

Analytical Methods Approved for Drinking Water Compliance Monitoring under the Total Coliform Rule

Analysis for the following contaminants shall be conducted in accordance with the methods in the following table or their equivalent as determined by EPA. The methods and monitoring requirements for these contaminants are specified in 40 CFR 141.21. Additional methods are listed in Appendix A to Subpart C of Part 141.

The CFR is the legal reference for approved methods and takes precedent over this table. The table should accurately reflect the analytical methods information published in 40 CFR 141. If you find discrepancies, please notify The Safe Drinking Water Hotline (800-426-4791) so that EPA can correct the table.

| Contaminant Method | Organizatio | on ReferenceTitle | Method Date | EPA Publication Number | Publication Order Number | Source of Method | | | | |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------|----------------------------------------------------|-----------------------------------------------|----------------------------------------------------------------------------------|--|--|--|--|
| Total Coliforms | The time transit. | from sample collection to initiation of analys | sis may not exceed 30 hou | rs. Systems are encou | uraged but not requi | red to hold samples below 10°C during | | | | |
| Provide the failed provide the failed positive and failed failed positive and flegative failed for the methods of the method for the denotes of the method for the failed positive and failed failed positive and failed failed positive and failed failed positive and failed positive and failed failed positive and failed failed positive and positive and positive and positive and failed positive and positive and positive and failed positive and failed positive and failed positive and failed positive and positive and positive and failed positive and failed positive and positive and positive and failed positive and failed positive and posi | | | | | | | | | | |
| 9221 A | Standard Methods | Standard Methods for the Examinati Water and Wastewater, 18th Edition | ion of 1992 1 | | | Standard Methods | | | | |
| | Lactose broth, as commercially available, may be used in lieu of lauryl tryptose broth, if the system conducts at least 25 parallel tests between this medium and lauryl tryptose broth using the water normally tested, and this comparison demonstrates that the false-positive rate and false-negative rate for total coliform, using lactose broth, is less than 10 percent. | | | | | | | | | |
| | If i | If inverted tubes are used to detect gas production, the media should cover these tubes at least one-half to two-thirds after the sample is added. | | | | | | | | |
| | No | prequirement exists to run the completed pha | se on 10 percent of all tota | al coliform-positive co | onfirmed tubes. | | | | | |
| 9221 A | Standard Methods | Standard Methods for the Examinati Water and Wastewater, 19th Edition | ion of 1995 1 | | | Standard Methods | | | | |
| | Lao and col | ctose broth, as commercially available, may l d lauryl tryptose broth using the water norma liform, using lactose broth, is less than 10 per | be used in lieu of lauryl tr lly tested, and this compar- rcent. | yptose broth, if the sy rison demonstrates that | stem conducts at lea at the false-positive | ast 25 parallel tests between this medium rate and false-negative rate for total | | | | |
| | If i | inverted tubes are used to detect gas production | on, the media should cove | r these tubes at least o | one-half to two-third | ls after the sample is added. | | | | |
| | No | No requirement exists to run the completed phase on 10 percent of all total coliform-positive confirmed tubes. | | | | | | | | |

| Contaminant | | | | Method | EPA Bublication | Publication Order | | | | |
|-----------------|--------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|--|
| Method | Organiz | ation | ReferenceTitle | Date | Number | Number | Source of Method | | | |
| Total Coliforms | The ti transi | me from s t. | sample collection to initiation of analysis may n | ot exceed 30 hour | s. Systems are encou | raged but not require | ed to hold samples below 10°C during | | | |
| | EPA s encou intent these Endo positi equiv | strongly re rages labe that if the studies or and LES ve and ne alent conf | ecommends that laboratories evaluate the false- poratories to establish false-positive and false-neg e method they choose has an unacceptable false- a a minimum of 5% of all total coliform-positive Endo Membrane Filter Tests, Standard Total Co gative-rates may be based on lactose fermentation irmation tests. False-positive and false-negative | positive and negative gative rates within positive or negative samples, except foliform Fermentation, the rapid test for e information is of | ive rates for the method their own laboratory ve rate, another method for those methods who on Technique, and Pr or B-galactosidase an iten available in public | ods(s) they use for m and sample matrix (od can be used. The ere verification/confi resence-Absence Col d cytochrome oxidas shed studies and/or f | nonitoring total coliforms. EPA also drinking water or source water) with the Agency suggests that laboratories perform irmation is already required, e.g., the M- iform Test. Methods for establishing false- se, multi-test identification systems, or from the manufacturer(s). | | | |
| 9221 A | Standard Methods | | Standard Methods for the Examination of Water and Wastewater, 20th Edition | 1998 | | | Standard Methods | | | |
| | | Lactose broth, as commercially available, may be used in lieu of lauryl tryptose broth, if the system conducts at least 25 parallel tests between this medium and lauryl tryptose broth using the water normally tested, and this comparison demonstrates that the false-positive rate and false-negative rate for total coliform, using lactose broth, is less than 10 percent. | | | | | | | | |
| | | If inverte | ed tubes are used to detect gas production, the m | edia should cover | these tubes at least of | ne-half to two-thirds | after the sample is added. | | | |
| | | No requi | rement exists to run the completed phase on 10 | percent of all total | l coliform-positive co | nfirmed tubes. | | | | |
| 9221 A | Standard Methods | | Standard Methods for the Examination of Water and Wastewater, 21st Edition | 2005 | | | Standard Methods | | | |
| | | Lactose and laury coliform | broth, as commercially available, may be used in a ltyptose broth using the water normally tested using lactose broth, is less than 10 percent. | n lieu of lauryl tryptose broth, if the system conducts at least 25 parallel tests between this medium, and this comparison demonstrates that the false-positive rate and false-negative rate for total | | | | | | |
| | | If inverte | ed tubes are used to detect gas production, the m | edia should cover | these tubes at least of | ne-half to two-thirds | after the sample is added. | | | |
| | | No requi | rement exists to run the completed phase on 10 | percent of all total | l coliform-positive co | nfirmed tubes. | | | | |
| 9221 A-99 | Standard Methods Online | | Online version of Standard Methods for the Examination of Water and Wastewater. Approval year by Standard Methods Committee is designated by last 2 digits. This is the only online version that is approved. | | | | http://www.standardmethods.org/ | | | |
| | | Lactose and laury coliform | broth, as commercially available, may be used in a ltyptose broth using the water normally tested by using lactose broth, is less than 10 percent. | n lieu of lauryl try I, and this compari | ptose broth, if the sys son demonstrates that | tem conducts at leas t the false-positive ra | t 25 parallel tests between this medium ate and false-negative rate for total | | | |
| | | If inverte | ed tubes are used to detect gas production, the m | edia should cover | these tubes at least of | ne-half to two-thirds | after the sample is added. | | | |
| | | No requi | rement exists to run the completed phase on 10 | percent of all total | l coliform-positive co | nfirmed tubes. | | | | |

| Contaminant | Organiza | ation | ReferenceTitle | Method Date | EPA Publication | Publication Order | |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------|------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Total California | The tir | no from s | ample collection to initiation of analysis may | pot avcard 30 hours | Number | NUMDEr | Source of Method |
| Total Comornis | transit | | ample conection to initiation of analysis may | not exceed 50 nours | s. Systems are encou | llaged but not require | ed to hold samples below 10°C during |
| | EPA so encour intent these s Endo a positiv equiva | trongly re rages labo that if the studies on and LES I re and neg lent confi | commends that laboratories evaluate the false- ratories to establish false-positive and false-ne method they choose has an unacceptable false a minimum of 5% of all total coliform-positiv Endo Membrane Filter Tests, Standard Total C gative-rates may be based on lactose fermentat rmation tests. False-positive and false-negative | -positive and negati- egative rates within e-positive or negativ ve samples, except for coliform Fermentation ion, the rapid test for ve information is off | ve rates for the meth their own laboratory ve rate, another meth or those methods wh on Technique, and P or B-galactosidase ar ten available in public | ods(s) they use for n and sample matrix (lod can be used. The here verification/conf resence-Absence Col and cytochrome oxida ished studies and/or t | nonitoring total coliforms. EPA also drinking water or source water) with the Agency suggests that laboratories perform irmation is already required, e.g., the M- liform Test. Methods for establishing false- se, multi-test identification systems, or from the manufacturer(s). |
| 9221 B | Standard Methods | | Standard Methods for the Examination of Water and Wastewater, 18th Edition | 1992 | | | Standard Methods |
| Lactose broth, as commercially available, may be used in lieu of lauryl tryptose broth, if the system cond and lauryl tryptose broth using the water normally tested, and this comparison demonstrates that the false coliform, using lactose broth, is less than 10 percent. | | | | | | | at 25 parallel tests between this medium ate and false-negative rate for total |
| | | If inverte | d tubes are used to detect gas production, the r | media should cover | these tubes at least o | one-half to two-thirds | after the sample is added. |
| | | No requir | rement exists to run the completed phase on 10 |) percent of all total | coliform-positive co | onfirmed tubes. | |
| 9221 B | Standard Methods | | Standard Methods for the Examination of Water and Wastewater, 19th Edition | 1995 | | | Standard Methods |
| | | Lactose b and laury coliform, | roth, as commercially available, may be used l tryptose broth using the water normally teste using lactose broth, is less than 10 percent. | in lieu of lauryl tryped, and this comparis | ptose broth, if the system of | stem conducts at leas at the false-positive r | at 25 parallel tests between this medium ate and false-negative rate for total |
| | | If inverte | d tubes are used to detect gas production, the r | media should cover | these tubes at least o | one-half to two-thirds | after the sample is added. |
| | | No requir | rement exists to run the completed phase on 10 |) percent of all total | coliform-positive co | onfirmed tubes. | |
| 9221 B | Standard Methods | | Standard Methods for the Examination of Water and Wastewater, 20th Edition | 1998 | | | Standard Methods |
| | | Lactose b and laury coliform, | roth, as commercially available, may be used l tryptose broth using the water normally teste using lactose broth, is less than 10 percent. | in lieu of lauryl tryped, and this comparis | ptose broth, if the system of | stem conducts at leas at the false-positive r | at 25 parallel tests between this medium ate and false-negative rate for total |
| | | If inverte | d tubes are used to detect gas production, the r | media should cover | these tubes at least of | one-half to two-thirds | after the sample is added. |
| | | No requir | rement exists to run the completed phase on 10 |) percent of all total | coliform-positive co | onfirmed tubes. | |

| Contaminant Method | Organizatio | n ReferenceTitle | Method Date | EPA Publication Number | Publication Order Number | Source of Method | | | | |
|-----------------------|----------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|--|--|
| Total Coliforms | The time transit. | rom sample collection to initiation of analysis n | nay not exceed 30 hour | s. Systems are encou | uraged but not require | ed to hold samples below 10°C during | | | | |
| | EPA stron encourage intent that these stud Endo and positive an equivalent | gly recommends that laboratories evaluate the f s laboratories to establish false-positive and fals if the method they choose has an unacceptable ies on a minimum of 5% of all total coliform-po LES Endo Membrane Filter Tests, Standard Tot nd negative-rates may be based on lactose ferme confirmation tests. False-positive and false-neg | alse-positive and negative e-negative rates within false-positive or negati sitive samples, except f cal Coliform Fermentati entation, the rapid test for gative information is of | ive rates for the meth their own laboratory ve rate, another meth for those methods wh on Technique, and P or B-galactosidase an cten available in publ | nods(s) they use for n 7 and sample matrix (100 can be used. The 100 nere verification/conf 100 resence-Absence Col 100 cytochrome oxida 110 ished studies and/or 11 | aonitoring total coliforms. EPA also drinking water or source water) with the Agency suggests that laboratories perform irmation is already required, e.g., the M- iform Test. Methods for establishing false- se, multi-test identification systems, or from the manufacturer(s). | | | | |
| 9221 B | Standard Methods | Standard Methods for the Examination Water and Wastewater, 21st Edition | of 2005 | | | Standard Methods | | | | |
| | Lac and coli | Lactose broth, as commercially available, may be used in lieu of lauryl tryptose broth, if the system conducts at least 25 parallel tests between this medium and lauryl tryptose broth using the water normally tested, and this comparison demonstrates that the false-positive rate and false-negative rate for total coliform, using lactose broth, is less than 10 percent. | | | | | | | | |
| | If in | nverted tubes are used to detect gas production, | the media should cover | these tubes at least of | one-half to two-thirds | after the sample is added. | | | | |
| | No | requirement exists to run the completed phase of | on 10 percent of all total | l coliform-positive co | onfirmed tubes. | | | | | |
| 9221 B-99 | Standard Methods Online | Online version of Standard Methods for Examination of Water and Wastewater. Approval year by Standard Methods Committee is designated by last 2 digits This is the only online version that is approved. | the | | | http://www.standardmethods.org/ | | | | |
| | Lac and coli | tose broth, as commercially available, may be u lauryl tryptose broth using the water normally form, using lactose broth, is less than 10 percen | used in lieu of lauryl try tested, and this compari t. | ptose broth, if the sy ison demonstrates that | stem conducts at leas at the false-positive r | t 25 parallel tests between this medium ate and false-negative rate for total | | | | |
| | If in | nverted tubes are used to detect gas production, | the media should cover | these tubes at least of | one-half to two-thirds | after the sample is added. | | | | |
| | No | requirement exists to run the completed phase of | on 10 percent of all total | l coliform-positive co | onfirmed tubes. | | | | | |
| 9221 D | Standard Methods | Standard Methods for the Examination Water and Wastewater, 18th Edition | of 1992 | | | Standard Methods | | | | |
| | No | requirement exists to run the completed phase of | on 10 percent of all total | l coliform-positive co | onfirmed tubes. | | | | | |
| | Six | -times formulation strength may be used if the n | nedium is filter-sterilize | ed rather than autocla | aved. | | | | | |
| 9221 D | Standard Methods | Standard Methods for the Examination Water and Wastewater, 19th Edition | of 1995 | | | Standard Methods | | | | |
| | No | requirement exists to run the completed phase of | on 10 percent of all total | l coliform-positive co | onfirmed tubes. | | | | | |
| | Six | -times formulation strength may be used if the n | nedium is filter-sterilize | ed rather than autocla | aved. | | | | | |

| Contaminant | | | Method | EPA | Publication | | | | |
|-----------------|-----------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|--|
| Method | Organization | ReferenceTitle | Date | Number | Order Number | Source of Method | | | |
| Total Coliforms | The time from transit. | a sample collection to initiation of analysis may | not exceed 30 hour | s. Systems are encou | araged but not requir | ed to hold samples below 10°C during | | | |
| | EPA strongly encourages lal intent that if th these studies of Endo and LES positive and n equivalent con | recommends that laboratories evaluate the false boratories to establish false-positive and false-n he method they choose has an unacceptable fals on a minimum of 5% of all total coliform-positive S Endo Membrane Filter Tests, Standard Total C egative-rates may be based on lactose fermental infirmation tests. False-positive and false-negati | e-positive and negative egative rates within e-positive or negative ve samples, except f Coliform Fermentati tion, the rapid test for ve information is of | ive rates for the meth their own laboratory ve rate, another meth for those methods wh on Technique, and Pr or B-galactosidase ar ften available in publi | ods(s) they use for n and sample matrix (od can be used. The ere verification/conf resence-Absence Co nd cytochrome oxida ished studies and/or | nonitoring total coliforms. EPA also drinking water or source water) with the Agency suggests that laboratories perform irmation is already required, e.g., the M- liform Test. Methods for establishing false- se, multi-test identification systems, or from the manufacturer(s). | | | |
| 9221 D | Standard Methods | Standard Methods for the Examination of Water and Wastewater, 20th Edition | 1998 | | | Standard Methods | | | |
| | No requ | uirement exists to run the completed phase on 10 | 0 percent of all total | l coliform-positive co | onfirmed tubes. | | | | |
| | Six-tim | es formulation strength may be used if the medi | ium is filter-sterilize | ed rather than autocla | wed. | | | | |
| 9221 D | Standard Methods | Standard Methods for the Examination of Water and Wastewater, 21st Edition | 2005 | | | Standard Methods | | | |
| | No requ | uirement exists to run the completed phase on 10 | 0 percent of all total | l coliform-positive co | onfirmed tubes. | | | | |
| | Six-tim | es formulation strength may be used if the medi | ium is filter-sterilize | ed rather than autocla | wed. | | | | |
| 9221 D-99 | Standard Methods Online | Online version of Standard Methods for the Examination of Water and Wastewater. Approval year by Standard Methods Committee is designated by last 2 digits. This is the only online version that is approved. | , | | | http://www.standardmethods.org/ | | | |
| | No requ | No requirement exists to run the completed phase on 10 percent of all total coliform-positive confirmed tubes. | | | | | | | |
| | Six-tim | es formulation strength may be used if the medi | ium is filter-sterilize | ed rather than autocla | wed. | | | | |
| 9222 A | Standard Methods | Standard Methods for the Examination of Water and Wastewater, 18th Edition | 1992 | | | Standard Methods | | | |
| | MI aga <i>Eschert</i> http://w | r also may be used. Preparation and use of MI a <i>ichia coli</i> in water" by Brenner, K.P., <i>et al.</i> , 199 www.epa.gov/nerlcwww/online.htm. Verificatio | agar is set forth in th 3, Appl. Environ. M n of colonies is not | ne article, "New medi Iicrobiol. 59:3534-35 required. | ium for the simultane 544. EPA/600/J-99/2 | eous detection of total coliform and 25. Available at: | | | |
| | Colisca | n® is approved as a modification of MI under t | he ATP program. It | t is available from M | icrology Laboratorie | s, P.O. Box 340, Goshen, IN 46527-0340. | | | |

| Contaminant Method | Organiza | ntion | ReferenceTitle | Method Date | EPA Publication Number | Publication Order Number | Source of Method |
|-----------------------|---------------------------------------------------------------------|-----------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Total Coliforms | The tin transit | me from s | ample collection to initiation of analysis may | y not exceed 30 hour | rs. Systems are encou | uraged but not requir | red to hold samples below 10°C during |
| | EPA s encoun intent these s Endo a positiv equiva | trongly re rages labo that if the studies on and LES l re and neg lent conf | commends that laboratories evaluate the fals pratories to establish false-positive and false- method they choose has an unacceptable fal a minimum of 5% of all total coliform-posit Endo Membrane Filter Tests, Standard Total gative-rates may be based on lactose fermenta irmation tests. False-positive and false-negat | e-positive and negative rates within se-positive or negative samples, except Coliform Fermentat ation, the rapid test five information is o | tive rates for the meth their own laboratory we rate, another meth for those methods wh ion Technique, and P for B-galactosidase ar ften available in publ | nods(s) they use for r and sample matrix (nod can be used. The here verification/conf bresence-Absence Co and cytochrome oxida ished studies and/or | nonitoring total coliforms. EPA also (drinking water or source water) with the e Agency suggests that laboratories perform firmation is already required, e.g., the M- liform Test. Methods for establishing false- se, multi-test identification systems, or from the manufacturer(s). |
| 9222 A | Standard Methods | | Standard Methods for the Examination of Water and Wastewater, 19th Edition | 1995 | | | Standard Methods |
| | | MI agar : <i>Escheric</i> http://wv | also may be used. Preparation and use of MI <i>hia coli</i> in water" by Brenner, K.P., et al., 199 w.epa.gov/nerlcwww/online.htm. Verificati | agar is set forth in t 93, Appl. Environ. M on of colonies is not | he article, "New med Aicrobiol. 59:3534-35 r required. | ium for the simultan 544. EPA/600/J-99/2 | eous detection of total coliform and 25. Available at: |
| | | Coliscan | ® is approved as a modification of MI under | the ATP program. | t is available from M | licrology Laboratorie | es, P.O. Box 340, Goshen, IN 46527-0340. |
| 9222 A | Standard Methods | | Standard Methods for the Examination of Water and Wastewater, 20th Edition | 1998 | | | Standard Methods |
| | | MI agar : <i>Escheric</i> http://ww | also may be used. Preparation and use of MI hia coli in water" by Brenner, K.P., et al., 199 /w.epa.gov/nerlcwww/online.htm. Verificati | agar is set forth in t 93, Appl. Environ. N on of colonies is not | he article, "New med Aicrobiol. 59:3534-35 required. | ium for the simultan 544. EPA/600/J-99/2 | eous detection of total coliform and 25. Available at: |
| | | Coliscan | ® is approved as a modification of MI under | the ATP program. | It is available from M | licrology Laboratorie | es, P.O. Box 340, Goshen, IN 46527-0340. |
| 9222 A | Standard Methods | | Standard Methods for the Examination of Water and Wastewater, 21st Edition | 2005 | | | Standard Methods |
| | | MI agar : <i>Escheric</i> http://wv | also may be used. Preparation and use of MI <i>hia coli</i> in water" by Brenner, K.P., et al., 199 w.epa.gov/nerlcwww/online.htm. Verificati | agar is set forth in t 93, Appl. Environ. N on of colonies is not | he article, "New med Aicrobiol. 59:3534-35 required. | ium for the simultan 544. EPA/600/J-99/2 | eous detection of total coliform and 25. Available at: |
| | | Coliscan | ® is approved as a modification of MI under | the ATP program. | t is available from M | licrology Laboratorie | es, P.O. Box 340, Goshen, IN 46527-0340. |

| Contaminant Method | Organization | ReferenceTitle | Method Date | EPA Publication Number | Publication Order Number | Source of Method | | | |
|-----------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|--|
| Total Coliforms | The time fro transit. | m sample collection to initiation of analysis may | not exceed 30 hours | s. Systems are encou | uraged but not requir | ed to hold samples below 10°C during | | | |
| | EPA strongl encourages l intent that if these studies Endo and LI positive and equivalent c | y recommends that laboratories evaluate the false- laboratories to establish false-positive and false-ne the method they choose has an unacceptable false s on a minimum of 5% of all total coliform-positiv ES Endo Membrane Filter Tests, Standard Total C negative-rates may be based on lactose fermentat onfirmation tests. False-positive and false-negative | -positive and negati egative rates within e-positive or negativ ve samples, except for coliform Fermentation ion, the rapid test for ve information is off | ve rates for the meth their own laboratory ve rate, another meth or those methods wh on Technique, and P or B-galactosidase an ten available in publ | nods(s) they use for n y and sample matrix (nod can be used. The here verification/conf Presence-Absence Co nd cytochrome oxida lished studies and/or | nonitoring total coliforms. EPA also (drinking water or source water) with the e Agency suggests that laboratories perform firmation is already required, e.g., the M- liform Test. Methods for establishing false- se, multi-test identification systems, or from the manufacturer(s). | | | |
| 9222 A-97 | Standard Methods Online | Online version of Standard Methods for the Examination of Water and Wastewater. Approval year by Standard Methods Committee is designated by last 2 digits. This is the only online version that is approved. | | | | http://www.standardmethods.org/ | | | |
| | MI agar also may be used. Preparation and use of MI agar is set forth in the article, "New medium for the simultaneous detection of total coliform and <i>Escherichia coli</i> in water" by Brenner, K.P., et al., 1993, Appl. Environ. Microbiol. 59:3534-3544. EPA/600/J-99/225. Available at: http://www.epa.gov/nerlcwww/online.htm. Verification of colonies is not required. | | | | | | | | |
| | Colise | can® is approved as a modification of MI under the | ne ATP program. It | is available from M | licrology Laboratorie | es, P.O. Box 340, Goshen, IN 46527-0340. | | | |
| 9222 B | Standard Methods | Standard Methods for the Examination of Water and Wastewater, 18th Edition | 1992 | | | Standard Methods | | | |
| | MI agar also may be used. Preparation and use of MI agar is set forth in the article, "New medium for the simultaneous detection of total coliform and <i>Escherichia coli</i> in water" by Brenner, K.P., et al., 1993, Appl. Environ. Microbiol. 59:3534-3544. EPA/600/J-99/225. Available at: http://www.epa.gov/nerlcwww/online.htm. Verification of colonies is not required. | | | | | | | | |
| | Colise | can® is approved as a modification of MI under th | ne ATP program. It | is available from M | licrology Laboratorie | es, P.O. Box 340, Goshen, IN 46527-0340. | | | |
| 9222 B | Standard Methods | Standard Methods for the Examination of Water and Wastewater, 19th Edition | 1995 | | | Standard Methods | | | |
| | MI ag Esche http:// | ar also may be used. Preparation and use of MI a <i>prichia coli</i> in water" by Brenner, K.P., et al., 1993 /www.epa.gov/nerlcwww/online.htm. Verification | gar is set forth in th 3, Appl. Environ. M n of colonies is not a | e article, "New med icrobiol. 59:3534-35 required. | ium for the simultan 544. EPA/600/J-99/2 | eous detection of total coliform and 25. Available at: | | | |
| | Colise | can® is approved as a modification of MI under th | ne ATP program. It | is available from M | licrology Laboratorie | es, P.O. Box 340, Goshen, IN 46527-0340. | | | |

| Contaminant Method | Organiz | ation | ReferenceTitle | Method Date | EPA Publication Number | Publication Order Number | Source of Method |
|-----------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Total Coliforms | The ti transi | me from s t. | ample collection to initiation of analysis may | not exceed 30 hours | . Systems are encou | raged but not requir | ed to hold samples below 10°C during |
| | EPA : encou intent these Endo positi equiv | strongly re rages labo that if the studies on and LES H ve and neg alent confi | commends that laboratories evaluate the false ratories to establish false-positive and false-n method they choose has an unacceptable fals a minimum of 5% of all total coliform-positi Endo Membrane Filter Tests, Standard Total C gative-rates may be based on lactose fermenta rmation tests. False-positive and false-negati | e-positive and negative regative rates within se-positive or negative ve samples, except for Coliform Fermentation tion, the rapid test for twe information is off | ve rates for the meth- their own laboratory re rate, another meth- or those methods who on Technique, and Pr or B-galactosidase an ten available in publi | ods(s) they use for n and sample matrix (od can be used. The ere verification/conf resence-Absence Co d cytochrome oxida shed studies and/or | nonitoring total coliforms. EPA also drinking water or source water) with the Agency suggests that laboratories perform irmation is already required, e.g., the M- liform Test. Methods for establishing false- se, multi-test identification systems, or from the manufacturer(s). |
| 9222 B | Standard Methods | | Standard Methods for the Examination of Water and Wastewater, 20th Edition | 1998 | | | Standard Methods |
| | MI agar also may be used. Preparation and use of MI agar is set forth in the article, "New medium for the simultaneous detection of total coliform a <i>Escherichia coli</i> in water" by Brenner, K.P., et al., 1993, Appl. Environ. Microbiol. 59:3534-3544. EPA/600/J-99/225. Available at: http://www.epa.gov/nerlcwww/online.htm. Verification of colonies is not required. | | | | | | |
| | | Coliscan | B is approved as a modification of MI under t | he ATP program. It | is available from Mi | icrology Laboratorie | s, P.O. Box 340, Goshen, IN 46527-0340. |
| 9222 B | Standard Methods | | Standard Methods for the Examination of Water and Wastewater, 21st Edition | 2005 | | | Standard Methods |
| | | MI agar a <i>Escherich</i> http://ww | lso may be used. Preparation and use of MI a <i>hia coli</i> in water" by Brenner, K.P., et al., 199 w.epa.gov/nerlcwww/online.htm. Verification | agar is set forth in the 3, Appl. Environ. M on of colonies is not a | e article, "New medi icrobiol. 59:3534-35 required. | um for the simultane 44. EPA/600/J-99/2 | eous detection of total coliform and 25. Available at: |
| | | Coliscan | B is approved as a modification of MI under t | he ATP program. It | is available from Mi | icrology Laboratorie | s, P.O. Box 340, Goshen, IN 46527-0340. |
| 9222 B-97 | Standard Methods Online | | Online version of Standard Methods for the Examination of Water and Wastewater. Approval year by Standard Methods Committee is designated by last 2 digits. This is the only online version that is approved. | 2 | | | http://www.standardmethods.org/ |
| | | MI agar a Escherich http://ww | llso may be used. Preparation and use of MI a <i>hia coli</i> in water" by Brenner, K.P., et al., 199 w.epa.gov/nerlcwww/online.htm. Verification | agar is set forth in the 3, Appl. Environ. Monon of colonies is not a | e article, "New medi icrobiol. 59:3534-35 required. | um for the simultane 44. EPA/600/J-99/2 | eous detection of total coliform and 25. Available at: |
| | | Coliscan | B is approved as a modification of MI under t | he ATP program. It | is available from Mi | icrology Laboratorie | s, P.O. Box 340, Goshen, IN 46527-0340. |

| Contaminant | | | | Method | EPA Bublication | Publication Order | | | | |
|-----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|--|
| Method | Organizati | on | ReferenceTitle | Date | Number | Number | Source of Method | | | |
| Total Coliforms | The time transit. | e from sa | mple collection to initiation of analysis may not | exceed 30 hours | s. Systems are encour | aged but not require | d to hold samples below 10°C during | | | |
| | EPA stro encourag intent that these stu Endo and positive equivale | ongly rec ges labor at if the r dies on a d LES E and nega nt confir | commends that laboratories evaluate the false-po- atories to establish false-positive and false-nega method they choose has an unacceptable false-p a minimum of 5% of all total coliform-positive s ndo Membrane Filter Tests, Standard Total Coli ative-rates may be based on lactose fermentation mation tests. False-positive and false-negative | sitive and negati tive rates within ositive or negativ amples, except f form Fermentation the rapid test for information is of | ve rates for the metho their own laboratory a ve rate, another metho or those methods whe on Technique, and Pre or B-galactosidase and ten available in publis | ds(s) they use for m and sample matrix (d d can be used. The re verification/confi essence-Absence Col- l cytochrome oxidas hed studies and/or f | onitoring total coliforms. EPA also drinking water or source water) with the Agency suggests that laboratories perform rmation is already required, e.g., the M- iform Test. Methods for establishing false- e, multi-test identification systems, or rom the manufacturer(s). | | | |
| 9222 C | Standard Methods | | Standard Methods for the Examination of Water and Wastewater, 18th Edition | 1992 | | | Standard Methods | | | |
| | M Es ht | MI agar also may be used. Preparation and use of MI agar is set forth in the article, "New medium for the simultaneous detection of total coliform and <i>Escherichia coli</i> in water" by Brenner, K.P., et al., 1993, Appl. Environ. Microbiol. 59:3534-3544. EPA/600/J-99/225. Available at: http://www.epa.gov/nerlcwww/online.htm. Verification of colonies is not required. | | | | | | | | |
| | C | oliscan® | is approved as a modification of MI under the . | ATP program. It | is available from Mic | crology Laboratories | s, P.O. Box 340, Goshen, IN 46527-0340. | | | |
| 9222 C | Standard Methods | | Standard Methods for the Examination of Water and Wastewater, 19th Edition | 1995 | | | Standard Methods | | | |
| | M Es ht | II agar al schericht tp://www | so may be used. Preparation and use of MI aga <i>ia coli</i> in water" by Brenner, K.P., et al., 1993, A v.epa.gov/nerlcwww/online.htm. Verification o | r is set forth in th Appl. Environ. M f colonies is not | e article, "New mediu licrobiol. 59:3534-354 required. | um for the simultane 44. EPA/600/J-99/22 | ous detection of total coliform and 5. Available at: | | | |
| | Coliscan® is approved as a modification of MI under the ATP program. It is available from Micrology Laboratories, P.O. Box 340, Goshen, IN 46527-0340. | | | | | | | | | |
| 9222 C | Standard Methods | | Standard Methods for the Examination of Water and Wastewater, 20th Edition | 1998 | | | Standard Methods | | | |
| | M Es ht | II agar al schericht tp://www | so may be used. Preparation and use of MI aga <i>ia coli</i> in water" by Brenner, K.P., et al., 1993, A v.epa.gov/nerlcwww/online.htm. Verification o | r is set forth in th Appl. Environ. M f colonies is not | e article, "New mediu licrobiol. 59:3534-354 required. | um for the simultane 44. EPA/600/J-99/22 | ous detection of total coliform and 5. Available at: | | | |
| | C | oliscan® | is approved as a modification of MI under the . | ATP program. It | is available from Mic | crology Laboratories | s, P.O. Box 340, Goshen, IN 46527-0340. | | | |
| 9222 C | Standard Methods | | Standard Methods for the Examination of Water and Wastewater, 21st Edition | 2005 | | | Standard Methods | | | |
| | M Es ht | II agar al schericht tp://www | so may be used. Preparation and use of MI aga <i>ia coli</i> in water" by Brenner, K.P., et al., 1993, A v.epa.gov/nerlcwww/online.htm. Verification o | r is set forth in th Appl. Environ. M f colonies is not | e article, "New mediu licrobiol. 59:3534-354 required. | um for the simultane 44. EPA/600/J-99/22 | ous detection of total coliform and 5. Available at: | | | |
| | C | oliscan® | is approved as a modification of MI under the . | ATP program. It | is available from Mic | crology Laboratories | s, P.O. Box 340, Goshen, IN 46527-0340. | | | |

| Contaminant | | | Method | EPA Dublication | Publication | |
|-----------------|-------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Method | Organization | ReferenceTitle | Date | Number | Number | Source of Method |
| Total Coliforms | The time from transit. | sample collection to initiation of analysis may no | ot exceed 30 hour | s. Systems are encou | raged but not require | ed to hold samples below 10°C during |
| | EPA strongly a encourages lab intent that if th these studies o Endo and LES positive and ne equivalent con | recommends that laboratories evaluate the false-p oratories to establish false-positive and false-neg e method they choose has an unacceptable false- n a minimum of 5% of all total coliform-positive Endo Membrane Filter Tests, Standard Total Co egative-rates may be based on lactose fermentation firmation tests. False-positive and false-negative | positive and negat gative rates within positive or negati samples, except f liform Fermentation, the rapid test f e information is of | ive rates for the methe their own laboratory ve rate, another metho for those methods who on Technique, and Pr or B-galactosidase an ten available in publi | ods(s) they use for n and sample matrix (od can be used. The ere verification/conf resence-Absence Col d cytochrome oxida shed studies and/or t | nonitoring total coliforms. EPA also drinking water or source water) with the Agency suggests that laboratories perform irmation is already required, e.g., the M- liform Test. Methods for establishing false- se, multi-test identification systems, or from the manufacturer(s). |
| 9222 C-97 | Standard Methods Online | Online version of Standard Methods for the Examination of Water and Wastewater. Approval year by Standard Methods Committee is designated by last 2 digits. This is the only online version that is approved. | | | | http://www.standardmethods.org/ |
| | MI agar <i>Escheric</i> http://w Coliscar | also may be used. Preparation and use of MI ag chia coli in water" by Brenner, K.P., et al., 1993, ww.epa.gov/nerlcwww/online.htm. Verification n® is approved as a modification of MI under the | ar is set forth in the Appl. Environ. Mof colonies is not ATP program. I | ne article, "New medi ficrobiol. 59:3534-35 required. t is available from Mi | um for the simultane 44. EPA/600/J-99/22 | eous detection of total coliform and 25. Available at: s, P.O. Box 340, Goshen, IN 46527-0340. |
| 9223 | Standard Methods | Standard Methods for the Examination of Water and Wastewater, 18th Edition | 1992 | | | Standard Methods |
| | The ON | PG-MUG Test is also known as the Autoanalysis | s Colilert System. | | | |
| 9223 | Standard Methods | Standard Methods for the Examination of Water and Wastewater, 19th Edition | 1995 | | | Standard Methods |
| | The ON | PG-MUG Test is also known as the Autoanalysis | s Colilert System. | | | |
| 9223 | Standard Methods | Standard Methods for the Examination of Water and Wastewater, 20th Edition | 1998 | | | Standard Methods |
| | The ON | PG-MUG Test is also known as the Autoanalysis | s Colilert System. | | | |
| 9223 | Standard Methods | Standard Methods for the Examination of Water and Wastewater, 21st Edition | 2005 | | | Standard Methods |
| | The ON | PG-MUG Test is also known as the Autoanalysis | s Colilert System. | | | |

| Contaminant | | | Method | EPA | Publication | |
|------------------------------|-------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Method | Organization | ReferenceTitle | Date | Number | Order Number | Source of Method |
| Total Coliforms | The time from transit. | sample collection to initiation of analysis may no | t exceed 30 hours | s. Systems are encour | raged but not requir | ed to hold samples below 10°C during |
| | EPA strongly i encourages lab intent that if th these studies o Endo and LES positive and ne equivalent con | recommends that laboratories evaluate the false-po- poratories to establish false-positive and false-nega e method they choose has an unacceptable false-p n a minimum of 5% of all total coliform-positive s Endo Membrane Filter Tests, Standard Total Coli egative-rates may be based on lactose fermentation firmation tests. False-positive and false-negative | sitive and negati- tive rates within ositive or negative samples, except f form Fermentation the rapid test for information is of | ve rates for the method their own laboratory we rate, another method or those methods whe on Technique, and Pro or B-galactosidase and ten available in publis | ods(s) they use for n and sample matrix (od can be used. The ere verification/conf esence-Absence Co d cytochrome oxida shed studies and/or | nonitoring total coliforms. EPA also drinking water or source water) with the Agency suggests that laboratories perform irmation is already required, e.g., the M- liform Test. Methods for establishing false- se, multi-test identification systems, or from the manufacturer(s). |
| 9223 B-97 | Standard Methods Online | Online version of Standard Methods for the Examination of Water and Wastewater. Approval year by Standard Methods Committee is designated by last 2 digits. This is the only online version that is approved. | | | | http://www.standardmethods.org/ |
| | The ON | PG-MUG Test is also known as the Autoanalysis | Colilert System. | | | |
| Chromocult® Coliform Agar | EM Science | Chromocult® Coliform Agar Presence/Absence Membrane Filter Test Method for Detection and Identification of Coliform Bacteria and <i>Escherichia coli</i> in Finished Waters, Version 1.0 | November 2000 | | | EMD Chemicals |
| Colisure Test | IDEXX Laboratories, Inc. | Colisure Test | February 28, 1994 | | | IDEXX Laboratories, Inc. |
| Colitag® | CPI International, Inc. | Colitag® Product as a Test for Detection and Identification of Coliforms and <i>E. coli</i> Bacteria in Drinking Water and Source Water as Required in National Primary Drinking Water Regulations | August 2001 | | | CPI International, Inc. |
| E*Colite® Test | Charm Sciences, Inc. | Presence/Absence for Coliforms and <i>E. coli</i> in Water | December 21, 1997 | | | Charm Sciences, Inc |

| Contaminant Method | Organization | ReferenceTitle | Method Date | EPA Publication Number | Publication Order Number | Source of Method |
|---------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Total Coliforms | The time from transit. | sample collection to initiation of analysis may not | t exceed 30 hours | s. Systems are encoura | aged but not require | ed to hold samples below 10°C during |
| m-ColiBlue24® Test | EPA strongly i encourages lab intent that if th these studies o Endo and LES positive and ne equivalent con Hach Co. | recommends that laboratories evaluate the false-po- poratories to establish false-positive and false-nega ne method they choose has an unacceptable false-p n a minimum of 5% of all total coliform-positive s Endo Membrane Filter Tests, Standard Total Coli egative-rates may be based on lactose fermentation firmation tests. False-positive and false-negative is m-ColiBlue 24 Test, "Total Coliforms and <i>E.</i> <i>coli</i> Membrane Filtration Method with m- | sitive and negati tive rates within ositive or negativ samples, except form Fermentation the rapid test for information is off August 17, 1999 | ve rates for the method their own laboratory a ve rate, another method or those methods when on Technique, and Pre or B-galactosidase and ten available in publist | ds(s) they use for n and sample matrix (d can be used. The re verification/conf esence-Absence Col cytochrome oxidat hed studies and/or the | honitoring total coliforms. EPA also drinking water or source water) with the Agency suggests that laboratories perform irmation is already required, e.g., the M- liform Test. Methods for establishing false- se, multi-test identification systems, or from the manufacturer(s). Hach Company |
| | | ColiBlue 24 Broth," Method No. 10029, Revision 2. | | | | |
| Readycult® Coliforms 100 Presence/Absence Test | EM Science | Readycult [®] Coliforms 100 Presence/Absence Test for Detection and Identification of Coliform Bacteria and <i>Escherichia coli</i> in Finished Waters," Verson 1.0 | November 2000 | | | EMD Chemicals |
| | Fluoroc | ult® is approved as an acceptable version of Read | ycult® under the | ATP program. It is a | vailable from EMD | Chemicals (formerly EM Science). |

| Contaminant | | | Method | EPA Back line time | Publication | |
|------------------|---------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Method | Organization | ReferenceTitle | Date | Number | Number | Source of Method |
| Escherichia coli | The time fro transit. | om sample collection to initiation of analysis may r | not exceed 30 hours | s. Systems are encour | raged but not require | ed to hold samples below 10°C during |
| | EPA strong encourages intent that i these studie Endo and L positive and equivalent o | ly recommends that laboratories evaluate the false- laboratories to establish false-positive and false-ne f the method they choose has an unacceptable false s on a minimum of 5% of all total coliform-positiv ES Endo Membrane Filter Tests, Standard Total Co l negative-rates may be based on lactose fermentati confirmation tests. False-positive and false-negative | positive and negati equative rates within positive or negative re samples, except f oliform Fermentative ion, the rapid test for re information is of | ve rates for the method their own laboratory ye rate, another method or those methods whe on Technique, and Pr or B-galactosidase and ten available in public | ods(s) they use for n and sample matrix (od can be used. The ere verification/conf esence-Absence Co d cytochrome oxida shed studies and/or | nonitoring total coliforms. EPA also drinking water or source water) with the Agency suggests that laboratories perform irmation is already required, e.g., the M- liform Test. Methods for establishing false- se, multi-test identification systems, or from the manufacturer(s). |
| 9222 G | Standard Methods | Standard Methods for the Examination of Water and Wastewater, 19th Edition | 1995 | | | Standard Methods |
| | Alter supp be or •rem of EC •swa •inoc Gent obser Alter descr 4 hor | natively, the 18th edition of Standard Methods may lemented with 50 μ g/mL of 4-methylumbelliferyl-te nitted. Transfer the total coliform-positive culture ove the membrane containing the total coliform col C-MUG (the laboratory may first remove a small pe be entire membrane filter surface with a sterile cotto rulate individual total coliform-positive colonies inte ly shake the inoculated tubes of EC-MUG to insure rve fluorescence with an ultraviolet light (366 nm) matively, the 18th edition (1992) may be used if the ribed in Standard Method 9221 B.3 (18th edition), s arrs and then observe the colony(ies) under ultraviol | y be used for <i>E. col</i> beta-D-glucuronide by one of the follor lonies from the sub ortion of selected co on swab and transfe to EC-MUG. e adequate mixing a in the dark. If fluo e membrane filter c supplemented with let light (366 nm) in | <i>i</i> detection if the folle (MUG) (EC-MUG) I wing methods: strate with a sterile for olonies for verification r the inoculum to the and incubate in a wate rescence is visible, <i>E</i> . ontaining a total colifi 100 μ g/mL of MUG. | by by protocol is us proper autoclaving. The process and carefully n), EC-MUG (do not lease that $44.5 \pm 0.2^{\circ}$ coli are present. Form-positive colony If the 18th edition prence. If fluorescen | ed: at least 10 mL of EC medium is The inner inverted fermentation tube may curl and insert the membrane into a tube eave the cotton swab in the EC-MUG), or C for 24 ± 2 hours. Following incubation, y(ies) is transferred to nutrient agar, as is used, incubate the agar plate at 35°C for ce is visible, <i>E. coli</i> are present. |
| 9222 G | Standard Methods | Standard Methods for the Examination of Water and Wastewater, 20th Edition | 1998 | | | Standard Methods |
| | Alter supp be or •rem of EC •swa •inoc Gent obser | matively, the 18th edition of Standard Methods may lemented with 50 μ g/mL of 4-methylumbelliferyl-t nitted. Transfer the total coliform-positive culture ove the membrane containing the total coliform col C-MUG (the laboratory may first remove a small po- b entire membrane filter surface with a sterile cotto rulate individual total coliform-positive colonies int ly shake the inoculated tubes of EC-MUG to insur- rve fluorescence with an ultraviolet light (366 nm) | y be used for <i>E. col</i> beta-D-glucuronide by one of the follor lonies from the sub ortion of selected co on swab and transfe to EC-MUG. e adequate mixing a in the dark. If fluo | <i>i</i> detection if the follo (MUG) (EC-MUG) I wing methods: strate with a sterile for olonies for verification r the inoculum to the and incubate in a wate rescence is visible, <i>E</i> . | wing protocol is us before autoclaving. rceps and carefully n), EC-MUG (do not le erbath at $44.5 \pm 0.2^{\circ}$ <i>coli</i> are present. | ed: at least 10 mL of EC medium is The inner inverted fermentation tube may curl and insert the membrane into a tube eave the cotton swab in the EC-MUG), or C for 24 ± 2 hours. Following incubation, |
| | Alter descr 4 hou | natively, the 18th edition (1992) may be used if the ibed in Standard Method 9221 B.3 (18th edition), s irs and then observe the colony(ies) under ultraviol | e membrane filter c supplemented with let light (366 nm) in | ontaining a total colif 100 µg/mL of MUG. 1 the dark for fluoresc | Torm-positive colony If the 18th edition sence. If fluorescen | y(ies) is transferred to nutrient agar, as is used, incubate the agar plate at 35°C for ce is visible, <i>E. coli</i> are present. |

| Contaminant Method | Organization | ReferenceTitle | Method Date | EPA Publication Number | Publication Order Number | Source of Method |
|---------------------------------|----------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Escherichia coli | The time from transit. | sample collection to initiation of analysis may no | ot exceed 30 hours | s. Systems are encou | araged but not require | ed to hold samples below 10°C during |
| | EPA strongly r encourages lab intent that if the these studies or Endo and LES positive and ne equivalent conf | ecommends that laboratories evaluate the false-p oratories to establish false-positive and false-neg e method they choose has an unacceptable false- n a minimum of 5% of all total coliform-positive Endo Membrane Filter Tests, Standard Total Co gative-rates may be based on lactose fermentation firmation tests. False-positive and false-negative | positive and negati gative rates within positive or negative samples, except f liform Fermentation on, the rapid test for e information is of | we rates for the meth their own laboratory ve rate, another meth for those methods wh on Technique, and P or B-galactosidase ar ten available in public | nods(s) they use for n and sample matrix (nod can be used. The here verification/conf resence-Absence Co and cytochrome oxida ished studies and/or | nonitoring total coliforms. EPA also (drinking water or source water) with the e Agency suggests that laboratories perform firmation is already required, e.g., the M- liform Test. Methods for establishing false- se, multi-test identification systems, or from the manufacturer(s). |
| 9223/ONPG- MUG (Colilert) | Standard Methods | Standard Methods for the Examination of Water and Wastewater, 18th Edition | 1992 | | | Standard Methods |
| | Edberg, | et.al., Applied and Environmental Microbiology | , 55:1003-1008, 1 | 989. | | |
| | The Aut | oanalysis Colilert System is an MMO-MUG test | | | | |
| 9223/ONPG- MUG (Colilert) | Standard Methods | Standard Methods for the Examination of Water and Wastewater, 19th Edition | 1995 | | | Standard Methods |
| | Edberg, et.al., Applied and Environmental Microbiology, 55:1003-1008, 1989. | | | | | |
| | The Aut | oanalysis Colilert System is an MMO-MUG test | | | | |
| 9223/ONPG- MUG (Colilert) | Standard Methods | Standard Methods for the Examination of Water and Wastewater, 20th Edition | 1998 | | | Standard Methods |
| | Edberg, | et.al., Applied and Environmental Microbiology | , 55:1003-1008, 1 | 989. | | |
| | The Aut | oanalysis Colilert System is an MMO-MUG test | | | | |
| 9223/ONPG- MUG (Colilert) | Standard Methods | Standard Methods for the Examination of Water and Wastewater, 21st Edition | 2005 | | | Standard Methods |
| | Edberg, | et.al., Applied and Environmental Microbiology | , 55:1003-1008, 1 | 989. | | |
| | The Aut | oanalysis Colilert System is an MMO-MUG test | | | | |
| 9223-97/ONPG- MUG (Colilert) | Standard Methods Online Edberg, | Online version of Standard Methods for the Examination of Water and Wastewater. Approval year by Standard Methods Committee is designated by last 2 digits. This is the only online version that is approved. <i>et.al.</i> , Applied and Environmental Microbiology | r, 55:1003-1008, 1 | 989. | | http://www.standardmethods.org/ |
| | The Aut | oanalysis Colilert System is an MMO-MUG test | • | | | |

| Contaminant Method | Organization | ReferenceTitle | Method Date | EPA Publication Number | Publication Order Number | Source of Method |
|-----------------------------------|--------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Escherichia coli | The time from transit. | sample collection to initiation of analysis may not | exceed 30 hour | s. Systems are encou | raged but not require | ed to hold samples below 10°C during |
| | EPA strongly r encourages lab intent that if th these studies or Endo and LES positive and ne equivalent com | ecommends that laboratories evaluate the false-po oratories to establish false-positive and false-nega e method they choose has an unacceptable false-p n a minimum of 5% of all total coliform-positive s Endo Membrane Filter Tests, Standard Total Coli egative-rates may be based on lactose fermentation firmation tests. False-positive and false-negative | ositive and negat tive rates within ositive or negati samples, except form Fermentati n, the rapid test f information is of | ive rates for the meth their own laboratory ve rate, another meth- for those methods wh ion Technique, and Pr for B-galactosidase an ften available in publi | ods(s) they use for n and sample matrix (od can be used. The ere verification/conf resence-Absence Col ad cytochrome oxida ished studies and/or t | nonitoring total coliforms. EPA also drinking water or source water) with the Agency suggests that laboratories perform irmation is already required, e.g., the M- liform Test. Methods for establishing false- se, multi-test identification systems, or from the manufacturer(s). |
| Chromocult® Coliform Agar | EM Science | Chromocult® Coliform Agar Presence/Absence Membrane Filter Test Method for Detection and Identification of Coliform Bacteria and <i>Escherichia coli</i> in Finished Waters, Version 1.0 | November 2000 | | | EMD Chemicals |
| Colisure Test | IDEXX Laboratories, Inc. | Colisure Test | February 28, 1994 | | | IDEXX Laboratories, Inc. |
| Colitag® | CPI International, Inc. | Colitag® Product as a Test for Detection and Identification of Coliforms and <i>E. coli</i> Bacteria in Drinking Water and Source Water as Required in National Primary Drinking Water Regulations | August 2001 | | | CPI International, Inc. |
| E*Colite® Test | Charm Sciences, Inc. | Presence/Absence for Coliforms and <i>E. coli</i> in Water | December 21, 1997 | | | Charm Sciences, Inc |
| Filter Membrane Method with MI | EPA | Brenner, K.P., <i>et.al</i> , Applied and Environmental Microbiology, 59:3534-3544 | 1993 | EPA/600/J-99/225 | | http://www.epa.gov/nerlcwww/online.htm |
| Medium | Coliscar | n® is approved as a modification of MI under the | ATP program. I | t is available from M | icrology Laboratorie | s, P.O. Box 340, Goshen, IN 46527-0340. |

| Contaminant Method | Organization | ReferenceTitle | Method Date | EPA Publication Number | Publication Order Number | Source of Method |
|---------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Escherichia coli | The time from transit. | sample collection to initiation of analysis may not | exceed 30 hours | . Systems are encour | aged but not requir | ed to hold samples below 10°C during |
| m-ColiBlue24® Test | EPA strongly i encourages lab intent that if th these studies o Endo and LES positive and ne equivalent con Hach Co. | recommends that laboratories evaluate the false-po- poratories to establish false-positive and false-nega ne method they choose has an unacceptable false-p n a minimum of 5% of all total coliform-positive s Endo Membrane Filter Tests, Standard Total Coli egative-rates may be based on lactose fermentation firmation tests. False-positive and false-negative is m-ColiBlue 24 Test, "Total Coliforms and <i>E.</i> <i>coli</i> Membrane Filtration Method with m- ColiBlue 24 Broth," Method No. 10029, | sitive and negati tive rates within ositive or negativ samples, except form Fermentation the rapid test for information is off August 17, 1999 | ve rates for the metho their own laboratory a ve rate, another metho or those methods whe on Technique, and Pre or B-galactosidase and ten available in publis | ds(s) they use for n and sample matrix (d can be used. The re verification/conf esence-Absence Co d cytochrome oxida shed studies and/or | nonitoring total coliforms. EPA also (drinking water or source water) with the e Agency suggests that laboratories perform firmation is already required, e.g., the M- liform Test. Methods for establishing false- se, multi-test identification systems, or from the manufacturer(s). Hach Company |
| Readycult® Coliforms 100 Presence/Absence Test | EM Science | Revision 2. Readycult® Coliforms 100 Presence/Absence Test for Detection and Identification of Coliform Bacteria and <i>Escherichia coli</i> in Finished Waters," Verson 1.0 | November 2000 | | | EMD Chemicals |
| | Fluoroc | ult® is approved as an acceptable version of Read | ycult® under the | ATP program. It is a | vailable from EMD | O Chemicals (formerly EM Science). |

| Contaminant Method | Organization | ReferenceTitle | Method Date | EPA Publication Number | Publication Order Number | Source of Method | | |
|-----------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|
| Fecal Coliforms | Public water sy | ystems need only determine the presence or ab | osence of fecal colif | orms; a determination | of fecal coliform de | ensity is not required. | | |
| | When the MTF Technique or Presence-Absence (PA) Coliform Test is used to test for total coliforms, shake the lactose-positive presumptive tube or P-A vigorously and transfer the growth with a sterile 3-mm loop or sterile applicator stick into brilliant green lactose bile broth and EC medium to determine the presence of total and fecal coliforms, respectively. | | | | | | | |
| | When EPA-app •remove the m medium (the la •swab the entir •inoculate indi Gently shake ti amount in the i The time from transit. EPA strongly r encourages lab intent that if th these studies o Endo and LES positive and ne equivalent con | proved total coliform membrane filtration met embrane containing the total coliform colonies aboratory may first remove a small portion of remembrane filter surface with a sterile cottor vidual total coliform-positive colonies into EC he inoculated tubes of EC medium to insure ar- inner fermentation tube of the EC medium ind sample collection to initiation of analysis may recommends that laboratories evaluate the fals poratories to establish false-positive and false-ne emethod they choose has an unacceptable fal n a minimum of 5% of all total coliform-posit Endo Membrane Filter Tests, Standard Total egative-rates may be based on lactose fermenta firmation tests. False-positive and false-negat | thods are used, trans s from the substrate selected colonies fo n swab and transfer of C medium. dequate mixing and licates a positive fec y not exceed 30 hou se-positive and nega negative rates within (se-positive or negat ive samples, except Coliform Fermentati ation, the rapid test tive information is of | fer the total coliform- with a steril forceps a r verification), the inoculum to the Ed incubate in a waterba al coliform test. rs. Systems are encou- tive rates for the meth in their own laboratory ive rate, another meth for those methods wh ion Technique, and P for B-galactosidase ar ften available in publ | positive culture by 6 and carefully curl an C medium (do not le th at 44.5 \pm 0.2 °C f uraged but not require nods(s) they use for r v and sample matrix tood can be used. The nere verification/con resence-Absence Co and cytochrome oxidation is the studies and/or | one of the following methods: d insert the membrane into a tube of EC eave the cotton swab in the EC medium), or or 24 ± 2 hours. Gas production of any red to hold samples below 10°C during monitoring total coliforms. EPA also (drinking water or source water) with the e Agency suggests that laboratories perform firmation is already required, e.g., the M- bliform Test. Methods for establishing false- use, multi-test identification systems, or from the manufacturer(s). | | |
| 9221 E | Standard Methods | Standard Methods for the Examination of Water and Wastewater, 18th Edition | 1992 | | | Standard Methods | | |
| | The preparation of EC medium is described in paragraph 1a. | | | | | | | |
| 9221 E | Standard Methods | Standard Methods for the Examination of Water and Wastewater, 19th Edition | 1995 | | | Standard Methods | | |
| | The pre | paration of EC medium is described in paragra | aph 1a. | | | | | |
| 9221 E | Standard Methods The prej | Standard Methods for the Examination of Water and Wastewater, 20th Edition paration of EC medium is described in paragra | 1998 aph 1a. | | | Standard Methods | | |

| Contaminant Method | Organiza | ation ReferenceTitle | Method Date | EPA Publication Number | Publication Order Number | Source of Method |
|-------------------------|----------------------------------|----------------------------------------------------------------------------|-------------------------|------------------------------|--------------------------------|--------------------------------------|
| Heterotrophic Bac | t eria The tin transit | me from sample collection to initiation of analysis m | ay not exceed 30 hour | s. Systems are enco | uraged but not requir | ed to hold samples below 10°C during |
| 9215 with R2A Medium | Standard Methods | Standard Methods for the Examination of Water and Wastewater, 18th Edition | of 1992 | | | Standard Methods |
| | | Any method in Standard Methods Section 9215, Het drinking water. | terotrophic Plate Cour | it, may be used with | R2A medium, for en | umerating heterotrophic bacteria in |
| | | May be used if public water system operates under a | a variance to the Total | Coliform Rule. | | |
| 9215 with R2A Medium | Standard Methods | Standard Methods for the Examination of Water and Wastewater, 19th Edition | of 1995 | | | Standard Methods |
| | | Any method in Standard Methods Section 9215, Het drinking water. | terotrophic Plate Cour | t, may be used with | R2A medium, for en | umerating heterotrophic bacteria in |
| | | May be used if public water system operates under a | a variance to the Total | Coliform Rule. | | |
| 9215 with R2A Medium | Standard Methods | Standard Methods for the Examination of Water and Wastewater, 20th Edition | of 1998 | | | Standard Methods |
| | | Any method in Standard Methods Section 9215, Het drinking water. | terotrophic Plate Cour | t, may be used with | R2A medium, for en | umerating heterotrophic bacteria in |
| | | May be used if public water system operates under a | a variance to the Total | Coliform Rule. | | |

Contact information for methods that are not available on the Internet are summarized in the report titled "Sources of Approved Analytical Methods for National Drinking Water Regulations."