Microbox
BY Sac O_2

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We make the filter
that makes *all* the difference.

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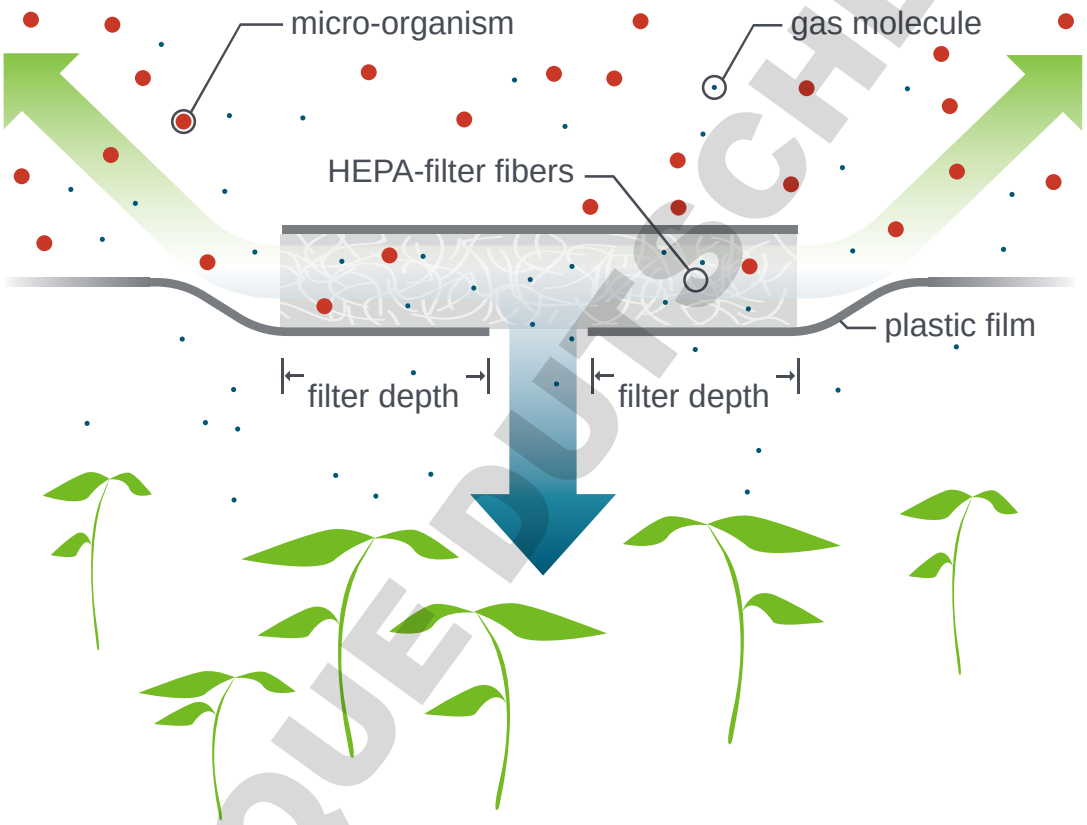
Microbox micropropagation containers feature a patented depth-filtration system you won't find on any other micropropagation vessel—anywhere.



This revolutionary depth-filtration system allows for air flow, but blocks contamination, providing the best available protection against pests and diseases.

About the Microbox filter

Your choice of filter will depend on a number of parameters, such as plant variety, incubation time, atmospheric and lighting conditions in the incubation chamber, number of plants per container, growth phase plants, and volume and com-position of growing medium in the culture vessels.

As a rule, #10 (white) and #30 (red) filters are designed for plants with a long incubation time, whereas the #40 (green) filters are developed for plants in need of a high gas exchange and/or plants that spend less time in the Microbox. Comparative in-situ tests are necessary to decide which filter type is appropriate.

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Advantages of the Microbox

Depth filtration

Microbox filters are based on a depth-filtration principle as opposed to surface filters. Each filter uses randomly arranged fibers (HEPA principle) to effectively trap fungi spores, mites, trips and other contaminants. Depth filters limit dehydration. The gas exchange is controlled by the length of the filter plugs, longer filter plugs mean less gass exchange thus less dehydration.

When using hermetically closing containers without filters, gas exchange of CO_2 and O_2 is poor, concentrations of gasses like ethylene are far from optimal and hyperhydricity can occur. The gas exchange of the Microbox was found to be similar to the gas exchange of 'air leaking' containers without filtration system, but the filtered Microbox has the bonus of added contamination protection.

Shorter weaning time

Yet another major advantage: thanks to adequate gas exchange during their stay in the vessels, the plantlets have been well prepared for their autotrophic life and therefor require less weaning.

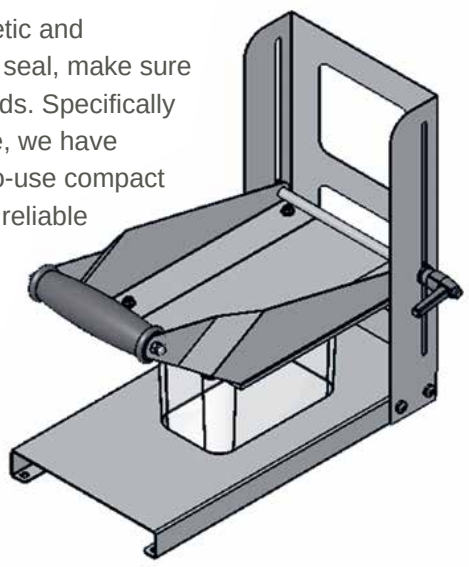
Eco-responsible - Reusable - Sensible

Our untreated (non-gamma irradiated) **Microboxes are autoclavable up to 7 times.** (The single use gamma-sterilized containers can not be autoclaved and can therefor only be used once.) Each Microbox is 100% recyclable. Lid and container are both ecologically and economically smart.

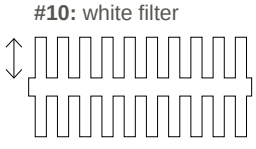
Clearly superior

The hermetically-sealing lid with filter, and the box itself, are made of clear, resilient polypropylene. You have an accurate view of your work for greater quality control.

To guarantee a hermetic and contaminant-resistant seal, make sure to securely snap the lids. Specifically for this perfect closure, we have developed our easy-to-use compact lid closer for the most reliable seal of all.

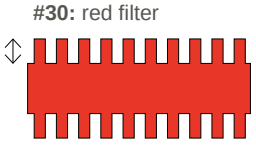


The gas exchange is controlled by the length (↕) of the filter plugs



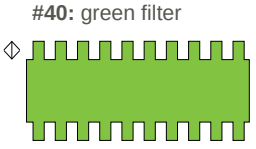
#10: white filter

Less gas exchange



#30: red filter

More gas exchange



#40: green filter

Most gas exchange

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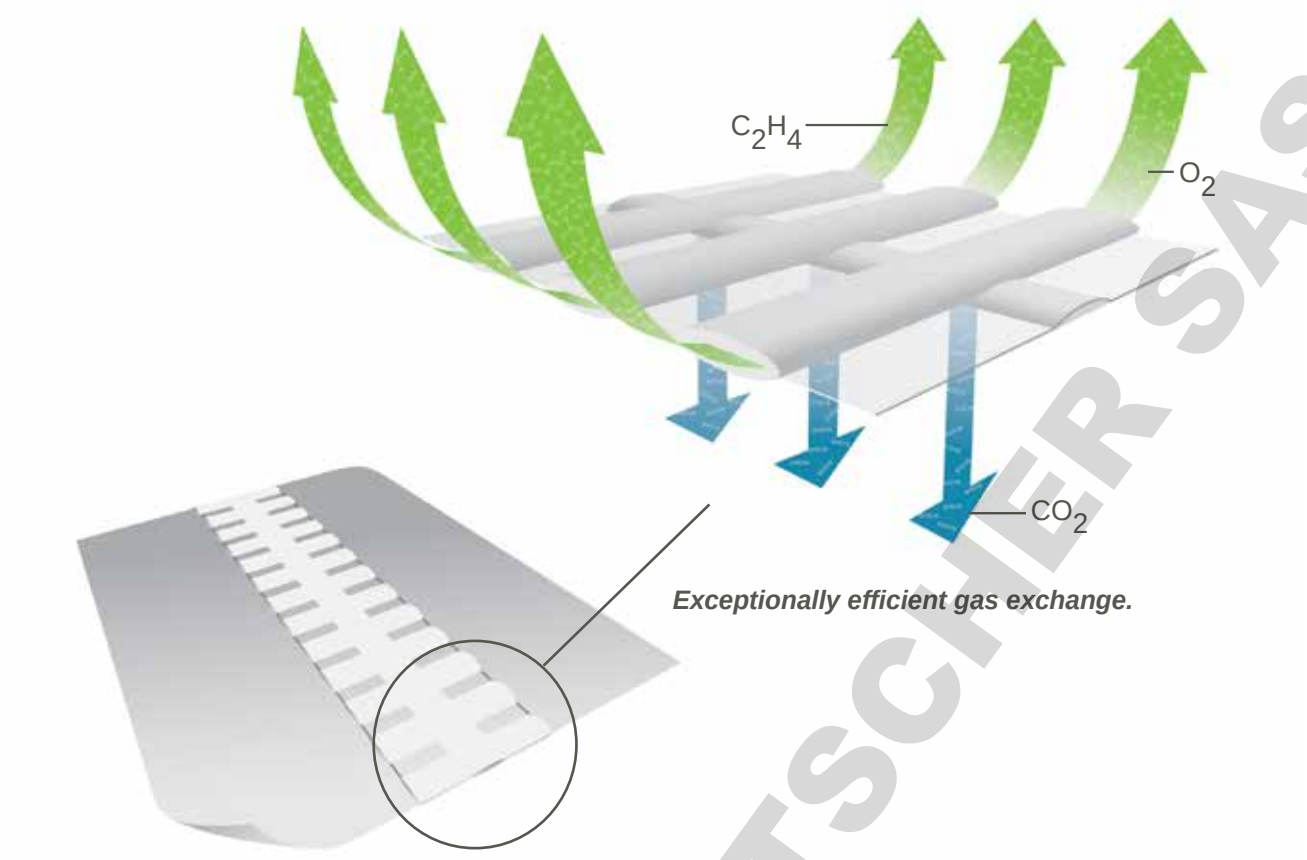

Exceptionally efficient gas exchange.

We tested the gas exchange capacity of the filters

Gas exchange capacity depends on the Kv value of the corresponding filter types.

Kv is the volumetric gas exchange coefficient by means of diffusion throughout the filters.
It represents the number of gas replacements in the vessels per time unit (unit: GE/day).
The Kv is determined by the type of filter, filter length and gas volume in the containers.

The measurements were obtained with empty vessels in standard conditions, hence these values are not indicative of the real behavior of a plantlet under specific growing conditions.

Ensure optimal functioning:

- keep the filter zones free of labels or any other objects
- avoid wetting filters; air dry filters when wet
- before re-using the lids, clean them with damp cloth (do not soak) and let dry completely
- choose the suitable filter type #10 (white), #30 (red) or #40 (green) with the proper ventilation ratio to achieve an ideal gas exchange with minimal dehydration

All lids are available with these types of filter (one type per carton.)

Code Filters	Round Microboxes (O118/80)	Oval Microboxes (OV80/80)
#10: white filter	**9,87 GE / day**	**7,44 GE / day**
#30: red filter	**15,58 GE / day**	**10,83 GE / day**
#40: green filter	**81,35 GE / day**	**62,87 GE / day**

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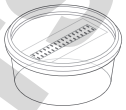
List of Microbox models

Transparent polypropylene containers with filtered covers

Round Models

Model: O95/40+OD95	
	Cover: 95 mm diameter Base: 80 mm diameter Height: 40 mm Volume: 210 ml

Model: O118/50+OD118	
	Cover: 118 mm diameter Base: 97 mm diameter Height: 50 mm Volume: 365 ml

Model: O95/60+OD95	
	Cover: 95 mm diameter Base: 80 mm diameter Height: 60 mm Volume: 280 ml

Model: O118/80+OD118	
	Cover: 118 mm diameter Base: 97 mm diameter Height: 80 mm Volume: 565 ml

Model:O95/114+OD95	
	Cover: 95 mm diameter Base: 80 mm diameter Height: 114 mm Volume: 520 ml

Model: O118/120+OD118	
	Cover: 118 mm diameter Base: 97 mm diameter Height: 120 mm Volume: 870 ml

Please be sure to visit **www.saco2.com** for more information about the Microbox and the available ordering options.

Mention which options you prefer when ordering.
For large order discounts and custom orders please contact **info@saco2.com**

Model: O119/140+OD119/140	
	Cover: 119 mm diameter Base: 90 mm diameter Height: 140 mm Volume: 1000 ml

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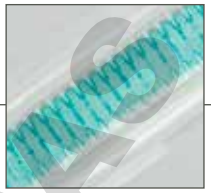


Microbox options:

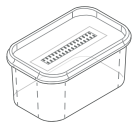
All the microboxes are available either:

- gamma-sterile = not autoclavable & not re-usable **(G)**
  pakked in plastic sleeves
- not gamma-sterile = autoclavable & re-usable **(NG/NP)**
  not **p**akked in plastic sleeves (default packaging)

and with one of the following filters:

- **#10:** white filter
- **#30:** red filter
- **#40:** green filter

Rectangular Models

Model: OV80+OVD80	
	Cover: 150 × 90 mm Base: 125 × 65 mm Height: 80 mm Volume: 540 ml

Model: TP750+TPD750 *	
	Cover: 182 × 120 mm Base: 170 × 110 mm Height: 45 mm Volume: 750 ml

Model: TP1200+TPD1200 *	
	Cover: 180 × 120 mm Base: 170 × 110 mm Height: 70 mm Volume: 1200 ml

Model:TP1600+TPD1200	
	Cover: 182 × 120 mm Base: 172 × 110 mm Height: 92 mm Volume: 1600 ml

Square Models

Model: TP2000+TPD2000 *	
	Cover: 195 × 195 mm Base: 185 × 185 mm Height: 78 mm Volume: 2000 ml

Model: TP3000+TPD2000 *	
	Cover: 195 × 195 mm Base: 185 × 185 mm Height: 112 mm Volume: 3000 ml

Model: TP5000+TPD2000 *	
	Cover: 195 × 195 mm Base: 185 × 185 mm Height: 191 mm Volume: 5000 ml

* These models are available with filter code: #30 (white filter with characteristics of red filter), and #40 (green).

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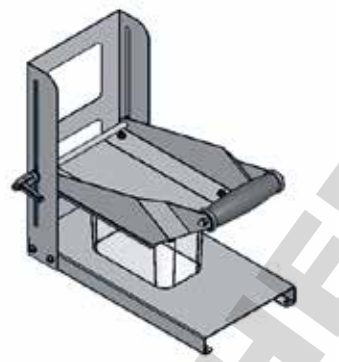
Compact Lid Closer

This compact lid closer facilitates closing our filtered PP Microboxes, it is not an essential tool.



Width: 300 mm
Length: 600 mm
Height: 300 mm

Packaging: 1 envelope
dimensions: 37×29×10 cm
weight: 2 kg

Autoclaving the non gamma-irradiated Microbox

Preferred procedure:

Autoclave containers and medium separately:

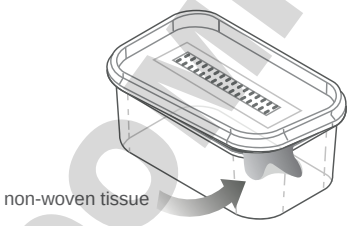
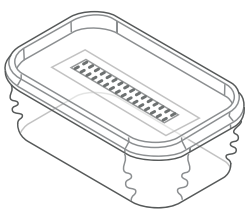
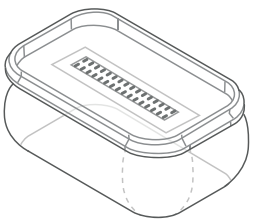
Polypropylene containers hold their shape and can be re-used a number of times.

1. Pack stacked containers and covers separately in an autoclavable bag (optional: when stacking the containers, put a piece of tissue between the boxes for easy separation after autoclavation)
2. Autoclave containers and covers
3. Unwrap containers and covers in sterile conditions
4. Fill containers with warm sterilized medium under LAF (Laminar Air Flow)
5. Carefully snap cover around entire rim to securely close, be careful: containers are flexible and soft when warm
6. Store containers with medium in a clean area

Alternative procedure:

Autoclave containers filled with medium

1. Fill the containers with medium
2. Place a piece of non-woven tissue on one edge of each container before loosely closing lids, allowing for vapor to enter the Microbox during autoclaving
3. If condensation is a problem, cover lids loosely with aluminum foil to prevent filters from getting wet
4. Put containers in autoclave
5. Slowly build up pressure to prevent lids from closing
6. After sterilization, slowly reduce the pressure in the autoclave and remove container
7. Remove non-woven tissue and carefully snap cover around entire rim to securely close
8. Allow filter to dry completely
9. Store containers with medium in a clean area

Corner of lid left open: no deformation	**Hermetically-sealed lid: containers distort with pressure changes**	
 non-woven tissue		
gas has free passage	quick pressure increase	quick pressure reduction

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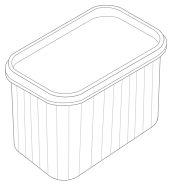
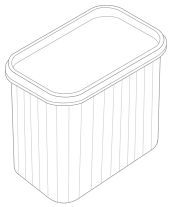
Sterile polystyrene containers & covers *wihout* filters

Rectangular Containers

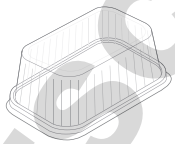
Model: RA40	
	Length: 145 mm Width: 100 mm Height: 40 mm

Model: RA60	
	Length: 145 mm Width: 100 mm Height: 60 mm

Model: RA85	
	Length: 145 mm Width: 100 mm Height: 85 mm

Rectangular Lids

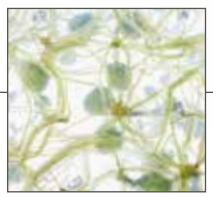
Model: RDA145	
	Length: 145 mm Width: 100 mm Height: 5 mm

Model: RDA60	
	Length: 145 mm Width: 100 mm Height: 60 mm

These containers are gamma irradiated, the are **not autoclavable**, not re-usable, not hermetically closing and the lids do not feature the filter.

For more information on the RA container please visit **www.saco2.com**

Model RA40



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Multiple Microbox choices for multiple applications.

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