＊＊ CompactDry™ CF

Simple and Easy Dry Medium for Coliform

＊＊Background

It is important to detect and measure Coliforms in foodstuffs and the food environment to monitor the degree of exposure and limit the possibility of food poisoning. The pour plate method has been widely used to determine microbial counts, however, it is time consuming and complicated, requiring operations such as preparation of hot agar maintained at 45 - 50℃, and uniform mixing and dilution. To save operator time and make it possible for anyone to perform the microbial count test without difficulty, the CompactDry™ was developed based on a new concept and technology applicable to the food industry. CompactDry™ requires a simple and easy manipulation to add a drop of specimen on the device.

Features and Benefits

1) Small and compact plate: Need only small physical spaces for storing, testing and incubating.
2) Ready to use and portable plate: No need to prepare medium, which eliminates the waste of medium as well as the apparatus to prepare the medium. Good for an emergency and field testing.
3) Sample diffuses automatically and evenly into the plate: No need for mixing and diluting after sampling.
＊4) Dried plate with 24 month shelf life at room temperature: Easy to store. Once a liquid sample is added, the dry coated medium transforms into a gel and the plate is ready to incubate.
5) Coliforms form blue/blue-green colonies for easy enumeration. Isolated colonies can be subcultured individually to other media.
6) Good correlation with pour plate method: Maintain the continuity of data accumulated.

Certification by AOAC

The CompactDry™ CF has been compared to AOAC *Official Method*℠ **966.24** and certified by the AOAC Research Institute *Performance Tested Methods*℠ Program (Certificate No. 110401) for enumeration of coliforms in raw meat (raw ground beef, raw ground pork, raw pork, raw lamb, and raw veal). A matrix extension comparing the CompactDry™ CF to ISO 4832:2006 for cooked chicken, fresh pre-washed bagged shredded iceberg lettuce, frozen cod filets, instant non-fat dry milk, and pasteurized 2% milk was approved in 2015.

＊＊Test Kit Components

1) CompactDry™ CF Plates

Additional Reagents and Supplies Required, Not Provided

1) Butterfield's phosphate-buffered diluent (BPBD) − Prepare according to AOAC **966.24**
2) Maximum recovery diluent (MRD) − Prepare according to ISO 4832:2006
3) Filtered Stomacher bags

Apparatus

1) Blender or Stomacher™ or equivalent for homogenizing sample
2) Pipets − 1 mL
3) Incubator − 35 ± 1 ℃ (raw meat products) or 37 ± 1 ℃ (all other matrices)

Operating Procedure

Preparation of specimen

1) Prepare appropriate diluent: Butterfield's buffered phosphate diluent (BPBD) for raw meat products or Maximum Recovery Diluent (MRD) for other claimed matrices. Autoclave for sterilization.
2) Viable count in solid foodstuffs
   For raw meat, weigh 50g of sample and add 450 mL BPBD to the sample. Homogenize by blender for 2 min ± 15 s. For cooked chicken, fresh lettuce, or frozen fish, weigh 10 g of sample and add 90 mL MRD. Homogenize by Stomacher for 1 min ± 10s. For milk powder, weigh 10 g of sample and add to 90 mL MRD pre-warmed to 45 ± 1 ℃. Slowly swirl and shake until sample is dissolved.
3) Viable count in liquid foodstuffs
   For pasteurized milk, use without dilution, dilute 1 mL in 9 mL MRD., or dilute further if viable count is >250 CFU/plate. Vortex to mix.
＊＊4) Viable count in swab test sample (not included in AOAC PTM certification)
   Use wiping solution (without dilution or diluted if necessary in MRD) obtained from the cotton swab. It is recommended to use Swab Test ST-25PBS (Code 06698) available as an optional kit.

Direction for CompactDry™ CF

1) Open aluminum bag and remove a set of 4 plates.
2) Detach necessary number of plate(s) from a set of four by bending up and down while pressing the lid. Use a connected set of four plates when serial dilution measuring is intended.
3) Remove the cap from the plate, pipette 1 mL of sample (to be diluted further of necessary) in the middle of the dry sheet, and replace cap. Specimen diffuses automatically and evenly over the entire sheet (total medium of 20 cm^2) to transform it into a gel within seconds.
4) Write the appropriate information in the memorandum section. Invert the capped plate and place in incubator at 35 ± 1 ℃ for raw meat or 37 ± 1 ℃ for all other matrices. Incubate 24 ± 2 h.
5) From the backside of the plate, count the number of blue/blue-green colonies in the medium. White paper placed under the plate can make colony counting easier. For large numbers of colonies, use the grids carved on the backside consisting of 1 cm x 1 cm, or 0.5 cm x 0.5 cm, at the four corners.
6) Enumeration range of CompactDry™ CF is 1 − 250 CFU/plate. Specimen should be diluted in the appropriate diluent to obtain a concentration level in the countable range.

Precaution for use

1) Do not use CompactDry™ CF for human and animal diagnosis.
2) To avoid microbial contamination, do not touch the surface of the dry sheet medium during inoculation.
3) During incubation, keep cap tight to avoid any possible dehydration.
4) Use of filtered stomacher bags is recommended to eliminate risk of carry over of tiny pieces of foodstuffs onto the surface of the medium.
5) If more than 10^4 CFU/mL were inoculated onto a plate, no distinguishable colored colonies will form and the entire plate will become colored.
＊＊6) If the nature of sample affects the reaction of the medium, inoculate the sample only after the factor has been eliminated by means such as dilution, pH adjustment or other. This may include samples with high viscosity, that are colored, that react with the chromogenic enzyme substrate, or that have too high or too low pH.

Interpretation

1) The medium contains the chromogenic enzyme substrate X-gal. Colonies grown on CompactDry™ CF are blue/blue-green. Growth of bacteria other than coloforms is inhibited and if they grow, the colonies are not colored. Count only blue/blue-green colonies.
2) The full plate size is 20 cm^2. The backside contains carved grids of 1 cm x 1 cm and 0.5 cm x 0.5 cm to make colony counting easier. If large numbers of colonies are present on the medium, the total viable count can be obtained by averaging the number of colonies per large grid (1 cm x 1 cm), counted from several grids, and multiplying by 20. Alternatively, the total viable count can be obtain by averaging the number of colonies per small grid (0.5 cm x 0.5 cm), counted from several grids, and multiplying by 80.

Warning and Direction for Use

1. General precautions

1) Read and follow precisely the warning and direction for use described in the package insert and/or label.
2) Do not use the product after its expiration date. Quality of the product is not guaranteed after its shelf life.
3) Do not use product that contains any foreign materials, is discolored or dehydrated, or has a damaged container.
4) Use plates as soon as possible after opening. Any unused plates should be returned to the aluminum bag and sealed with tape to avoid light and moisture. CompactDry™ CF is sensitive to light, which affects color development of colonies.
5) Cap tightly after inoculation to avoid dehydration of gelled medium.

2. Safety Precautions

1) Wash immediately with water if medium or reagent comes into contact with eyes or mouth. Consult a physician.
2) Manipulations with microorganisms involve certain risks of laboratory-acquired infections. Practice manipulations under supervision of trained laboratory personnel with biohazard protection measures.
3) Treat laboratory equipment or medium that comes into contact with the specimen as infectious.

3. Precautions for waste disposal

Sterilize any medium, reagent and materials by autoclaving or boiling after use, and then dispose as industrial waste according to local laws and regulations.

4. User Responsibility

1) It is the user's responsibility in selecting any test method to evaluate a sufficient number of samples with particular foods and microbial challenges to satisfy the user that the chosen test method meets the user's criteria.
2) It is the user's responsibility to determine that any test methods and results meet its customers' or suppliers' requirements. The user must train its personnel in proper testing techniques.
3) It is the user's responsibility to validate the performance of this method for use with any non-certified matrix.

5. Limitation of Warranties

CompactDry™ plates are manufactured at an ISO 9001:2015 facility.
If any CompactDry™ plate is proven to be defective by fault of the manufacturer or its authorized distributors, they may replace or, at their discretion, refund the purchase price of any plate. These are the exclusive remedies.

＊Storage and Shelf life

Storage: Keep at room temperature (1 − 30℃)
Shelf life: Twenty-four (24) months after manufacturing.
Shelf life is printed on both label of outer box and aluminum bag.

＊＊Package

CompactDry™ CF 40 plates ..... Code 06744
CompactDry™ CF 240 plates ..... Code 06745

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Further information

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