

## BUSOL SEA-CLEAN

### INTRODUCTION

Another proved and worthwhile BUSOL SEA-CLEAN product, especially developed for tank cleaning on board of tankers, where there no facilities to build up a closed recirculation circuit.

### APPLICATION

BUSOL SEA-CLEAN is a very active liquid detergent with excellent cleaning, wetting and emulsifying characteristic, to be used for effective and economical tank cleaning in the following cases:

1. For cleaning from crude or black oil for gas free certificate and hotwork.
2. For periodical maintenance purpose during ballast voyage to keep sludge formation doen to a minimum (this more especially for bottom cleaning of mammoth tankers)
3. For changing from crude or black oils to light mineral oil.
4. For changing from black or mineral oils to grain.
5. For changing from mineral oil to edible oils.

For tank cleaning a mentioned under 3, 4, and 5, BUSOL SEA-CLEAN mostly used in combination with OGR used for spotcleaning.

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### HOW TO USE BUSOL SEA CLEAN

#### *Direct injection method*

Mix the BUSOL SEA-CLEAN skimpy by mean of an air operated drum pump or by gravity feed directly from 200 liters drum into the existing mechanical tank wash system.

Dosing per ration of 1-2 liters BUSOL SEA-CLEAN per 100 liters water.

There are three methods to inject BUSOL SEA-CLEAN into the mechanical tank wash system.

1. The gravity feed method
2. Inject the chemical BUSOL SEA-CLEAN withan air operated plunger pump from a 200 liters, drum via chemical feed hose connected to the suction side of the tank wash pump and control injection rate by means of a small needle valve fitted on the delivery side of the drum pump. In both cases mentioned under 1 (and 2) the drum with BUSOL SEA-CLEAN is placed on the deck near the engine room.

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3. Inject the BUSOL SEA-CLEAN directly into the tank wash line on deck. This method is preferred for tank cleaning at sea and practiced by Busol Marine Tank Cleaning Supervisors  
**BUSOL SEA-CLEAN**

is very suitable product to be used by tank cleaning stations as well as tanker outfits e.g. Busol tank washer butter wroth, victor pirate and sale & wicander "unclean"

### ***Recirculation method***

It is advised to use a solution of 1-2% i.e. 10-20 litres per ton wash water mixed in the tank to be cleaned.

Dose rates and results will vary depending on contamination, the temperature of the cleaning solution, and number of tanks to be cleaned with the solution. Best results are obtained when water is heated to a temperature between 65-80 °C.

Hand spraying method

Use BUSOL SEA-CLEAN undiluted on the bulkheads, frames, stringers etc., using a spray gun. After pre-determined reaction time, rinse the tanks with water, using automatic tank-cleaning machines. For spotcleaning hand, using a hose for rinsing.

BUSOL SEA-CLEAN can Be used by

When applying these methods, the tanks must be gas-free before entering the tanks.

### ***Rock and Roll method***

Cleaning of double bottom tanks during voyages.

1. Heat the remaining fuel in tank, trimming the vessel as required to assist in stripping tank.
2. Flush tank with sea water, stripping constantly.
3. After flushing, ensure all suction and discharge valves in the engine room are closed.
4. Add first dosage of BUSOL SEA-CLEAN to tank. Use 10 to 20 lt. of Busol Sea-Clean per 1000 lt. tank capacity. Fill tank to 25% capacity with seawater and apply heating where possible (up to 60 °C maximum). Maintain for 24 hours.
5. Fill tank to 95% capacity with seawater. Apply heating to 60 °C maximum, if available, and maintain for 48 to 72 hours. If the sea is calm fill up the tanks enough for the solution to be in contact with the overheads.
6. Discharge and strip tank. Fill to 50 to 60% capacity with sea water and allow 2 hours rinsing time.
7. Discharge tank and strip, flushing tank with sea water for 2 hours, stripping continuously. When completed, inspect tank to ascertain if second cleaning is required. If so:
8. Add second dosage of Busol Sea-Clean to tank (10 to 15 lt. per 1000 lt. tank capacity). Fill tank with seawater to 90-95% capacity and apply heating to 60 °C maximum, where available. Maintain for 48 to 72 hours.
9. Discharge and strip tank, flush with sea water, stripping continuously for 2 hours.
10. To gas-free, fill tank with sea water to overflow through vents and sounding pipes,

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discharge and strip completely.

### Cleaning Cargo Tanks Using Tank Cleaning Machines

Apply BUSOL SEA-CLEAN to tank surfaces using fixed and portable tank cleaning machines such as Butterworth type. BUSOL SEA-CLEAN may be prepared in a solution tank or, if possible, injected by metering pump into the fresh water. Recommended concentration is 2 lt. Busol Sea-Clean to 1000 lt. of water. The tanks should be stripped continuously while washing.

Depending on the state of soiling a concentration of 1 to 2 lt. of Busol Sea-Clean for 1000 lt. of water is used as follows:

1. Calculate the volume of water required to fill the bilge to a depth which will ensure all areas to be cleaned will be covered.
2. Determine the quantity of BUSOL SEA-CLEAN needed to give required solution strength.
3. Apply BUSOL SEA-CLEAN to the area to be covered then fill with water to give required depth.
4. Vessel's motion should ensure mixing of solution and will provide cleaning agitation. Allow at least 24 hours agitation time.
5. Pump bilge dry, flush down and repeat if necessary.

### Rock And Roll Cleaning Dosage Chart

Tank Capacity		Sea-Clean proportion			
(ton)	(liters)	Condition	Min	Normal	Max
	2,5				
	5				
	10				
	15				
	20				
	25				
	30				
	40				
	50				
	75				
	100				
	200				
	250				

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300	
400	
500	
600	
700	
800	
900	
1000	2
4	
8	
12	
16	
20	
24	
32	
40	
60	
80	
160	
200	
240	
320	
400	
480	
560	
640	
720	
800	
4	
8	
16	
24	
32	
40	
48	
64	
80	
120	
160	
320	
400	
480	
640	
800	
960	
1120	

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1280
1140
1600
6
12
24
36
48
60
72
96
120
180
240
480
600
720
960
1200
1440
1680
1920
2160
2400