Millipore®
Preparation, Separation,
Filtration & Testing Products

Fact Sheet

Responsible Waste Management

with EZ-Fit® Filtration Units

We are committed to sustainability. We recognize that every product we make has an environmental impact. This is why we investigate new and alternative waste management solutions for our products. That's what we have done for the EZ-Fit® Filtration Unit, a disposable filtration device for testing the bioburden of liquid samples including water, raw materials, in-process samples and final products.

The pre-assembled and sterilized device is designed, manufactured, and packaged to optimize microbial recovery and minimize cross-contamination, while setting new standards for ease of use. However, this poses huge constraints on the device's design and, in particular, the construction materials that are suitable.

Nevertheless, we take responsibility for our products across their entire life cycle. This fact sheet gives you suggestions to consider on how you can dispose of EZ-Fit® Filtration Units responsibly after use, taking into account different levels of access to appropriate waste management practices.

How do I dispose of the product's plastic parts responsibly?

The most important issues to consider are the materials the product is made of, which parts become bio-hazardous during use and the available waste streams for the components.

The materials of which the product components are made

Listed below are the different types of materials used and why they were selected for EZ-Fit® Filtration Units.

Polystyrene (PS)

- **High transparency** for convenient evaluation (culturing on liquid media)
- **Rigidity** to ensure easy removal from the funnel
- **Compatibility with SBC** for easier recycling

Mixed cellulose esters

Cellulose pad
(blue unit only)

Acrylonitrile Butadiene Styrene (ABS)

- **Strength and rigidity** for safe and easy funnel removal
- **Precise fit to ensure** watertight connection with funnel



Styrene Butadiene Copolymer (SBC)

- **High transparency** to check liquid level
- **Ultrahydrophobicity** to prevent liquid residues after filtration
- **Flexibility** to ensure watertightness and easy funnel removal

Low-Density Polyethylene (LDPE)
(blue unit in bulk version only)

- **Strength and rigidity** for safe and easy funnel removal
- **Precise fit to ensure watertight connection with funnel**

Materials: The Challenge

EZ-Fit® Filtration Unit is designed to make microbial testing via membrane filtration as easy as possible. The materials of which the EZ-Fit® device is made must not compromise result reliability and, at the same time, allow convenient and ergonomic handling by the laboratory technician.

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Classifying product waste and reducing bio-hazardous waste

Bio-hazardous waste require specific safety precautions and control procedures for handling, transportation and incineration, which makes it much more expensive to dispose than non-hazardous waste.

One way to reduce the amount of bio-hazardous waste is to identify the parts of the EZ-Fit® Filtration Unit that do not come into contact with bio-hazardous material, to separate these and designate them for less costly disposal methods.

The main considerations are:

- Waste regulations applicable at location
- The type of matrix tested
- The type of microorganism(s) tested for
- The culturing mode
- The result of the test
- The on-site management of waste flows

We strongly recommend that you discuss your separation practices with your facility's Environmental, Health and Safety (EHS) officer to ensure compliance with the waste regulations that apply where your lab or plant is located.

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Example: How we at Merck classify the product parts after use

The waste management process in our R&D and Quality Control laboratories in Molsheim, France.

The tested matrix is usually water to which we typically add known microorganisms that can be found in the natural environment.

Because the funnel's material minimizes liquid sample residue after filtration, we classify the funnels as non-hazardous waste and sort them for recycling.

We have reduced bio-hazardous plastic waste by more than 1 ton since implementing this sorting process for EZ-Fit® Filtration Units.

How we classify the other plastic parts depends on the cultivation method:

- Culturing on solid media: There is no contact between the lid and the tested liquid; the microorganisms are retained on the membrane, so we classify the lid and the base as non-hazardous waste.
- Culturing with liquid media directly in the unit: the base, the lid and the plug are in contact with the culture media and hence potentially also with microorganisms. For this reason, we classify the lid, base and plug as bio-hazardous waste.

Note: This process is not necessarily applicable in other regions.

Responsible ways to dispose of the product's components

Separating the non-hazardous from the hazardous product components is already a major step towards disposing of the used product responsibly.

The next step would be to consider moving from **disposal** to a preferable waste stream in the "Waste Hierarchy", e.g. **recovery** or even **recycling**.

Main Plastic Waste Management Streams

Stream	Waste end	Main characteristics	
Plastic Waste → Non-hazardous waste → Waste repurposing (Sorting)	**Material recycling**	The plastic parts are sorted by resin type. They are shredded and then often melted and extruded into the form of pellets, which are then used to manufacture other products.	RECYCLING
	Used as a fuel alternative in cement industry	The plastic waste is mixed with other selected waste materials to create a fuel alternative that reduces the use of coal in cement plant.	RECOVERY
	Waste to energy (incineration or other technology)	The heat of the incineration process can be used to generate electric energy or for heating purposes.	RECOVERY
Plastic Waste → Non-hazardous waste → Waste disposal (No sorting)	Incineration	Which of these methods is chosen often depends on the infrastructure available nearby. Plastic waste is mixed with other non-hazardous waste.	DISPOSAL
	Landfilling		DISPOSAL
Plastic Waste → Bio-hazardous waste	Pre-treatment for conversion into non-hazardous industrial waste	The bio-hazardous waste is ground and disinfected.	DISPOSAL
	Incineration	Specific safety precautions and control procedures for handling, transportation and incineration.	DISPOSAL

More preferable

Less preferable

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What to consider when looking for ways to dispose of the product parts more responsibly should include:

Your region: The available infrastructure and the disposal costs may vary considerably from one location to the next.

Existing waste streams: If a plastic recycling stream already exists on your site, implementation should be easier.

Total volume of plastic waste: Substantial volumes make a plastic recycling stream more worthwhile. Include other plastic products that are used in the lab or in the plant in your assessment.

We can support you in assessing your waste management options.
Contact us: responsibility@emdmillipore.com

Commitment to product sustainability

The products we create help our customers improve people's lives every day; we also recognize, however, that every product we make has an environmental impact over its whole life cycle. That's why we are committed to continually improving the sustainability performance of our products. We aim to develop future-forward products and solutions that meet performance needs, reduce life-cycle impacts and help solve global sustainability challenges.

Design for Sustainability

Through this program, the design teams incorporate sustainability principles into the development process of our products, focusing on ease of use for the customer and reducing the consumption of the materials used in their manufacture. To learn more about how we are implementing this process, read about Design for Sustainability with our EZ-Fit® Manifold.

Recycling & End of Life

We have consistently worked together with our customers and recycling companies to find sustainable alternatives to the disposal of products. Thanks to these collaborations, partnerships and pilot programs, we are increasingly able to design responsible recycling solutions.

We are continuing to investigate new and alternative disposal solutions for these and additional products. Please feel free to contact us regarding your questions or suggestions for ways in which we can improve our services. Our e-mail address: responsibility@emdmillipore.com

Ordering Information

Description	Qty / pack	Packaging / Format	Cat. No.
PINK base — no pad			
EZ-Fit® Filtration Unit, white plain PVDF membrane, 0.45 µm, 100 mL	48	Single	**EFHVW10IS**
EZ-Fit® Filtration Unit, white gridded MCE membrane, 0.45 µm, 100 mL	48	Multipack of 4 units	**EFHAW10MS**
EZ-Fit® Filtration Unit, white gridded MCE membrane, 0.45 µm, 250 mL	48	Multipack of 4 units	**EFHAW25BS**
EZ-Fit® Filtration Unit, black gridded MCE membrane, 0.45 µm, 100 mL	48	Multipack of 4 units	**EFHAB10MS**
EZ-Fit® Filtration Unit, black gridded MCE membrane, 0.45 µm, 250 mL	48	Multipack of 4 units	**EFHAB25BS**
EZ-Fit® Filtration Unit, white gridded MCE membrane, 0.22 µm, 100 mL	48	Multipack of 4 units	**EFGSW10MS**
EZ-Fit® Filtration Unit, white gridded MCE membrane, 0.22 µm, 100 mL	48	Single	**EFGSW10IS**
EZ-Fit® Filtration Unit, white gridded MCE membrane, 0.8 µm, 100 mL	48	Bulk with protective bag	**EFAAW10BS**
EZ-Fit® Filtration Unit, white gridded MCE membrane, 0.8 µm, 250 mL	48	Bulk with protective bag	**EFAAW25BS**
EZ-Fit® Filtration Unit, black gridded MCE membrane, 0.8 µm, 100 mL	48	Bulk with protective bag	**EFAAB10BS**
EZ-Fit® Filtration Unit, black gridded MCE membrane, 0.8 µm, 250 mL	48	Bulk with protective bag	**EFAAB25BS**
BLUE base — with pad			
EZ-Fit® Filtration Unit, white gridded MCE membrane, 0.45 µm, 100 mL	48	Bulk	**EFHAW100B**
EZ-Fit® Filtration Unit, white gridded MCE membrane, 0.45 µm, 100 mL	48	Single	**EFHAW100I**
EZ-Fit® Filtration Unit, white gridded MCE membrane, 0.45 µm, 250 mL	48	Bulk	**EFHAW250B**
EZ-Fit® Filtration Unit, white gridded MCE membrane, 0.45 µm, 250 mL	48	Single	**EFHAW250I**
EZ-Fit® Filtration Unit, black gridded MCE membrane, 0.45 µm, 100 mL	48	Bulk	**EFHAB100B**
EZ-Fit® Filtration Unit, black gridded MCE membrane, 0.45 µm, 100 mL	48	Single	**EFHAB100I**
EZ-Fit® Filtration Unit, black gridded MCE membrane, 0.45 µm, 250 mL	48	Bulk	**EFHAB250B**
EZ-Fit® Filtration Unit, black gridded MCE membrane, 0.45 µm, 250 mL	48	Single	**EFHAB250I**

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Find contact information for your country at: **www.MerckMillipore.com/offices**

For Technical Service, please visit: **www.MerckMillipore.com/techservice**

www.MerckMillipore.com/biomonitoring

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Lit No. PF2860ENEU
2018 - 12007
05/2018