
Compliance of Water-for-Injection with Datwyler requirements is documented. Datwyler requirements are equivalent with USP and European Pharmacopoeia requirements, whichever is the strictest.

3.5 Step 5 : Drying

Drying occurs by means of HEPA-filtered air. Since the rubber products after the final rinse with WFI are already high in surface temperature, the drying air is not continuously being heated.

4 Notes

- After drying, stoppers are packed in bags under laminar flow conditions.

- Datwyler Pharma Packaging "Ready-for-Sterilization" (RfS®) closures are manufactured to very high standards of particulate and biological cleanliness. Washing and packaging takes place in a clean room area which complies with the requirements for supporting clean areas of the 2004 FDA "Guideline for Sterile Products produced by aseptic processing" and the Grade C requirements of the 2008 'EU Guidelines to Good Manufacturing Practice - Medicinal Products for Human and Veterinary Use - Annex 1 : Manufacture of Sterile Medicinal Products'. Of these two guidelines, the most stringent of any particular requirement is applied.

- ISAF washing is a validated process

- As part of the Datwyler Pharma Packaging Quality System cleanroom air, process air and all water types used for washing and rinsing products are subjected to frequent particulate and microbiological controls.

- All batch data pertaining to the ISAF process are fully retrievable.

- Standard siliconization degrees ISAF1 and ISAF2 correspond with the following target ranges :

  - ✓ ISAF1 : 10 – 25 µg silicone/cm² rubber ; ISAF1 is a standard siliconization degree for stopper applications.
  - ✓ ISAF2 : 15 – 35 µg silicone/cm² rubber ; ISAF2 is a standard siliconization degree for plunger applications.

5 History

Edition (issue date)	Change (chapter + change)	Comment (rationale)
1 (April 28, 2005)	N/A	First edition
2 (March 16, 2006)	New lay out	Updated lay-out
3 (December 12, 2012)	Datwyler logo	New company logo
	Name change from Rhodia towards Bluestar Silicones	Supplier name change
	Par.3.3 (reference to USP)	Updated references
	Par.4 (reference to EU guidelines)	