Media That Fills You with Confidence

Linden Grain Medium for Media Fill Simulations of Beverage Bottling and Ice-Crusher Installations

When producing low-acid aseptic beverages you want to be sure that your filling line is not contaminated with spoilage bacteria, yeasts or molds — not only because millions of product units may be lost. Contamination can result in considerable reprocessing, disposal and product-recall costs, as well as damage to brand reputation and consumer confidence.

Merck Millipore's granulated ready-mixed Linden Grain Medium, a high-quality alternative to powdered media, was successfully developed in cooperation with Coca-Cola HBC AG, Zug, Switzerland for media fill simulations.

It Makes Life Easier ...

- Ready-mixed and easily soluble
- Granules reduce on-site contamination with media dust
- Available in 5 kg and cost-saving 25 kg sizes

... is Safe and Ensures Results You Can Trust

- Granulated to minimize toxic and allergenic dust
- Meets highest performance standards in production and QC as described in ISO 11133

Merck Millipore is a division of MERCK

A Class Above Traditional Powdered Media

With Merck Millipore's Linden Grain Medium, which is typically prepared in large volumes of more than 5,000 liters for a single media fill test, there is no need to source, buy, mix and quality control individual raw materials.

The Unique Granulated Format of Linden Grain Medium Ensures:

- Excellent solubility and free-flowing properties
- No component separation and clumping even under warm or humid conditions
- Homogenous distribution of non-animal based ingredients
- Less dust formation: reduces cleaning efforts and limits the spread of media components which may be hazardous or lead to allergic reactions if inhaled.

Consistent High Quality You Can Rely On

Merck Millipore is the market leader in providing the strictly regulated pharmaceutical industry with media fills based on dehydrated culture media. We are applying the expertise we have gained to manufacture media fills for the beverage industry, using only carefully selected raw materials. Our quality-control procedures include testing the granulated Linden Grain Medium with typical beverage spoilage strains. These results indicate not only excellent performance (see Table 1), but also a level of batch-to-batch consistency that is difficult to achieve when producing Linden Grain Medium yourself.

Coca-Cola HBC AG, one of the world's largest cola drinks bottlers, with operations in 28 countries, successfully applies Linden Grain Medium in its aseptic operations.

Suitable for Ice-Crusher Testing

An internal study we performed using frozen Linden Grain Medium shows that this culture medium possesses properties that make it suitable for microbial testing of ice-crusher installations:

- Stable after freezing and thawing (color, pH)
- Performance after freezing comparable to freshly prepared medium

Comprehensive Solutions from Merck Millipore

Typically, a media fill simulation is accompanied by viable and non-viable air monitoring and surface monitoring of the production environment. Merck Millipore offers a broad range of microbial air sampling and particle counting instruments as well as culture media, contact plates and dip slides for traditional monitoring. For rapid hygiene monitoring, we provide efficient ATP detection systems.

Test strains	Evaluation after	Growth
Geosmithia putterillii ATCC 10487	3 – 5 days	good/moderate
Cladosporium cladosporoides ATCC 38494	3 – 5 days	good/moderate
Zygosaccharomyces fermentati ATCC 34891	3 – 5 days	good/moderate
Bacillus subtilis ATCC 6051	1 day	none

Table 1
Typical spoilage micro-organisms of low-acid beverages: Growth in Merck Millipore's Linden Grain Medium (*B.subtilis* used as negative growth control)

Ordering Information

Product	Qty/Pk	Catalogue No.
Linden Grain Medium (Base)	5 kg	1.00553.5000
Linden Grain Medium (Base)	25 kg	1.00553.9025
A selection of related products typically needed to complement media fill applications in aseptic beverage production:		
Viable Air Monitoring		
MAS-100 Eco® Air Sampler	1	1.09227.0001
Plate Count Agar Plate	20	1.46269.0020
Malt Extract Agar Plate	20	1.46151.0020
Sabouraud Dextrose Agar Plate	20	1.46236.0020
Non-viable Air Monitoring		
APC ErgoTouch Pro 2 – Airborne Particle Counter	1	1.44302.0001
Surface Monitoring		
DG 18 Agar + Chloramphenicol Contact Plate	20	1.46266.0020
Sabouraud Dextrose agar + Chloramphenicol Contact Plate	20	1.46549.0020
Malt Extract Agar Contact Plate	20	1.46191.0020
Plate Count Agar Contact Plate	20	1.46154.0020
TSA (Tryptic Soy agar) Contact Plate	20	1.46240.0020
Further products for surface monitoring such as contact slides and dips and swabs are also available from Merck Millipore:		
Rapid Hygiene Monitoring		
HY-LiTE® Luminometer (ATP testing)	1	1.30100.0301
HY-LiTE® 2 Refill Pack100 HY-LiTE® Pens and 100 swabs for surface testing	1	1.30101.0021

For more information on our comprehensive product range for environmental monitoring in the beverages industry please contact your local sales representative.

We provide information and advice to our customers on application technologies and regulatory matters to the best of our knowledge and ability, but without obligation or liability. Existing laws and regulations are to be observed in all cases by our customers. This also applies in respect to any rights of third parties. Our information and advice do not relieve our customers of their own responsibility for checking the suitability of our products for the envisaged purpose.

For more information

www.merckmillipore.com/biomonitoring

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

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

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