

SEWAGE EFFLUENT KIT MAX

Simplified Onboard Sewage Water Testing

SIMPLICITY IN SEWAGE WATER TESTING

This all in one portable water testing solution makes compliance with complex sewage discharge legislation easy. The Sewage Effluent Test Kit is designed to provide you with simple test methods which are guaranteed to be the most economical you will find - or your money back. The kit requires no formal training and is the only all in one solution to guarantee complete compliance with the MLC 2006 & MARPOL ANNEX IV onboard water testing legislation. Our spares service means you only buy the full kit once and then replace what you use. This means you'll reduce waste whilst reducing costs. **Existing DrinkSafe™ customers can purchase the standard kit to save on repeat buying incubators.**

THE LEGISLATION

MARPOL Annex IV, as adopted in resolution MEPC.115(51), which entered into force on 27th September 2008, applies to ships on international voyages which are either 400gt and greater or less than 400gt when certified to carry more than 15 persons, which includes passengers and crew. **Non-compliance or failed inspections can result in vessel detention.** Your sewage treatment plant will determine whether you need to abide by MEPC.2(VI) or MEPC.159(55):

All vessels will need to maintain the system in line with the effluent standards or risk detention. **The Martek Marine Effluent Test Kit provides simple tests for Permanganate Value, Ph, Suspended Solids, Probable BOD, COD & TOC.** Crews who carry out regular testing will be able to take corrective action which will keep efficiency high whilst keeping down-time to a minimum and reducing costs.

The sewage water testing legislation was introduced as the discharge of raw sewage into the sea can create a health hazard, while in coastal areas sewage can also lead to oxygen depletion and an obvious visual pollution. Depending on your vessel you will need to test you sewage effluent discharge quality for the following:

MEPC.2(VI):

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

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

SEWAGE EFFLUENT KIT MAX

Technical Specifications

SIZE & WEIGHT

35 x 31 x 10cm
1.60kg

KIT CONTENTS

Hard carry case
Acidifying SE tablets (x300)
Permanganate Value tablets (x300)
Universal pH tablets (x100)
Sterile sample containers (100ml, x3)
Plastic test tubes (10ml, x2)
Turbidity tube (13 inches)
Test tube brush (12cm)
Thermometer (x1)
DPD free Chlorine (x500)
PH Comparator disk 0-5mg (x1)
Incubator (x1)
Coliforms tests (x25)
Disposable gloves (x100)
Goggles (x1)
Crushing rods (pack of 10)
Bacterial plates (pack of 4, x10)

TURBIDITY AND SUSPENDED SOLIDS

The Turbidity test uses a specially calibrated plastic tube. Test kit SP 304 includes a tube graduated at 30 to 500 turbidity units.

The Royal Commission Standards for Effluents recommend that the suspended solids content of sewage effluent should not be more than 30 mg/l.

TEMPERATURE

Effluent discharge should always be close to ambient temperatures.

COLIFORMS

The coliform test is carried out by taking a sample of your sewage effluent and adding Sodium Thiosulphate and readycult. Once thoroughly shaken, you incubate the sample for 24 hours and 35°C. You then check for a colour change in the effluent sample, a change to blue/green indicates a presence of coliforms. Log result as present or absent.

BACTERIA PLATE TEST

Take a small 1ml effluent sample and place it on the bacterial plate. Incubate the sample at 35°C for 48 hours and simply count the number of red colonies on the plates surface. You are looking for a result less than 100/250 CFU/ml depending on the vessel.

FREE CHLORINE

Take a sample of your sewage effluent, add a crushed DPD 1 tablet and comparing the sample effluent against the chlorine comparator disc.

PERMANGANATE VALUE (PV)

The Permanganate Value test is a test for indicating the general quality of final effluents as to its acceptability for discharge.

PV of 0-10 = Excellent
PV of 10-20 = Satisfactory
PV of 20-30 = Dubious
PV of over 30 = Unsatisfactory

PH TEST

The pH test is carried out with a Universal pH test tablet and a comparator wheel. The pH of final effluents should also fall within the 6 to 8.

BOD, COD AND TOC

To convert the Permanganate Value (PV) for domestic sewage and effluent to probable BOD, COD and TOC values multiply by the following factors.

	Sewage	Effluent
Probable BOD	PV x 5	PV x 1.5
Probable COD	PV x 10	PV x 7
Probable TOC	PV x 3	PV x 2

The probable BOD can be calculated from the result of the turbidity test using the following formula:

$$\text{Probable BOD} = \text{Turbidity}/2 + 5$$

The Royal Commission Standard for Effluents recommends a BOD value of not more than 20 mg/l.

Subject to adjustments and updates. Martek Marine Ltd standard Terms & Conditions apply E & O E

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