

The ISO-GRID System

The ISO-GRID System is based on the principles of hydrophobic grid membrane filtration. Target organisms are detected, or enumerated, through the use of a unique membrane filter grid containing 1,600 squares.

Diluted samples are filtered through a 5 µm stainless steel prefilter to eliminate food particles that could interfere with subsequent microbial analysis.

Samples are then filtered through hydrophobic membranes. The membranes are subsequently placed on agar plates specifically chosen to detect target microorganisms.

After incubation, target organisms are detected on the membranes, and enumerated by counting the positive squares.

The membranes do not take up the agars' dyes, providing good contrast and easy organism identification and enumeration. The grid's large number of squares supplies a broad counting range, eliminating the need to analyze several dilutions.

Advantages of the ISO-GRID System

- **APPROVALS.** ISO-GRID methods for *E. coli* O157:H7, *Salmonella*, yeast and mold, coliform / *E. coli*, and total aerobic plate count are AOAC Official Methods, and recognized by the FDA. Other ISO-GRID methods hold numerous approvals.
- **SPEED.** ISO-GRID methods are fast. ISO-GRID yeast and mold detection takes just 2 days, start to finish. The combined coliform / *E. coli* test is complete in just 24 hours. A *Salmonella* negative screen is complete in as little as 24 hours.
- **VERSATILITY.** All ISO-GRID analyses use the same basic procedure, simplifying work flow and training.
- **COUNTING RANGE.** A single ISO-GRID membrane filter has a counting range spanning greater than three 10-fold dilutions. Just **one filter** eliminates the need for both multiple sample dilutions and duplicate plating.
- **REPRODUCIBILITY.** AOAC-sponsored studies have repeatedly demonstrated that ISO-GRID methods produce consistent and highly reproducible results. Published references are available.

Solving another piece of the puzzle

ISO-GRID™

Membrane Filtration System



Available ISO-GRID Methods

- Yeast and mold count (AOAC No. 995.21)
- Total bacterial count (AOAC No. 986.32)
- Total coliform / *E. coli* count (AOAC No. 990.11)
- *Salmonella* detection (AOAC No. 991.12)
- *E. coli* O157:H7 count (AOAC No. 997.11)
- *Listeria* spp. and *L. monocytogenes* count
- *Staphylococcus aureus* count
- Fecal *Streptococcus* count
- Gram negative bacterial count
- *Vibrio parahaemolyticus* count
- *Yersinia enterocolitica* detection
- *Pseudomonas aeruginosa* count
- Disinfectant efficacy test

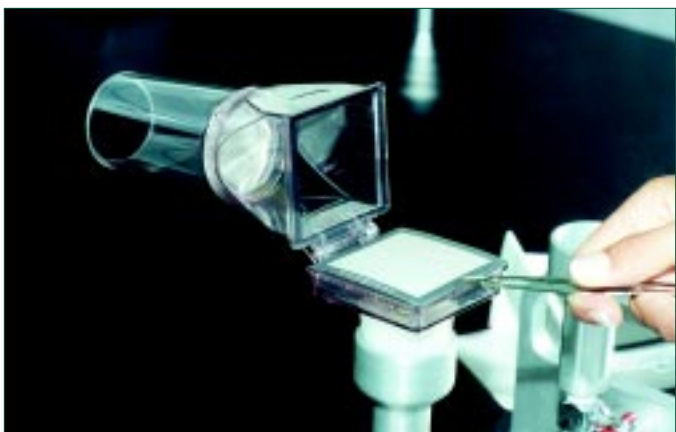
Contact a Neogen sales representative at 800/234-5333 or 517/372-9200 for complete details on ISO-GRID applications

ISO-GRID Membrane Filtration Procedure

Please read kit instructions



- 1. SET-UP.** Attach the short arm of the Y tube without the shut-off valve to the vacuum manifold's base (or vacuum flask, if used). The tube's arm with the shut-off valve is left free until step 7.



- 2. PLACE MEMBRANE FILTER.** With the vacuum source on, and manifold vacuum and Y tube valves open, place a membrane filter on the base of the filtration unit.

- 3. CLOSE FILTRATION UNIT.** Swivel the hinged filtration unit to the closed position.



- 4. CLAMP.** Slide the clamp onto the filtration unit and raise the clamp's arm to lock.



- 5. ADD DILUENT.** Add sterile diluent. Most of it will remain on the stainless steel prefilter.



- 6. ADD SAMPLE.** Pipette a known quantity of sample into the filtration unit, followed by additional diluent to ensure thorough mixing.



ns completely before performing the test

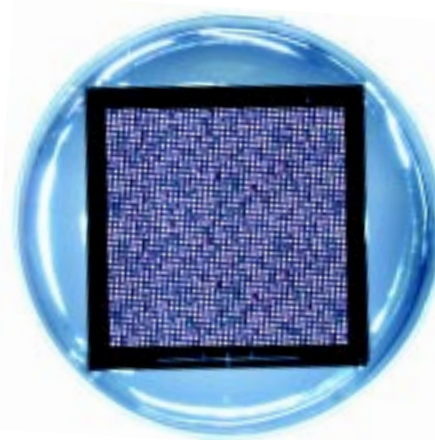
- 7. PRE-FILTER.** Pull the diluent and sample through the prefilter by briefly applying a vacuum at the prefilter port.



- 8. FILTER.** Close the valve on the free arm of the Y tube to draw the sample and diluent through the membrane filter.



- 9. TRANSFER.** Without turning off the valve, open the filtration unit. If no droplets remain on the membrane filter, aseptically transfer the filter to the desired agar plate.



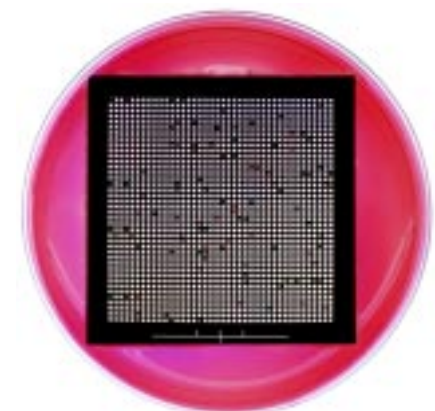
Yeast and mold growth on YM-11 Agar



Total bacterial count growth on Tryptic Soy Fast Green Agar



Salmonella growth on EF-18 Agar

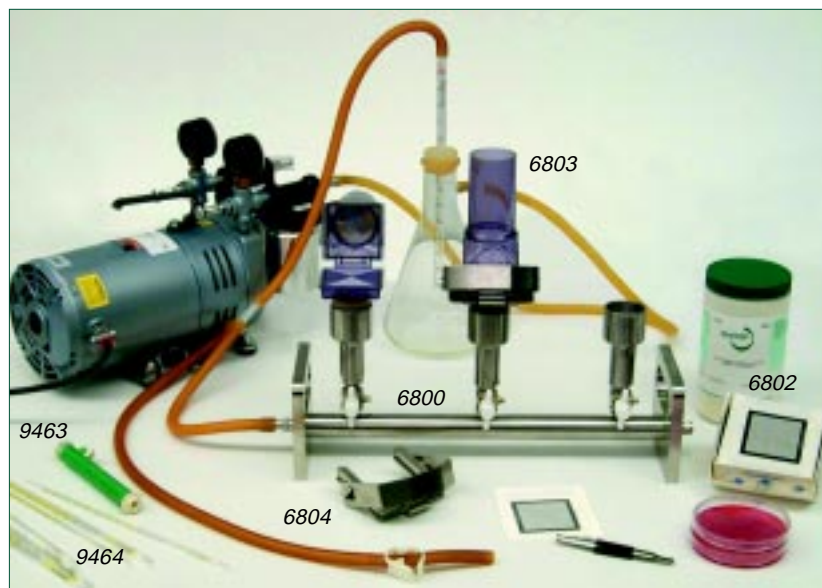


E. coli growth on SD-39 Agar

ISO-GRID Products

Equipment

- 6810 1-Place Filtration Manifold
- 6800 3-Place Filtration Manifold
- 6801 6-Place Filtration Manifold
- 6802 Membrane Filters (100)
- 6803 Filtration Unit
- 6804 Filtration Unit Clamp
- 6805 Methods Manual
- 6806 Filtration Unit Base
- 6807 Filtration Unit Funnel
- 6808 ISO-GRID Starter Kit - 200 membrane filters, 4 filter units, 2 filter unit clamps, Methods Manual
- 6809 Paddle Bags (500)
- 9463 Pipettor (100 µL-1 mL)
- 9464 Pipette Tips
- 9735 Incubator w/thermometer



Enzyme Products

- 6850E Papain
- 6851E APUG (alkaline protease)
- 6852E AMG (amyloglucosidase from rhizopus mold)
- 6853E Cellulase
- 6854E Hemicellulase

Culture Media

- 6900E Bacteriological Agar
- 6901E EF-18 Agar - for *Salmonella* detection
- 6902E LMG Agar - for *E. coli* / coliform enumeration
- 6903E BMA Agar - for confirmation of *E. coli*
- 6904E YM-11 Agar - for enumeration of yeasts and molds
- 6905E TSAF Agar - for total bacterial count
- 6906E LM-137 Agar (125 g + supplement pool) - for *Listeria* detection
- 6907E SD-39 Agar - for enumeration of *E. coli* / *E. coli* O157:H7
- 6909E Tetrathionate Broth Base - *Salmonella* Enrichment Broth
- 6910E SCCRAM Broth - *Salmonella* Enrichment Broth
- 6912E Chlortetracycline-HCL - antibiotic supplement for YM-11 Agar



6801 6-Place Filtration Manifold; 6810 1-Place Filtration Manifold

Equipment and accessories required but not available through Neogen

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|---|-----------------|----------------|
| • Side-arm 1000 mL flask | • Autoclave | • Stomacher |
| • Purified water | • Vacuum pump | • Water bath |
| • Forceps (sterile) | • Vacuum tubing | • Petri dishes |
| • Sterile diluent (Butterfield's phosphate buffer, peptone / Tween 80, peptone water) | | |



9735 Incubator w/thermometer