

2010

Geno/Grinder®

Mixing and
Blending



Grinding and
Pulverizing



Tissue
Homogenization
Cell Lysis



UNIQUE VERTICAL SHAKING ::



HANDLES MULTIPLE SAMPLES ::

from 96-Well Titer Plates up to 50mL Centrifuge Tubes



LARGE CLAMP ASSEMBLY ::

for Increased Throughput



KRYO-TECH® ACCESSORIES ::

for DNA/RNA Extraction



SPEX SamplePrep®



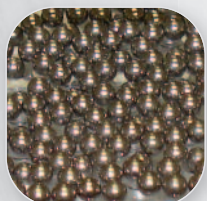
- Flexible format allows 2mL vials to be clamped in 48-well or 96-well format



- Prepares tissue for extraction of DNA/RNA, proteins, and volatile organics



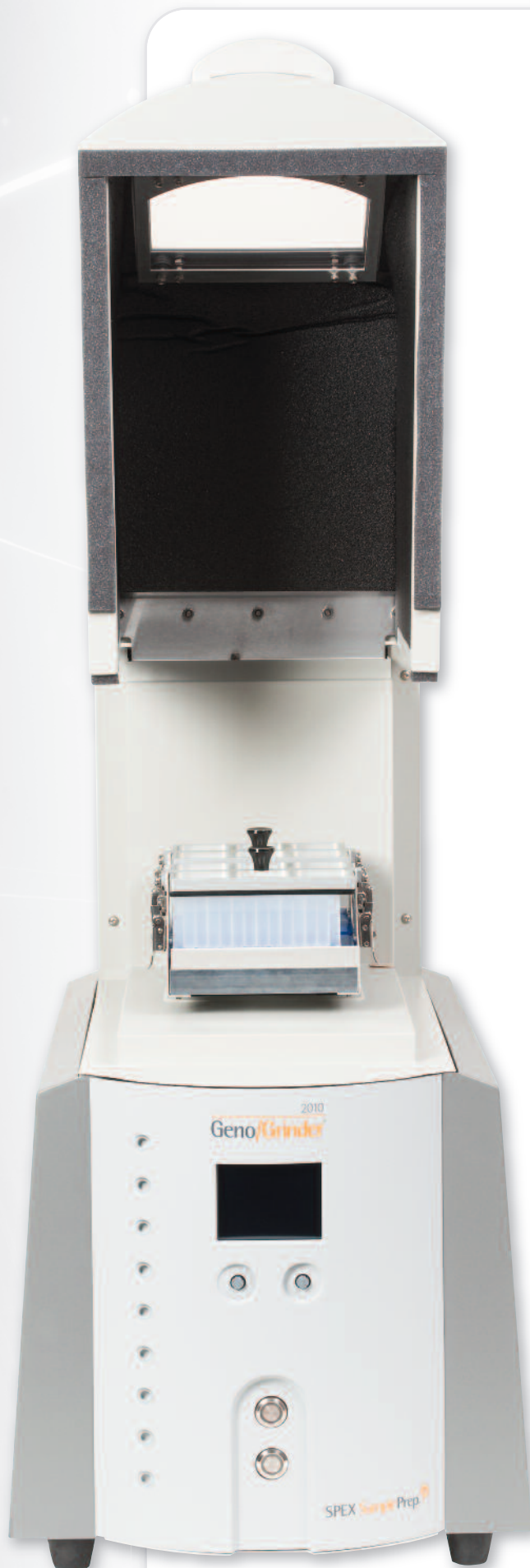
- Higher throughput allows shaking up to 16 x 50mL samples simultaneously



- Pulverizes samples with or without buffer, using a variety of grinding media



- Kryo-Tech® accessories available for temperature-sensitive samples



Patent Pending

2010

Geno/Grinder®

THE ULTIMATE PLANT AND ANIMAL TISSUE PULVERIZER AND CELL LYSER

Completely remodeled product based on the well-established 2000 **Geno/Grinder®**.

- Unique new design with vigorous up-and-down motion
- Capable of processing up to four deep-well plates and sample vials from 0.6 to 50mL
- Able to process most plant matter as well as animal tissue samples
- LCD screen displays both the full timer setting along with the time remaining in the grinding cycle
- Safety interlocks and pneumatic cylinder stabilize the lid for safe operation
- No variation in shaking process makes it ideal for QuEChERS method

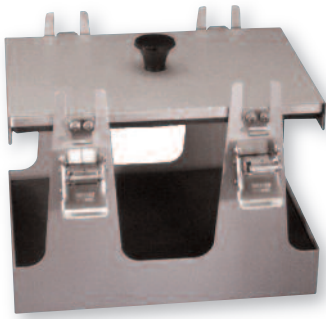
COMPACT AND LIGHT WITHOUT COMPROMISING POWER

- Lighter, increasing portability
- Smaller footprint maximizes available bench space
- Powerful, more efficient motor
- Typical grinding cycle completed in under 2 minutes
- Simple controls allow precise grinding speeds from 500 to 1750 strokes per minute
- Horizontal clamp loading prevents sample spillage, eliminating cross-contamination

- ✓ INCREASED THROUGHPUT
- ✓ INCREASED YIELDS
- ✓ REPRODUCIBILITY

For more information please contact 732-623-0465 or visit www.spexsampleprep.com/genogrinder

ACCESSORIES



LARGE CLAMP ASSEMBLY

Designed to hold:

- Four deep-well titer plates
- 16 standard 50mL centrifuge tubes (with 2196-16-PE holder)
- 24 x 15mL centrifuge tubes (with 2197 holder)
- Many other formats available

VIALS, VIAL SETS, AND CENTRIFUGE TUBES

We offer a variety of alternatives to titer plates

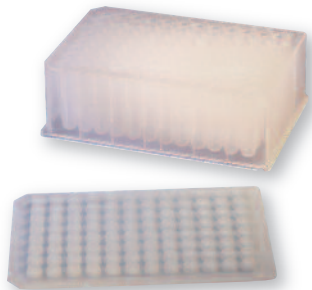
- Vial sets come pre-cleaned
- Grinding balls included
- Supplied in sturdy cases
- Same size footprint as deep-well titer plates
- Vials can be filled and sealed individually
- Hold samples larger than those traditionally placed in titer plates



TITER PLATES AND CAP-MATS

Tested extensively

- Used for many applications:
 - Sample libraries
 - Large sample dilutions
 - Cell suspensions
 - RNA extraction (with the **2600 Cryo-Station**)
- Resists perforation, even at high clamp speeds
- Cap-Mats seal titer plate cells, preventing spills and well-to-well contamination
- Available in 24, 48, and 96-well formats



GRINDING MEDIA

Stainless Steel, Silica, Zirconia, and Ceramic

- Stainless steel grinding balls in sizes from 5/32" to 7/16"
- Grinding beads available in three grades:
 - Molecular Biology Grade are treated to inactivate contaminating enzymes
 - Low Binding to reduce non-specific binding of nucleic acids and proteins and for lysing dilute samples of cells
 - Acid Washed are treated to remove fine particles and contaminants
- New ceramic grinding cylinders aid in the mixing and homogenization of samples for the QuEChERS method



KRYO-TECH® GRINDING ACCESSORIES



SPEX SamplePrep now offers a solution for preserving pesticides, RNA, or proteins during grinding in the **Geno/Grinder®** with our **Kryo-Tech®** Accessories! Our new Cryo-Blocks are designed to be chilled in the **Cryo-Station**. Vials or titer plates containing temperature-sensitive samples are placed in the Cryo-Blocks and then put directly into the **Geno/Grinder®**. Now tissue samples can be maintained at subzero temperatures during grinding to increase yields.

- Especially useful for preserving RNA and proteins
- Holds and chills titer plates and vials
- Maintains tissue samples at subzero temperatures during grinding
- Ensures the best possible way to stabilize yields for heat-sensitive extraction methods

2010

Geno/Grinder®

ABSTRACTS

1 – Pesticide residue extraction from fruits using QuEChERS method

Using the QuEChERS process, studies were done with samples prepared using the standard AOAC method 2007.01. Fruit samples were spiked with 5ppm of 13 common pesticides and then homogenized in the Geno/Grinder® using SPEX SamplePrep Ceramic Grinding Cylinders. These samples were compared to those shaken by hand. For all the pesticides detected, the Geno/Grinder® consistently produced higher recovery rates by an average of over 18%.

2 – Improved cell lysis and DNA yields from plant tissue

A study was performed to discover what Geno/Grinder® processing variables significantly increased or decreased the yields of genomic DNA in fresh basil. Variables investigated included homogenization time and speed, while buffers, grinding media, and tubes were constant. In this experiment, the Geno/Grinder® returned most results higher than 6,557bp meaning that significant shearing or other degradation did not occur even with longer processing times.

3 – High-throughput fatty acid extraction from animal tissue samples

The research in biotechnology/gene technology often demands the handling of a considerable number of samples. Sample preparation is often the bottleneck in the process of efficient analysis work. Traditional methods based on mechanically disrupting cells using ball or swing mills with an adapter for micro titer plates are no longer suitable for high sample throughput. The use of 96-well micro titer plates and deep well plates in the Geno/Grinder® has been shown to give reproducible homogenization yields for all samples and is well suited for cell disruption of muscle and internal organs such as liver.

To see more detailed information, ask your sales representative for a copy of the Geno/Grinder® application note.

SPEX SamplePrep.®

Your Science is Our Passion.®

Customer Service

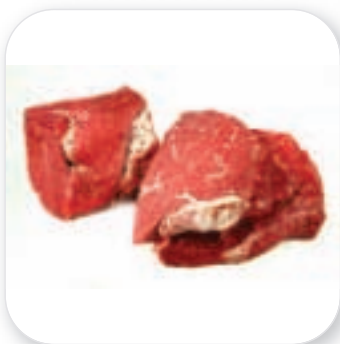
Sampleprep@spexcorp.com

15 Liberty Street • Metuchen, NJ 08840

732-623-0465 • Fax: 732-906-2492

www.spexcorp.com

BEFORE & AFTER SAMPLES



APPLICATION NOTES

- ⋮ : **SP017** – Effect of Lysis Time and Other Variables on DNA Extraction from Fresh Basil Lysed in 2mL Tubes With the Geno/Grinder®
- ⋮ : **SP001** – Mechanical Disruption for High-Throughput Fatty Acid Extraction from Animal Tissue Samples
- ⋮ : **SP022** – The Benefits of the Geno/Grinder® High-Throughput Tissue Homogenizer to Increase Sample Throughput for Pesticide Residue Analysis by LC/MS/MS
- ⋮ : **SP018** – High-Throughput Disruption of Yeast in a 96-Well Format

For more application notes on the Geno/Grinder® please visit:
www.spexsampleprep.com/appnotes

THE COOL IDEAS KEEP COMING...

DNA/RNA extractions from normally ungrindable samples including polymers, tough plant and animal tissue, bone, and hair.

- ∴ The Freezer/Mill® embrittles samples by:
 - ∴ Immersing the grinding vial in liquid nitrogen; and
 - ∴ Pulverizing the sample with a magnetically driven impactor
- ∴ Low temperatures retained throughout
 - ∴ Room temperature grinding can volatilize or degrade the structure and composition of samples
 - ∴ Freezer/Mill® preserves these samples
- ∴ Capable of handling multiple samples simultaneously
- ∴ Available in two sizes:
 - ∴ Small (6770) for samples from 0.1 – 5g
 - ∴ Large (6870) for samples from 0.1 – 100g



Your Science is Our Passion.™



SPEX SamplePrep®

SPEX SamplePrep
15 Liberty Steet
Metuchen, NJ 08840-9978
Tel: 732.623.0465
Fax: 732.906.2492
E-mail: sampleprep@spexcsp.com
www.spexsampleprep.com

European Division
SPEX CertiPrep Ltd
2 Dalston Gardens
Stanmore, HA7 1BQ, UK
Tel: +44 (0) 20 8204 6656
Fax: +44 (0) 20 8204 6654
E-mail: sales@spexcertiprep.co.uk
www.spexcsp.com

DEMO PROGRAM: TRY IT BEFORE YOU BUY IT

SPEX SamplePrep gives you the opportunity to try out our sample preparation equipment in your laboratory for one week.

Best of all, our Demo Program is COMPLIMENTARY!!!

We only require that you pay shipping and handling to and from your facility. Once you try our quality products you'll ask yourself how you ever lived without them.

For more information please contact 732-623-0465 or visit www.spexsampleprep.com/genogrinder