

# Ultipor™ VF DV20

## VIRUS REMOVAL FILTERS IN MINIDISC CAPSULES

### Easily scalable capsule for virus removal and small-scale membrane qualification studies

Minidisc capsules incorporate Ultipor® VF DV20 membrane and are suitable for virus removal. They are also suitable for small-scale membrane qualification studies such as bacteriophage or prion (TSE agent) clearance, as well as membrane flow rate, capacity, and protein transmission studies. Every filter is identified by a lot number and a unique serial number for traceability of manufacturing history and for the user's traceability system and manufactured under a quality management system certified to ISO 9001:2008.

#### High quality standards

Meet the current USP requirements under section <85> bacterial endotoxins test.

#### Materials

Filter fluid path components have met the specifications under section <88> biological reactivity tests, *in vivo*, listed in the current revision of the United States pharmacopeia (USP) for class VI plastics at 121°C.



Fig 1. Minidisc filter capsules.

### Features and benefits

Features	Benefits
Incorporates Ultipor VF DV20 membrane	Robust, high viral clearance
Identical membrane to larger virus cartridges	Reliable scalability
Disposable capsule with luer lock connections	Easy handling, ready to use
Individual capsules identified by lot and serial number	Easy identification of individual capsules with traceability of manufacturing history
100% manufacturing assembly tested	Consistent high quality
Membrane bacteriophage tested	Consistent high quality
Pre- and post-installation test	Consistent high quality at point of use
Low protein binding	High protein recovery
Robust membranes with high viral clearance and resistance to plugging	Flow decay kept low at high virus spike concentrations and more complex or concentrated feeds

## Technical data

### Materials of construction

Membrane	Hydrophilic modified polyvinylidene fluoride (PVDF)
Support disc	Polypropylene (non-woven)
O-ring	EPDM
Capsule inlet and outlet	Polycarbonate

### Removal rating

Ultipor DV20	
Small viruses	> 3 log TR <sup>(1,2)</sup>
Large viruses	> 6 log <sup>(3)</sup>

<sup>(1)</sup> Claims based on challenge with parovirus model bacteriophage (bacterialvirus) PP7

<sup>(2)</sup> > 4 LRV for PP7 bacteriophage per parenteral drug association (PDA) TR41 rating method for small virus-retentive filters. > 4 LRV typically with mammalian parvoviruses

<sup>(3)</sup> Claims based on challenge with retrovirus model bacteriophage (bacterialvirus) PR772

### Effective surface area

9.6 cm<sup>2</sup> (1.49 in.<sup>2</sup>)

### Operating parameters<sup>(4)</sup>

Maximum temperature	25°C
Maximum operating pressure	3.1 barg (45 psi)
Maximum differential pressure	3.1 barg (45 psi)

<sup>(4)</sup> Using compatible liquids. Maximum air/gas pressure for installation test 3.4 barg (50 psi)

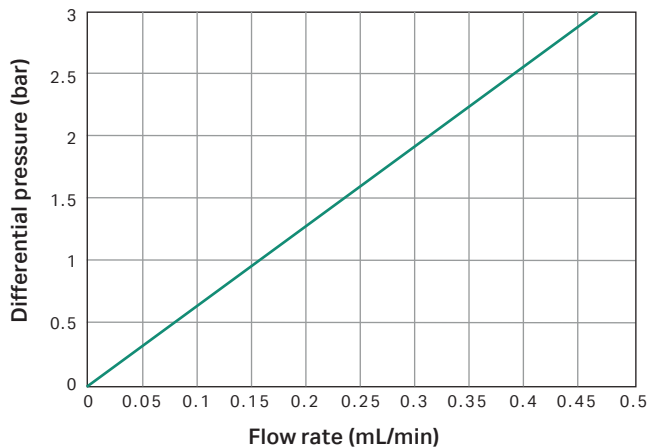


Fig 2. Typical flow vs differential pressure of DV20 membrane in clean water.

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## Equipment required for laboratory testing

Pressure vessels	Product code
Junior-style vessel	BLS7001G23J
Sealkleen™ vessel	ZLK702G23LHKH4
Novasip™ vessel	C3EP1

### Accessories – Novasip vessel

Adapter 1 in. tri clamp/male Stäubli connector plug (3 mm) R ¼ in.	GFX0290
Tri clamp + silicone gasket	SLK1TC23H4

### Accessories – Junior and Sealkleen vessel

Adapter 1 in. TC/male Stäubli connector plug (3 mm) R ¼ in.	GFX0290
Male Stäubli connector plug (3 mm) R ¼ in.	GFX0235

## Ordering information

Membrane	Packaging	Product code
Ultipor VF DV20	3 capsules per box	10MCFDV20

