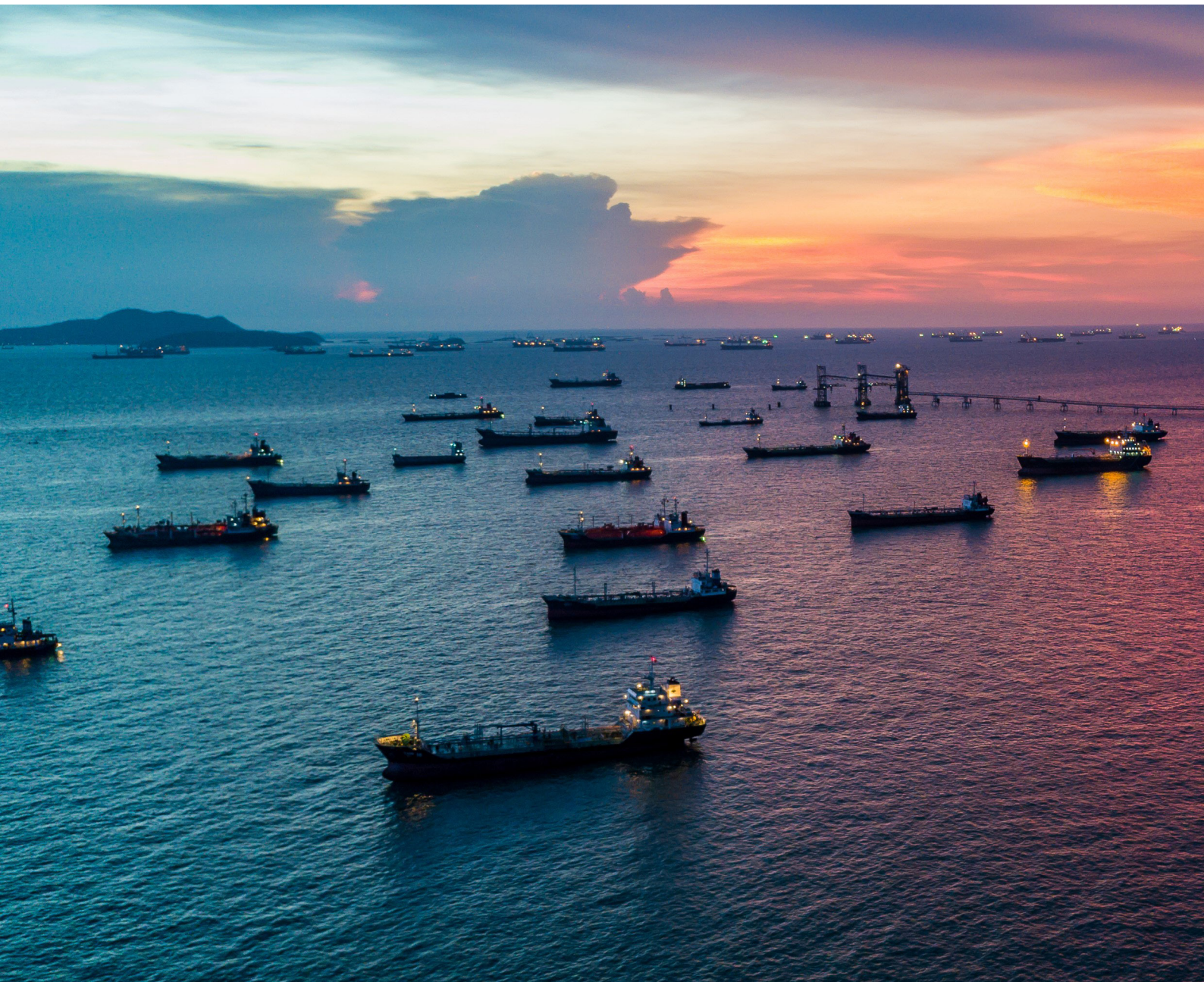


WATER TESTING SOLUTIONS

Marine Sewage Effluent Test Kits



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Introduction

MARPOL Annex IV contains a set of regulations regarding the discharge of sewage into the sea from ships, including regulations regarding the ships' equipment and systems for the control of sewage discharge, the provision of port reception facilities for sewage, and requirements for survey and certification (ISPPC – International Sewage Pollution Prevention Certificate).

MARPOL Annex IV entered into force on the 27th September 2003. All new ships 400 gross tonnage and above; and new ships less than 400 gross tonnage which are certified to carry more than 15 persons must comply with these regulations.

From the 27th September 2008, all existing ships 400 gross tonnage and above; and existing ships less than 400 gross tonnage which are certified to carry more than 15 persons must comply with these regulations.

Regulations

As set out in Annex 22 Resolution MEPC.227(64) adopted on the 5th October 2012, sewage treatment plants installed **prior to 1st January 2010**, on ships other than passenger ships operating in MARPOL Annex IV special areas and intending to discharge treated effluent into the sea, should comply with resolution **MEPC.2(VI) adopted on 3rd December 1976**.

MEPC.2(VI):

Coliforms - up to 250 CFU/100ml
Total Suspended Solids (TSS) (shore test) – up to 50 mg/l
Total Suspended Solids (TSS) (onboard test) – up to 100 mg/l
Biological Oxygen Demand (BOD) – up to 50 mg/l

As set out in Annex 22 Resolution MEPC. 227(64) adopted on the 5th October 2012, sewage treatment plants installed **prior to 1st January 2016 and on or after 1st January 2010**, on ships other than passenger ships operating in MARPOL Annex IV special areas and intending to discharge treated effluent into the sea, should comply with resolution **MPEC.159(55) adopted on 13th October 2006**.

MEPC.159(55)

Coliforms – up to 100 CFU/100ml
Total Suspended Solids (TSS) – up to 35 mg/l
Biological Oxygen Demand (BOD) – up to 25 mg/l
Chemical Oxygen Demand (COD) – up to 125 mg/l
pH – between 6.0 – 8.5
Chlorine (Free) – up to 0.5 mg/l

As set out in Annex 22 Resolution MEPC. 227(64) adopted on the 5th October 2012, sewage treatment plants installed **on or after 1st January 2016**, on **ships other than passenger ships**, in all areas; and passenger ships outside MARPOL Annex IV special areas and intending to discharge treated effluent into the sea, should comply with resolution **MPEC.159(55) adopted on 13th October 2006**.

MEPC.159(55)

Coliforms – up to 100 CFU/100ml
Total Suspended Solids (TSS) – up to 35 mg/l
Biological Oxygen Demand (BOD) – up to 25 mg/l
Chemical Oxygen Demand (COD) – up to 125 mg/l
pH – between 6.0 – 8.5
Chlorine (Free) – up to 0.5 mg/l

As set out in Annex 22 Resolution MEPC.227(64) adopted on the 5th October 2012, for **new passenger ships** when operating in a MARPOL Annex IV area and intending to discharge treated sewage effluent into the sea **on or after 1st January 2016**, and **existing passenger ships on or after 1st January 2018**, should comply should comply with resolution **MEPC.159(55) adopted on 13th October 2006** and the following additional effluent tests:

MEPC.159(55)

Coliforms – up to 100 CFU/100ml

Total Suspended Solids (TSS) – up to 35 mg/l

Biological Oxygen Demand (BOD) – up to 25 mg/l

Chemical Oxygen Demand (COD) – up to 125 mg/l

pH – between 6.0 – 8.5

Chlorine (Free) – up to 0.5 mg/l

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MEPC.227(64)

Total Nitrogen – up to 20 mg/l

Total Phosphorus – up to 1 mg/l

NOTE: A passenger ship means a ship which carries more than twelve passengers.

NOTE: A passenger means every person on board other than:

The master and the members of the crew or other persons employed or engaged in any capacity on board a ship on business of that ship; and a child under one year of age.



WTS-K100778 Sewage Effluent Test Kit 1

(Complies with MEPC.2(VI))

(Sewage Treatment Plants Installed Prior to 1st January 2010)

1 x Marine Heavy Duty Case & Foam Set

12 x Coliform Bacteria Test (0 – 2424 CFU/100ml)

1 x Total Suspended Solids Test (5 – 500 mg/l) (Unlimited Tests)

1 x Biological Oxygen Demand Test (7.5 – 255 mg/l) (Unlimited Tests)

1 x Spirit Thermometer

1 x Digital Incubator (110v/240v)

WTS-K100779 Sewage Effluent Test Kit 2

(Complies with MEPC.159(55))

(Sewage Treatment Plants Installed After 1st January 2010 & Prior to 1st January 2016)

(Sewage Treatment Plants Installed After 1st January 2016 (on ships other than passenger ships & passenger ships operating outside MARPOL Annex IV areas))

1 x Marine Heavy Duty Case & Foam Set

12 x Coliform Bacteria Test (0 – 2424 CFU/100ml)

1 x Total Suspended Solids Test (5 – 500 mg/l) (Unlimited Tests)

1 x Biological Oxygen Demand (BOD) Test (7.5 – 255 mg/l) (Unlimited Tests)

1 x Chemical Oxygen Demand (COD) Test (0 – 300 mg/l) (100 Tests)

1 x pH Test Strips (4 – 10 pH) (100 Tests)

1 x Chlorine (Free) LR Comparator Test (0 – 1 mg/l) (100 Tests)

1 x Chlorine (Free) Drop Test (0 – 30 mg/l) (100 Tests)

1 x Spirit Thermometer

1 x Digital Incubator (110v/240v)

WTS-K100791 Sewage Effluent Test Kit 3

(Complies with MEPC.159(55) & MEPC.227(64))

(New Passenger Ships from the 1st January 2016 & Existing Passenger Ships from the 1st January 2018 operating within MARPOL Annex IV areas)

1 x Marine Heavy Duty Case & Foam Set

12 x Coliform Bacteria Test (0 – 2424 CFU/100ml)

1 x Total Suspended Solids Test (0 – 750 mg/l) (Unlimited Tests)

1 x Biological Oxygen Demand (BOD) Test (7.5 – 255 mg/l) (Unlimited Tests)

1 x Photometer

1 x Chemical Oxygen Demand (COD) Test (0 – 400 mg/l) (25 Tests)

1 x pH Test (4 – 10 pH) (100 Tests)

1 x Chlorine (Free) LR Test (0 – 1 mg/l) (100 Tests)

1 x Chlorine (Free) Drop Test (0 – 30 mg/l) (100 Tests)

1 x Total Nitrogen Test (0.5 – 25 mg/l) (25 Tests)

1 x Total Phosphorus Test (0 – 2.6 mg/l) (25 Tests)

1 x Spirit Thermometer

1 x Digester Unit (For COD, Total Nitrogen & Total Phosphorus Test)

1 x Digital Incubator (110v/240v)

WTS-K100814 Budget Sewage Effluent Test Kit

- 1 x Marine Heavy Duty Case & Foam Insert
- 10 x Coliform/TVC Bacteria Dip Slides (0 – 100,000 CFU/ml)
- 1 x Total Suspended Solids Test (5 – 500 mg/l) (Unlimited Tests)
- 1 x Biological Oxygen Demand (BOD) Test (7.5 – 255 mg/l) (Unlimited Tests)
- 1 x Chemical Oxygen Demand (COD) Test (0 – 300 mg/l) (100 Tests)
- 1 x Chlorine (Free) LR Comparator Test (0 – 1 mg/l) (100 Tests)
- 1 x Chlorine (Free) Drop Test (0 – 30 mg/l) (100 tests)
- 1 x Universal PH Comparator Test (4 – 11 PH) (100 Tests)
- 1 x Spirit Thermometer



WTS-K101538 Sewage Effluent Residual Chlorine Test Kit

- 1 x Marine Heavy Duty Case & Foam Insert
- 1 x Chlorine (Free) LR Comparator Test (0 – 1 mg/l) (100 Tests)
- 1 x Chlorine (Free) Drop Test (0 – 30 mg/l) (100 tests)

WTS-K101147 Sewage Effluent Permanganate Value Test Kit

- 1 x Marine Heavy Duty Case & Foam Insert
- 1 x Permanganate Value Tablets (300)
- 3 x Acidifying SE Tablets (100)