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**MARIGASES**

SERVICES

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## **Cargo Hold Cleaning Guide**

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# CARGO HOLD CLEANING CHART

# WATER BALLAST TANK CLEANING CHART



## 1. CARGO HOLD CLEANING CHART

CARGO	SUGGESTED CLEANING PRODUCT	CLEANING PROCEDURE	CHEMICAL SOLUTION	
			Butterworth	Sprayer
ANIMAL OIL	ALCACTIVE LIQUID or MARICLEAN DG-25	B / C	0,1 - 0,5 %	10 - 25%
AROMATIC EXTRACTS	TANK CLEANER-S or MARICHEM TTC	B / C	0,1 - 0,5 %	11 - 25%
ASPHALT	MARICHEM TTC	B / C	0,1 - 0,5 %	50 - 100%
BAUXITE	BAUXITE REMOVER	C		10 - 20%
BROWN COAL BRIQUETTES	ALCACLEAN H.D.	C		10 - 50%
BUTANOL	ALCACLEAN H.D.	B / C	0,1 - 0,5 %	10 - 50%
CEMENT	CEMENT REMOVER	C		10 - 40%
CEMENT CLINKERS	CEMENT REMOVER	C		10 - 40%
CHEMICALS & SOLVENTS	MARICLEAN DG-25	B / C	0,1 - 0,5 %	10 - 50%
CHLOROFORM	MARICLEAN DG-25	B / C	0,1 - 0,5 %	10 - 50%
CHROME ORE	ALCACTIVE LIQUID	C		10 - 50%
CLAY	ALCACTIVE LIQUID	C		10 - 50%
CRUDE OIL	MARPER	B	0,1 - 0,5 %	10 - 50%
COAL	ALCACLEAN H.D.	C		10 - 50%
CUMENE	TANK CLEANER-S or MARICHEM TTC	B	0,1 - 0,5 %	10 - 50%
DOLOMITE	LIME CLEANER	C		10 - 40%
ETHANOL	ALCACTIVE LIQUID	B / C	0,1 - 0,5 %	10 - 30%
FATS	ALCACTIVE LIQUID or MARICLEAN DG-25	C		10 - 30%
FATTY ALCOHOLS	TANK CLEANER or MARICLEAN DG-25	B / C	0,1 - 0,5 %	10 - 50%
FISH OIL	ALCACTIVE LIQUID	B / C	0,1 - 0,5 %	10 - 30%
FORMALDEHYDE	GENERAL CLEANING & SOLVENT	B / C	0,1 - 0,5 %	10 - 50%
FUEL OIL	TANK CLEANER-S or MARICHEM TTC	B / C	0,1 - 0,5 %	10 - 50%
GAS OIL	TANK CLEANER or MARICLEAN DG-25	B	0,1 - 0,5 %	10 - 50%
GREASE	OIL & GREASE REMOVER HD 999	C	0,1 - 0,5 %	10 - 50%
GYPSUM	LIME CLEANER	C		10 - 50%
HEAVY MINERAL OIL	ALCACLEAN H.D.	C		10 - 50%
IRON ORE	RUST REMOVER	C		10 - 50%
KEROSENE	MARICLEAN DG-25	B / C	0,1 - 0,5 %	10 - 50%
LIGHT MINERAL OIL	MARICLEAN DG-25	B / C	0,1 - 0,5 %	10 - 30%
LIME	LIME CLEANER	C		10 - 50%
LIMESTONE	LIME CLEANER	C		10 - 50%
LUBRICATING OIL	ALCACLEAN H.D.	B / C	0,1 - 0,5 %	10 - 50%
MANGANESE ORE	MARICLEAN DG-25	C		10 - 50%
MINERAL CONCENTRATES	ALCACLEAN H.D.	B / C	0,1 - 0,5 %	10 - 50%
ODOR REMOVER	ALCACTIVE LIQUID	C	0,1 - 0,5 %	2 - 5%
PARAFFINS	MARICHEM TTC	B / C	0,1 - 0,5 %	10 - 50%
PETROLEUM COKE (PET COKE)	MARICHEM P.C.S.	C		50 - 100%
POTASH	WATER	A		
SALT	WATER	A		
SOLVENT NAPHTHA	MARICLEAN DG-25	B / C	0,1 - 0,5 %	10 - 50%
SOYA BEAN OIL	ALCACTIVE LIQUID	C		10 - 50%
SULPHURIC ACID	WATER	A		
SUNFLOWER SEED OIL	MARICLEAN DG-25	C		10 - 50%
TOLUENE	WATER	A		
TURPENTINE	MARICLEAN DG-25	B / C	0,1 - 0,5 %	10 - 50%
VEGETABLE OIL	ALCACTIVE LIQUID/ALCACLEAN H.D.	C		10 - 50%

## 2. WATER BALLAST TANK CLEANING CHART

TYPE OF CONTAMINATION	SUGGESTED CLEANING PRODUCT	CLEANING PROCEDURE	CHEMICAL SOLUTION
PETROLEUM CONTAMINATION	TANK CLEANER / TANK CLEANER - S / MARICHEM TTC	D	Please check Paragraph D.i
MUD CONTAMINATION	MUD CONDITIONER	D	

### \*\*\*\*Highly Recommended\*\*\*\*

To prevent the cleaning solution running directly from the vertical surfaces add 5 litres FOAM PLUS (product code 830543) per 210 liters of the MARICHEM P.C.S., ALCACLEAN H.D or ALCACTIVE LIQUID washing solution. FOAM PLUS may be used in aqueous solutions, with the above mentioned chemical products, so that during the application procedure, the final product is applied in the form of foam by a high pressure machine or a regular air powered paint-spray thick nozzle unit. This will increase the resident time and improve efficiency during the cleaning process.

**Other MARICHEM MARIGASES cleaning products are available for all types of cargoes. If the cargo of interest is not listed above, please consult MARICHEM MARIGASES Worldwide Services in order to recommend the relevant cleaning product from our product range.**

# CARGO HOLD CLEANING GUIDE

## PROCEDURES OF TANK CLEANING

### PROCEDURE A

1. Remove all deposits and residues.
2. Wash the cargo hold with cold sea water or fresh water.
3. Wash down with warm water using High Pressure Machine and check results.
4. Repeat the procedure if necessary. (No need for using chemicals).

### PROCEDURE B (RECIRCULATION WITH BUTTERWORTH)

1. Wash the tanks to be cleaned with warm water using the Butterworth.
2. Remove all deposits and residues.
3. Apply the chemical solution through the Butterworth.
4. Depending on contamination and temperature/moisture conditions, the cleaning time generally varies between 30 minutes to 120 minutes, sometimes more if required.
5. After the application, rinse with sea water or fresh water (preferably hot water at 50°C - 80°C) and check the results.
6. To remove odor, the tank may be cleaned with warm sea water for 1-2 hours injecting 0,1% ALCACTIVE LIQUID.

#### B.i. Formula\* of estimating the quantity of chemicals to be used.

The estimate quantity of cleaning chemicals

$$Q = N \times T \times F \times D$$

Q : Quantity of cleaning chemical in litres

N : Number of machines in use

T : Time per machine in use in hours

F : Flow of each machine in tons per hour

D : Dosage rate of chemical in litres per ton of water

\* This formula is optional for the customer's convenience, however it may not be always necessary in order to calculate the quantity of chemical to be used. For further information please consult **MARICHEM MARIGASES Worldwide Services**.

### PROCEDURE C (SPRAY/INJECTION)

1. Remove all deposits and residues.
2. Wash the cargo hold with cold sea or fresh water (using the fire line pipe).
3. Spray with a suitable equipment directly to the contaminated area and let it soak for 20-30 minutes. Do not allow the surface to dry during this process. For general cleaning application, chemicals may be used by brushing, soaking or any other methods allowing 1 liter per 12 m<sup>2</sup> of contaminated surface.
4. Wash thoroughly with cold water (preferably with the use of a High Pressure Machine) and check the results.
5. Repeat the procedure on any areas that need additional cleaning, if necessary.

### PROCEDURE D "ROCK 'N' ROLL"

(For Water Ballast Tank Cleaning only)

1. Fill the tank with the necessary quantity of chemical undiluted and allow it to act for 2 - 6 hours.
2. Fill the tank with seawater to 30% (for double bottom tanks 40-50%) of total capacity and let the solution stand for 1-2 days.
3. Fill the tank with seawater to 60% (for double bottom tanks 75%) of total capacity and let the solution stay for at least 2- 3 days.
4. Discharge solution from tank and then rinse off by filling tank with seawater.

#### D.i. Method of calculating the quantity of Tank Cleaner, Tank Cleaner S and Marichem TTC versus tank capacity.

The quantity of suitable chemical product to be used is proportional to the tank capacity and the level of contamination.

BALLAST TANK CAPACITY (tones)	Tank cleaner quantity (litres)		
	Degree (level) of contamination		
	MINIMUM	NORMAL	MAXIMUM
2.5	2	4	6
5.0	4	8	12
10.0	8	16	24
15.0	12	24	36
20.0	16	32	48
25.0	20	40	60
30.0	24	48	72
40.0	32	64	96
50.0	40	80	120
75.0	60	120	180
100.0	80	160	240
200.0	160	320	480
250.0	200	400	600
300.0	240	480	720
400.0	320	640	960
500.0	400	800	1,200
600.0	480	960	1,440
700.0	560	1,120	1,680
800.0	640	1,280	1,920
900.0	720	1,440	2,160
1,000.0	800	1,600	2,400



## NOTICE TO READER

During 1996, chemical tankers were permitted to use only tank cleaning agents, which had been evaluated and approved by the **International Maritime Organisation (IMO)**. All **MARICHEM MARIGASES** tank cleaning products presented on this chart were evaluated through IMO's Working Group on the Evaluation of Safety and Pollution Hazards of Chemicals (ESPH Working Group) and found to meet the requirements of paragraph 1.8.2 of the P&A Standards.

## SAFETY AND HANDLING

Handle with care. Store in a dry, cool and well ventilated environment.
<b>IMMEDIATE ACTIONS</b>
Avoid eye contact. Wear suitable eye/face protection. Otherwise, flush with plenty of water for a few minutes. Seek medical attention.
Avoid skin contact. Wear suitable chemical protective suit, chemical protective gloves and chemical protective boots. Otherwise, wash contaminated area thoroughly with water. Seek medical attention.
Do not breathe gas/vapors. Wear suitable respiratory equipment. Otherwise, seek fresh air source at once. Seek medical attention.
Avoid ingestion. Otherwise, seek immediately medical attention.
Avoid spillage, splashing and mishandling. Precautionary measures for body protection are strongly recommended before use of the product.

Read the **Material Safety Data Sheet (MSDS)** and the **Product Data Sheet (PDS)** before using each product.

**MARICHEM MARIGASES** assumes that persons responsible for carrying out cleaning operations are familiar with the guidelines published in **SOLAS**, **ISGOT** and other relevant guides and /or local port restrictions and laws that will pertain to such operations.

Slop water should be pumped ashore or should be pumped to ship's slop tanks after finishing with the cleaning procedure.



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**DISCLAIMER** The information disclosed in this leaflet is believed to be correct at the time of printing. The information supplied is to the best of our knowledge and experience valid. It only relates to the specific products mentioned herein and it may not be valid when the said products are used in combination with any other material or in any other process not specified, unless approved in writing prior to use by Marichem Marigases.

This leaflet aims to provide the necessary health and safety information of each product and is not to be considered a warranty or quality specification.

It is the responsibility of the user to comply with local legislation relating to safety, health, environment and waste management. If in any doubt consult your local technical office.