CC-109 Vial uninoculated (top) and inoculated vial (bottom).

Neogen® Soleris® Coliform Vial, 9 mL

Product Number: CC-109

Introduction

The Neogen® Soleris® Coliform Vial, 9 mL (CC-109) is a screening vial specific for coliform organisms. The vial has broad inclusivity and an assay time of 18 hours for most applications. The vial contains a peptone yeast extract base with lactose as a carbon source. The selective agents include bile salts, sodium lauryl sulfate, and other gram-positive inhibitors. Acidification of the medium due to the lactose utilization changes the pH. As coliforms metabolize, the pH indicator changes from a purple to a yellow color. The color change is read by optical sensors in the instrument.

In an AOAC Research Institute Performance Tested Method Certificate #010302 study, the Neogen® Soleris® Coliform Vial was found to be an effective procedure for specification monitoring of total coliform count in the following sample types: pasteurized milk, ice cream, butter, yogurt, chocolate, raw eggs, pork sausage, ground beef, raw chicken, and dried cannabis flower [>0.3% delta 9-tetrahydrocannabinol (THC)]. Test duration is 18 hours with the following exceptions: dried cannabis flower, which is 18–24 hours, and yogurt, queso, white chocolate, milk chocolate, and dry pet food, which are 24 hours.

Materials Required

1. CC-109, Neogen® Soleris® Coliform Vial, 9 mL.
2. Neogen® Rapid Microbiology Instrument (product no. SNG-INS32). Containing one temperature-controlled (18–50°C ± 0.5°C) incubator drawer with 32 test locations per drawer. Each test location contains a light-emitting diode (LED) based optical sensor for measurement of changes in absorbance over time.
3. Neogen® Soleris® Computer (product no. SNG-COMPUTER or equivalent).
4. Neogen® Soleris® Vial Rack (product no. VR-300, VR-200, or equivalent): Holds 32 vials.

Dependent on Sample Tested

1. Sterile 1N to 5N sodium hydroxide (NaOH) and/or hydrochloric acid (HCl).
2. pH meter or pH paper.
3. Micropipettor and tips, 20–200 µL.
4. Micropipettor and tips, 100–1,000 µL.
5. Inoculating loops, 10 µL.
6. Neogen® Butterfield's Phosphate Buffer (BPB), 99 mL (BPB-99).
7. Neogen® Buffered Peptone Water (BPW) (product no. NCM0015 or equivalent).
8. Neogen® Tryptic Soy Broth (TSB), 90 mL (BLX-TSB90 or equivalent).
9. Neogen® BPB, 90 mL (product no. 6654 or equivalent).
   a. If required, use a designated neutralization broth, such as D/E Neutralizer, TAT Broth, Modified Letheen Broth, etc.
10. Stomacher or equivalent.
11. Stomacher-type bags with mesh filter (product no. 6827 or equivalent).
12. Balance: For weighing samples, minimum 100 g ± 0.1 g capacity.

Coliform Confirmation (Optional) Materials (Choose One of the Following)

1. Neogen® Soleris® Brilliant Green Bile (BGB) Broth tubes (BGB-127).
2. Neogen® Violet Red Bile Agar (VRBA), 500 g (product no. NCM0025A or equivalent).

Vial Specifications

1. Vial pH is 6.7 ± 0.2.
2. Vial sample capacity up to 1.0 mL.

Sample Preparation

1. Add sample directly or if using dilute-to-specification, complete the dilution required.
   a. For United States Pharmacopeia (USP) testing, perform 1:10 dilution by adding 10 g of sample in 90 mL of TSB or designated neutralization broth.
   b. For cannabis testing, perform 1:10 dilution by adding 10 g of sample to 90 mL of TSB. Homogenize the sample thoroughly and decant the liquid. The liquid becomes the test sample.
   c. For all other testing, perform 1:10 dilution by adding 11 g of sample in 99 mL of BPB.
2. Check pH and adjust, if necessary, to 7.0 ± 1.0.
3. If necessary, use BPB or TSB to create the dilutions to the appropriate specification.

Inoculation of Vial

1. Inoculate the vial with no more than 1.0 mL and no less than 0.10 mL of the sample to be tested. If using specification monitoring, add the volume of the appropriate dilution required.
2. Cap the vial and gently invert three times to mix sample. Keep cap tight.
3. Insert the vial into the Soleris instrument utilizing the applicable algorithm below or as indicated by a trainer. It is not recommended to adjust the parameters without consulting Neogen technical services at 517.372.9200 or visiting our website at neogen.com.

Algorithms Utilized (Yellow Test Type)

Food

Threshold	Skip	Shuteye	Temperature	Test Duration	Validation Scope
10	1	25	35 ± 2°C	18 hours[1]	AOAC PTM # 010302: raw eggs, pork sausage, ground beef, and raw chicken, Pasteurized milk, ice cream, butter, yogurt, chocolate. Validated in accordance with AOAC International Methods Committee Guidelines for Validation of Microbiological Methods for Food and Environmental Surfaces[2]: Broad food and environmental surfaces.

Dairy Products

Threshold	Skip	Shuteye	Temperature	Test Duration	Validation Scope
10	1	25	32 ± 2°C	24 hours	Yogurt. Validated performance compared to Health Products and Food Branch (HPB) Methods for the Microbiological Analysis of Foods: MFHPB-31

Personal Care, Cosmetics, Nutraceuticals, and Dietary Supplements

Threshold	Skip	Shuteye	Temperature	Test Duration	Validation Scope
10	1	25	35 ± 2°C	18 hours	Validated in accordance with USP <1223> Validation of Alternative Microbiological Methods[2]: Broad personal care, cosmetic, nutraceutical, and dietary supplement products.

Cannabis

Threshold	Skip	Shuteye	Temperature	Test Duration	Validation Scope
10	1	25	35 ± 2°C	18–24 hours	AOAC PTM # 010302: Dried cannabis flower [>0.3% delta 9-tetrahydrocannabinol (THC)].
				18 hours[3]	Validated in accordance with USP <1223> Validation of Alternative Microbiological Methods[2]: Broad cannabis and cannabis-containing products.

[1] Yogurt, queso, white chocolate, milk chocolate, and dry pet food require a test duration of 24 hours.

[2] U.S. Food and Drug Administration Bacteriological Analytical Manual (FDA-BAM), Chapter 4 (Enumeration of *Escherichia coli* and the coliform bacteria) solid medium method referenced for food products and environmental samples, and modified for evaluation with cannabis, personal care products, cosmetics, nutraceuticals, and dietary supplements.

[3] Dried cannabis flower requires a test duration of 18–24 hours.

Confirmation Step (Optional)

Test Method: Brilliant Green Bile (BGB) Broth

1. From a positive CC-109 Vial, invert to mix and inoculate 0.1 mL of the broth medium into a BGB Broth tube with the inverted Durham tube.
2. Incubate for 18–24 hours at 35°C. Gas production inside the Durham tube and yellow color due to the acid production indicates a positive result.

Test Method: Violet Red Bile Agar (VRBA)

1. From a positive CC-109 Vial, invert to mix.
2. Using a 10 µL inoculating loop, streak from the Soleris vial to a VRBA plate.
3. Incubate for 18–24 hours at 35°C and examine for typical coliform colonies.

Disclaimers

Information provided is based on validation procedures that Neogen performed in Neogen laboratories. Deviation from procedures is possible, but should be discussed with Neogen technical services.

Samples may need to be pH adjusted for all vials.

Appearance of the vials should be inspected prior to use.

If shuteye detections are observed, the threshold may need to be adjusted based on the product matrix. Certain product matrices may require parameter adjustments, including increased test duration. For more information contact Neogen technical services at 517.372.9200 or visit our website at neogen.com.

Some strains do not detect within the recommended test duration and will need an extended test duration. These organisms may have been strain-specific or described as being temperature sensitive.

Reference the Soleris Operating Manual for troubleshooting and instrument use information.

Safety Precautions

Use of this test should be restricted to individuals with appropriate laboratory training in microbiology as some coliform strains are potentially infectious. Reagents are for laboratory use only. Test samples and used Soleris vials may contain potentially infectious microorganism; follow appropriate laboratory procedures for the handling of microbial pathogens. (U.S. Department of Health and Human Services, Biosafety in Microbiological and Biomedical Laboratories (BMBL), 6th Edition, HHS Publication No. (CDC) 300859, Revised June 2020; found at: www.cdc.gov/labs/pdf/CDC-Biosafety Microbiological BiomedicalLaboratories-2020-P.pdf (or most current version, found at cdc.gov).

All pipetting transfers must be made using either a disposable pipette and pipetting aid or a micro pipettor with disposable tips. Culture media contains antimicrobial selective agents and dyes: wear appropriate PPE and avoid contact with skin and mucous membranes.

Refer to the Safety Data Sheet available from Neogen for more information. Used enrichment cultures and agar media should be handled and disposed of as potentially infectious material. The preferred method for decontamination of contaminated material is autoclaving. Items that cannot be autoclaved may be decontaminated using a disinfectant solution, e.g., 10% household bleach, followed by rinsing with water. Follow applicable local, state and federal regulations for disposal.

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