

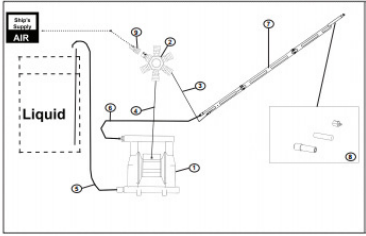



# User manual

 <b>UNITOR™ CARGO HOLD COMPACT KIT - PROD NO. 778955</b> 		
CONTENTS LIST	ASSEMBLY INSTRUCTIONS	OPERATING INSTRUCTIONS
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<p><b>SAFETY INSTRUCTIONS</b></p> <p>1. Read the safety instructions carefully before using the kit.</p> <p>2. Do not use the kit if you are not qualified to use it.</p> <p>3. Do not use the kit in hazardous areas.</p> <p>4. Do not use the kit in areas with high voltage.</p> <p>5. Do not use the kit in areas with high temperature.</p> <p>6. Do not use the kit in areas with high humidity.</p> <p>7. Do not use the kit in areas with high wind.</p> <p>8. Do not use the kit in areas with high noise.</p> <p>9. Do not use the kit in areas with high vibration.</p> <p>10. Do not use the kit in areas with high radiation.</p>		

# UNITOR™ CARGO HOLD COMPACT KIT

Product number: 778955

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## Safety instructions

This user manual must be read and understood before use. If in any doubt, ask your supervisor before using this equipment. Refer to the user manual as a reminder once you are clear about how to operate the equipment.

Always wear Personal Protective Equipment (PPE), including eye protection, chemical resistant suit, safety rubber boots and gloves, and ear defenders.

Wear a full facemask or breathing apparatus when using aggressive chemicals, referring to chemical Safety Data Sheet (SDS).

Be aware that this tool is not electrically insulated. Do not aim the water jet at any electrical plugs or sockets.

Read the chemical SDS and the full user manual before operation. Be aware that this tool can create a mist and flying debris.

Be aware of others working around you.


Always flush the equipment with fresh water after use and before storage.


Aggressive chemicals will harm the equipment if it is not flushed with fresh water between cleaning of each hold, after cleaning and before storage.

**Always observe safe-working practices at all times.**



- Do not use air pressure above maximum working pressure of 8 bar (116 psi).
- Do not modify this tool in any way as this will invalidate the warranty and could also lead to serious injury or death.
- Do not point the Lance at any person, this is extremely dangerous.
- Do not use the tool if you become tired, this can lead to physical strain or injuries.
- Do not drag this equipment by the air line or water hose.

**Never** use more than three centre sections on the lance without the guide wire kit being used. 

**Danger:** Unrestrained pressurised hoses can whip dangerously if they become detached. 

**Note:** Care must be taken to avoid damaging or tripping over the trailing water or air hoses.

## Introduction and equipment overview

### Unitor™ Cargo Hold Compact Kit

The Unitor Cargo Hold Cleaning Kit is developed to facilitate cargo change-over on board small to medium/large bulk carriers. The kit consists of all the necessary equipment needed for a complete cleaning operation. It is ready to use in a shockproof plastic container, easy to transport between vessels. The equipment is designed for the application of both Unitor cleaning chemicals, and temporary coatings, as well as rinsing and wash down.

Ensure you follow the instructions and flush when required with fresh water.

#### Technical data

<b>Property</b>	<b>Unit</b>	<b>Value</b>
Recommended air pressure	bar	5-7
Air consumption (max)	m <sup>3</sup> /min	0,6 *
Chemical coverage	m <sup>2</sup> /min	100
Air connection	inch	1/2" hose socket
Shipping size	cm	105 x 130 x 80 (H x W x D)
Weight	kg	32

\* - *lower air volume will reduce the chemical coverage per minute.*

## Ordering information

Unitor™ Cargo Hold Compact Kit **778955**

Consists of:

Component Part	Part Description	Qty per Assembly
749762	PLASTIC CONTAINER 600 LITRE	1
778826	NOZZLE KIT	1
778819	LANCE KIT HANDYMAX	1
778832	COMPACT KIT DOC.PACK	1
778837	COMPACT KIT ASS. INSTR.	1
191866	600 UPH PLUG 3/4" HOSE	1
768481	CLAMP 1 EAR 26,5-30,0MM 3/4" HOSE	0,1
671727	AIR HOSE 3/4", PVC	1
750928	600 HIGH FLOW SH LIQUID CONNECTOR	1
777992	DBL DIAPHRAGM PUMP 1050 POLY	1
729461	HOSE NIPPLES F. 1050 AND 1040 PUMPS	1
634843	HOSE FLANGES SET FOR 1050 POLY	1
193490	UNITOR MEDUSA AIR DISTRIBUTOR	1
191890	40 UPM PLUG 1/2" MALE BSP.T	1
191684	30 USH SOCKET 3/8" HOSE	2
191833	30 UPH PLUG 3/8" HOSE	2
671750	AIR HOSE 3/8", RUBBER	1
768432	CLAMP 1 EAR 15,6-17,8MM 3/8" HOSE	0,25
618595	SUCTION HOSE 1 IN 5 MTR	1
777971	CLAMP 1 EAR 29.3 - 34 MM 1" HOSE	0,05
770909	800 UPM PLUG 1" MALE NPT	1
191700	400 USH SOCKET 1/2" HOSE	1
L785460	EMERGENCY EYE WASH BOTTLE	1
766107	DRUM WRENCH. GREEN W/UNITOR LOGO	1

600 ltr recycled plastic container. The plastic container is approved by the Nordic Ecolabel.



## Long Reach Lance – extendable applicator lance



The Unitor™ Long Reach Lance has been developed in order to facilitate easy and reliable chemical application in cargo holds, and it can also be used with great results on the super structure and ships sides. Using the optional guide wire kit (purchased separately), the extendable lance enables the crew to apply chemicals from the bottom of the. The lance is designed to accommodate different nozzles and can be used for application of both foaming and non-foaming chemicals.

### Technical data

<u>Property</u>	<u>Unit</u>	<u>Value</u>
Length per section	m	1,2
Standard length ( 3 lengths)	m	3 (total 3,6m)
Recommended liquid pressure	bar	5-7
Maximum air pressure	bar m <sup>3</sup> /	8.6 bar
Air Consumption (max)	min m	0.6*
Normal reach		Up to 18m * depending on the nozzle & air supply.

When operated with the Slip-Coat nozzle reach is limited, depending on air supply.

Air connection	inch	3/8" BSP female fitted with Quick connector
Chemical connection	inch	3/4" BSP female fitted with Quick connector
Weight complete	kg	16 (with 3 x extension sections)

## Nozzle selection

- Foam nozzle:** For cleaning chemicals with foaming properties – generates thick foam.
- Standard nozzle:** For all other cleaning chemicals – extends the reach of the spray without foaming. The Standard nozzle can also be used for washing down if needed. The standard nozzle should also be used to apply Slip Coat at elevated areas. Ensure to move steady sideways to avoid too thick layers and to avoid over consumption.
- Slip-Coat nozzle:** For temporary hold coatings – thin and even spray but a very short range. The Standard nozzle can be used for longer reach.



## The 1050 Double diaphragm poly pump



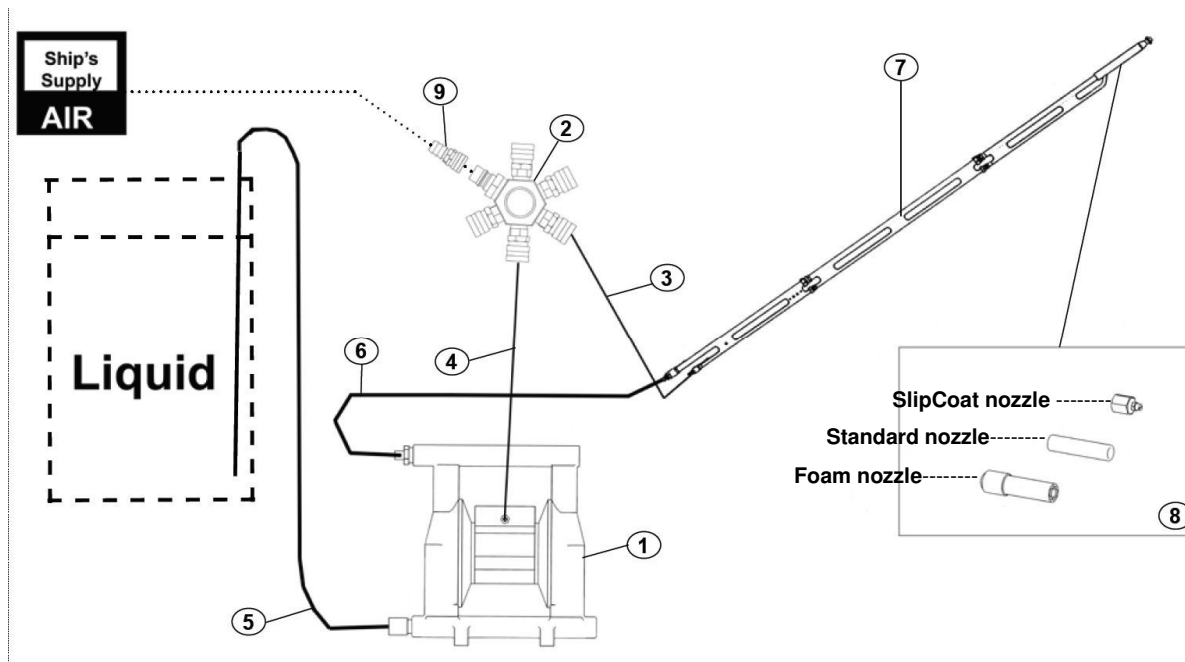
The 1050 DD Poly chemical applicator pump is capable of handling even the toughest cleaning solutions.

The Teflon coated balls and diaphragms ensure long life without the need for servicing. The low air volume required to operate this pump makes it ideal for ships with a small deck compressor.

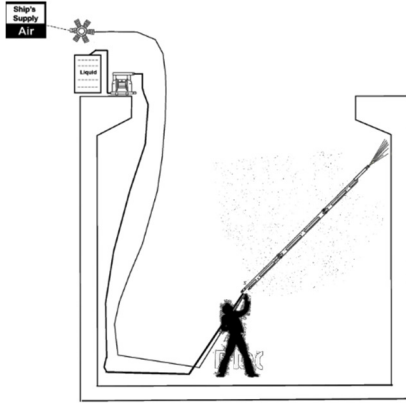
<u>Property</u>	<u>Unit</u>	<u>Value</u>
Operating air pressure	bar	1,4 – 8,6 (recommended 5 – 7 bar)
Maximum fluid / air pressure	bar	8.6
Air consumption (max)	m <sup>3</sup> /min	1,897
Water consumption	l/min	189 (max)
Maximum size pumpable solid	mm	3,2
Air connection	inch	½" npt (f) male fitted with Quick connector
Water connection	inch	1" npt w/connector
Weight	kg	8,2 kg

## Assembly and set-up instructions

**NOTE:** the liquid container shown below is not supplied in the kit. Any empty drum can be used for mixing the chemical solution. Please make sure it has been cleaned in advance!



- Connect the 5m air supply hose (4) to the 1050 Poly Pump (1) and to the air distributor (2).
- Assemble the three sections of the lance.
- Connect the suction hose (5) to the inlet of the pump(1) and place the other end in a suitable container or a drum.
- Connect the yellow liquid hose (6) to the Inlet of the lance (7) and to outlet of the chemical pump (1).
- Connect the air hose (3) to the lance inlet section (7) and the other end to the air distributor (2).
- Fit either the Foam, Standard or Slip Coat nozzle (8) to the Lance (7) front nozzle section and lock with the supplied locknut.
- Connect the ships air supply (1/2" hose - not supplied) to the inlet of the air distributor (2) using the 1/2" quick connector (9).
- Close the inlet valves on the lance (7).
- Insert the liquid suction hose (5) into the 200L drum (the drum is not included in the kit).



The drawing illustrates all equipment connected and in use. It is recommended to place the pump and drum on deck and lower the hoses down to the tank top.

## Maintenance schedule

<b>TASK</b>	<b>AFTER EVERY USE</b>	<b>BETWEEN EACH HOLD</b>	<b>REGULARY (AS REQUIRED)</b>
FLUSH EQUIPMENT (INSIDE / OUTSIDE) *	X	X	X
CHECK THAT ALL COUPLINGS ARE SECURELY CONNECTED	X	X	X
LANCE	X	X	
NOZZLES	X	X	
QUICK CONNECTORS			X
DOUBLE DIAPHRAGM PUMP		X	X

\*If aggressive chemicals are used, flushing with fresh water between cleaning of each hold is mandatory to avoid unnecessary corrosion of the components.

## Cleaning operation

### Step 1 – Dry cleaning

- Sweep and muck out as much residue as possible before any liquid is used for cleaning.

### Step 2 – Cleaning with chemicals

**NOTE:** Always wear personal protection equipment (PPE) when working with chemicals. Refer to the Safety Data Sheet (SDS) for full information. Always fill water in the container before pouring chemical into the tank.

Fresh water is recommended for all cleaning operations.

- Follow all instructions on the chemical product data sheet (PDS) and the Safety Data Sheet (SDS). Premix the chemical solution in an empty clean container. Wear personal protection equipment according to SDS and ensure proper ventilation.
- Use a 200L drum or a similar container (not included in the kit).
- Submerge the suction hose (5) into the drum.
- Start the pumps by opening ships air supply.
- Gradually open the air and chemical ball valves on the lance, adjust both to achieve optimal range and foaming.

**NOTE:** Do not let the chemical dry out on the surface. If chemicals dry out, apply more of the same chemical that dried out to dissolve it.

### Step 3: Wash down of the hold

- We recommend the use of High Pressure cleaner or a Tornado 3 (not supplied in the Compact Kit) for cleaning of the hold, however if this is not available you can use the cargo hold cleaning kit for this purpose as follows:
- Refill the 200 ltr drum with FRESH water.
- Replace the Foam nozzle with the Standard nozzle.
- Flush the surface until no foaming occurs when water hits the surface.

#### Step 4 – Applying temporary hold coating

**NOTE:**

Slip Coat is a ready to use product and must not be mixed with water or diluted.

The air valve on the lance is not to be used during Slip Coat application (for long reach and if use with Standard Nozzle the air valve must be open to ensure sufficient reach).

- Ensure that the drum to be used for Slip-Coat is thoroughly cleaned and rinsed for all chemical residues.
- Insert the Liquid suction hose (5) into the drum filled with Slip-Coat.

**NOTE:** Apply the hold coating in as thin layer as possible. To reach elevated areas it is recommended to use the Standard Nozzle. The consumption increases so the operator must move lance in a fast systematic pattern.

#### Step 5 – Rinsing of equipment

- Refill the drum with FRESH water.

**IMPORTANT!** Pump at least 100L of FRESH water through the whole system including the chemical delivery hose and the lance, as well as all nozzles.

## Recommended accessories

Product	Description	Product no
Cleaning equipment		
HPC 67/1 3~440V / 60 Hz (195 bar / 1200 l/h)	High pressure cleaner	778889
HPC Extreme 520 (500 bar / 1080 l/h)	Ultra high pressure cleaner	721520
10 ltr stainless steel jet sprayer	Chemical applicator	572123
Mucking pump		
VCAD 200 (for cargo residues)	Air driven vacuum cleaner	682054
Tornado 3	Cleaning jet	658229
<i>Cleaning work wear</i>		
Cleaning Boots S5 size 42		571028
Cleaning Boots S5 size 43		571036
Cleaning Boots S5 size 44		571044
Cleaning Boots S5 size 45		571052
Cleaning suit PVC one size		576853

## Chemicals

### **Aquatuff – general purpose strong alkaline cleaner**

Aquatuff is a heavy duty water based alkaline cleaner. It has numerous cleaning applications including removal of greases, waxes, vegetable and animal oils, sludge, soot, carbon deposits, dirt and grime. Aquatuff is also used for cargo hold cleaning after coal and pet coke.

### Directions for use and dose rates

Aquatuff can be used for different types of cleaning, and it can be applied by brush, hand spray, high- and low pressure washing machines etc. It can be applied on vertical surfaces by adding Unitor Foam-Agent (Product no. 614537) for increased resident time.

### Tank and cargo hold cleaning

Aquatuff can be used for tank cleaning after animal, vegetable and fish oil, petroleum waxes, and for cargo hold cleaning after soot, coal, pet coke and other bulk materials.

### Method of Application and Dose Rates

1. Direct injection method with tank washing machines: Use a dose rate of 1-20 litres per ton wash water (0.1-2%).
2. Recirculation method: Use a dose rate of 1-20 litres per ton wash water (0.1-2%).
3. Spot cleaning: Hand spray neat or prepare a 20% solution, and leave for 20-30 minutes before rinsing off with water. The surface should be kept wet. For problem deposits, please consult the Unitor Tank Cleaning Manual.



### Product properties

Appearance:	Orange liquid
Density, in g/cm <sup>3</sup> at 15°C:	1.1
Flash point, (PMCC) in °C:	N/A
pH, in conc:	13

### Compatibility

Metal: The concentrated product may react with aluminum, zinc, tin and their alloys.  
Rubber: No known effect.

### Ordering information

Product no: 607826 (25 litre plastic container)

### Features, benefits and applications

- Heavy duty water based cleaner.
- Does not contain nonyl phenol ethoxylates or other estrogenic compounds.
- Biodegradable.
- Free from hydrocarbon solvents.
- Removal of soot deposits from inert gas systems.
- Aquatuff is most suitable for removal of wax deposits.
- It has numerous cleaning applications including removal of grease, vegetable and animal oil, soot and general dirt and grime.
- Ideal for cleaning after coal and pet coke.
- Effective and economical in use.
- Completely safe on epoxy coatings.
- IMO-approved.
- Approved by Marinfloc AB for use in engine rooms.

Read the Safety Data Sheet (SDS) before using this product.



## Aquatuff High Foam – high foaming alkaline cleaner

Aquatuff High Foam is a heavy duty alkaline cleaner with good foaming qualities specially formulated for cleaning cargo holds on bulk carriers and OBOs. The dense foam created prevents the cleaning solution from running off vertical surfaces and thereby enhances the cleaning efficiency. It is water based and is safe to the environment, containing only biodegradable ingredients. It effectively removes most dry cargoes to “water white standard”. Aquatuff High Foam is specially developed for cargo hold cleaning, but may also be used for other cleaning applications where Aquatuff normally is used but where high foam is beneficial.

### Directions for use and dose rates

Cargo Hold Cleaning Aquatuff High Foam is specially developed to clean vertical surfaces. When applied with the proper spray foam equipment, the dense foam created prolongs the contact time between the cleaning solution and the surface to be cleaned. It effectively removes most dry cargoes, sludge, soot, carbon deposits, fish meal etc., and is used for cargo hold cleaning when going from black to white cargo. Aquatuff High Foam should not be used on zinc coatings, use then Aquabreak PX (Product no. 575613). Method of Application and Dose Rates 1. Apply Aquatuff High Foam mixed 10 to 25% (ratio 1:9 to 1:3) in water, using spray foam equipment.

### Product properties

Appearance:	Orange liquid
Density, in g/cm <sup>3</sup> at 15°C:	1.1
Flash point, (PMCC) in °C:	N/A
pH, in conc:	13

### Compatibility

Metal: The concentrated product may react with aluminium, zinc, tin and their alloys.  
Rubber: No known effect.

### Ordering information

Product no: 736991 (25 litre plastic container)

### Features, benefits and applications

- Heavy Duty alkaline water based cleaner.
- Specially formulated for the cleaning of cargo holds.
- Does not contain nonyl phenol ethoxylates or other estrogenic compounds.
- Biodegradable.
- Free from hydrocarbon solvents.
- Ideal for cleaning after coal, pet coke and other difficult cargoes. Effective and economical in use.
- Completely safe on epoxy coatings.
- Complies with all environmental regulations and the EU Detergent Regulation.

Read the Safety Data Sheet (SDS) before using this product.



## **Slip-Coat – temporary cargo barrier**

Slip-Coat is a water based liquid product specially formulated to leave a thin, temporary film on cargo hold surfaces. The film provides a barrier between the cargo and the cargo hold surfaces making the cleaning operation after unloading quicker and easier, and optimal cleaning result is achieved. Slip-Coat is safe to the environment and to the personnel handling it, and will not contaminant the cargo. It is non-corrosive and safe on all coatings.

### How it works

After drying, Slip-Coat creates a thin, non-sticky film on the cargo hold surfaces. The film substantially facilitate the cleaning before next cargo in two ways: 1. The film fills the minute pores in the surface, and prevents that small particles are trapped in the pores. 2. Small, solid particles can be very difficult to remove especially from organic coatings, even with the use of effective cleaning agents and high pressure water jets. The reason is the build-up of electromagnetic forces, and sometimes the only way to remove the particles is by scrubbing. Slip-Coat provides a barrier between the particles and the surface that minimize this problem, and the particles may now be removed with high pressure water only. The film is completely water soluble and is easy to remove even with cold sea water. To avoid re-deposition of contaminants a cleaning agent should be used, but at lower dosage rates than what normally is required. Slip-Coat may also be sprayed on deck, superstructure and other areas exposed to dust during loading and unloading operations.

### Directions for use and dose rates

The cargo hold surfaces should be as clean and dry as possible before treatment. Slip-Coat is supplied at ready-to use concentration and may be applied directly from the drum. Spray the liquid on the cargo hold surfaces by the use of suitable low- pressure spraying equipment. As soon as the surface appears water wet, a proper film is created; do not apply more than necessary. 1 litre Slip-Coat will cover 10-20 m<sup>2</sup>. Allow the film to dry completely before loading the cargo. Depending on air temperature and humidity this will take 1 to 2 hours. After reloading, apply a 2 – 5% solution of a cleaning agent in water to avoid re- deposition of contaminants, and finally flush with clean, high pressure water. Suitable cleaning agents are: Aquatuff (Product no. 607826 and 607827) Aquatuff High Foam (Product no. 736991 and 737007) Aquabreak PX (on zinc silicate coatings, Product no. 575613 and 607827). After flushing with water, let the surfaces dry and then repeat the treatment with applying Slip-Coat before next cargo.

### Product Properties

Appearance:	Clear, slightly viscous liquid
Density, in g/cm <sup>3</sup> at 15°C:	1.01
Flash point, (PMCC) in °C:	N/A
pH, in conc:	6

### Compatibility

Metal:	No known effect.
Coatings:	No known effect.
Rubber:	No known effect.

### Ordering information

Product no: 737015 (25 litre plastic container)

### Features, benefits and applications

- Water soluble cargo hold barrier – easily removable with water.
- Saves cleaning time and cleaning chemicals.
- Ideal when cleaning after coal, pet coke and other difficult cargoes. Completely safe on all coatings.
- Prevents even the most difficult cargo to adhere to the coating.
- Easy to apply – easy to remove.
- Provides temporary protection against corrosion Water based - free from hydrocarbon solvents. Complies with all environmental regulations

Read the Safety Data Sheet (SDS) before using this product.



## **Slip-Coat Plus– water proof temporary cargo barrier**

Slip Coat Plus is a liquid, waterborne protective barrier designed to perform maximum protection and efficiency during transport and unloading operations. This product is specially formulated to fill the minute pores in paintwork and leave a dense temporary water resistant film on cargo hold surfaces. When cured the protective film will act as a barrier between the cargo and cargo hold surfaces thus preventing cargo deposits from stubbornly adhering to the surfaces. The nature of the film makes it ideal for cargoes loaded in damp or wet conditions as well as preventing cargo from sticking to the surface caused by moisture build-up during the voyage. Slip Coat Plus can be used in cargo holds carrying foodstuff and is safe to the environment and to the personnel handling it. It is non-corrosive and safe on all coatings.

### How it works

After drying, Slip-Coat Plus creates a thin, non-sticky water proof film on the cargo hold surfaces. The film substantially facilitate the cleaning before next cargo in two ways: 1. The film fills the minute pores in the surface, and prevents that small particles are trapped in the pores. 2. Small, solid particles can be very difficult to remove especially from organic coatings, even with the use of effective cleaning agents and high pressure water jets. The reason is the build-up of electromagnetic forces, and sometimes the only way to remove the particles is by scrubbing. Slip-Coat Plus provides a barrier between the particles and the surface that minimize this problem, and the particles may now be removed with high pressure water only. The film is completely water soluble and is easy to remove even with cold sea water. To avoid re-deposition of contaminants a cleaning agent should be used, but at lower dosage rates than what normally is required.

To achieve optimal protection the cargo hold surfaces should be as clean and dry as possible before treatment with Slip Coat Plus. The ready-to use concentration makes it ideal for application directly from the drum by use of suitable low-pressure spraying equipment.

Do not apply more than necessary, one single application is sufficient and will cover 10–20 m<sup>2</sup>/ltr depending on the condition of the cargo holds. Allow the film to dry completely before loading the cargo a process which takes 1-2 hours depending on air temperature and humidity.

After drying, Slip Coat Plus creates a dense, non-sticky film on the cargo hold surfaces. After cargo discharge, both the film and cargo residues are easily removed by the use of an alkaline cleaner like Aquatuff or Aquatuff High Foam. A 10% solution in fresh water is recommended, leave for 15-30 minutes and finally flush with clean high pressure water. After flushing with water, let the surfaces dry and then repeat the treatment with applying Slip Coat Plus before the next cargo.

NOTE! The lowest application temperature for Slip Coat Plus is +5oC.

### Product properties

Appearance:	Low viscous liquid
Density, in g/cm <sup>3</sup> at 15°C:	Approx 1
Flash point, (PMCC) in °C:	N/A
pH, in conc:	6

### Compatibility

Metal:	No known effect.
Coatings:	No known effect.
Rubber:	No known effect.

### Ordering information

Product no: 778865 (25 litre plastic container)

### Features, benefits and applications

- Water resistant cargo hold barrier
- Ready to use - one single application
- Completely safe on all coatings
- Easily removable with an alkaline cleaner
- Water based - free from hydrocarbon solvents
- Composition based on FDA listed ingredients
- Excellent adhesion to all surfaces
- Ideal for use with humid and corrosive cargoes as sulphur, salt etc.
- Prevents even the most difficult cargo to adhere to the coating
- Saves cleaning time and cleaning chemicals
- Provides temporary protection against corrosion

Read the Safety Data Sheet (SDS) before using this product.



## Metal Brite H. D. – rust and metal tarnish remover

Liquid detergent compound containing phosphoric acid and non-ionic surfactants, used for rust removal and as a surface brightener.

### Directions for use and dose rates

Metal Brite H.D. should always be used in a plastic bucket. Acid should always be added to water, never the reverse. Remove dirt, rust flakes, oil and grease prior to using Metal Brite H.D. Apply Metal Brite H.D. to surfaces to be cleaned as follows; For removal of rust stains on painted surfaces, a solution of 10-30% should be sufficient. Rinse off with water 15-20 minutes after application. For removal of light cement stains and lime, apply a 50% solution, and high pressure wash after 30-40 minutes, and for solidified cement use Descaling Liquid. For removal of light rust and scale in pipelines and tanks, re-circulate a solution of 5-10% Metal Brite H.D. For discoloration of stainless steel and epoxy coated tanks use the same method. For removal of white residues from epoxy-coatings that sometimes remains after carriage of Stearin, Olein, Palm fatty acid etc., re-circulate a solution of 5-10% Metal Brite H.D. When injected, use a 5% solution. Re-circulate or inject until residue is removed.

### Product properties

Appearance:	Light yellow liquid
Density, in g/cm <sup>3</sup> at 15°C:	1.3
Flash point, (PMCC) in °C:	N/A
pH, 1 vol-%:	2

### Compatibility

Metal:	Long term exposure may lead to corrosion of mild steel, cast iron aluminium & alloys, brass, tin or galvanised material.
Rubber:	No known effect.

### Ordering information

Product no: 571679 (25 litre plastic container)

### Features, benefits and applications

- Does not contain nonyl phenol ethoxylates or other estrogenic compounds. Non-flammable.
- Removes light rust and rust stains.
- Cleans and passivates ferrous metal surfaces, inhibits further corrosion, and gives a base which paint will adhere.
- Removes tarnish from non-ferrous metals. Surface brightening including aluminium.
- Removes rust stains from painted, ceramic and wooden surfaces. Economical in use.
- Approved by the Norwegian Institute of Public Health.

Read the Safety Data Sheet (SDS) before using this product.





## **Aquabreak PX – multi purpose water-based degreaser**

Aquabreak PX is a multipurpose cleaning and degreasing agent. It is low -toxic, non- caustic, free from hydrocarbon solvents and biodegradable. The surfactant formulation with complex binders has a good cleaning efficiency. Dirt and oily matters is effectively removed without the use of solvents and caustic based cleaners.

### Direction for use and dose rates

Aquabreak PX can be used for all types of cleaning and degreasing, and it can be applied by brush, hand spray or used in ultrasonic bath. It can be used neat or diluted up to 50 parts with water according to the amount and type of soil to be removed. Aquabreak PX can be applied on vertical surfaces by adding Unitor Foam –Agent (Product no. 614537) for increased resident time.

### Product properties

Appearance:	Pale yellow liquid
Density, in g/cm <sup>3</sup> at 15°C:	1.0
Flash point, (PMCC) in °C:	N/A
pH, in conc:	12

### Compatibility

Metal:	May attack aluminium and zinc at concentrated solution.
Rubber:	No known effect.

### Ordering information

Product no: 575613 (25 litre plastic container)

### Features, benefits and applications

- Water based cleaner.
- Does not contain nonyl phenol ethoxylates or other estrogenic compounds. Low toxic and non-caustic.
- Biodegradable.
- Non-flammable.
- Free from hydrocarbon solvents. Safe on all materials.
- Very effective and economical in use.
- Aquabreak PX has numerous general cleaning applications including the removal of grease, oil, sludge, carbon deposits and grime.
- Can be used as engine room cleaner.
- Suitable for cargo tank cleaning.
- Good for use in galleys and on decks.
- Suitable for cleaning of soiled textiles as rugs, covers, mats, overalls etc. IMO-approved.
- Approved by Marinfloc AB for use in engine rooms.

Read the Safety Data Sheet (SDS) before using this product.



## Descaling Liquid – liquid acid for removal of scale and rust

Descaling Liquid is a liquid acid containing descaling accelerators, corrosion- inhibitors and wetting agents.

### Directions for use and dose rates

The most effective descaling is accomplished by circulation for large systems or components. In the case of small components, the soak method in an immersion bath can be used. If the equipment to be cleaned is contaminated by oil, grease, sludge or carbonised oil, then pre-cleaning with Seaclean or Enviroclean is necessary. Descaling Liquid should always be used in plastic bucket. Acid should always be added to water, and never the reverse. Descaling Liquid should be mixed with fresh water to form a solution of 10-30%, depending on the extent of scaling. After using Descaling Liquid it is essential to thoroughly rinse all metal surfaces at least once with a 0.5% solution of Alkalinity Control in fresh water. This solution should be circulated for 2-4 hours or until an acceptable pH value is obtained. This will neutralize any remaining acidity and passivates steel surfaces. Descaling Liquid should not be used on aluminium, zinc, tin, or any galvanised surfaces for which a special grade cleaner should be used. If used with Handymax or Panamax kit, flushing with fresh water must be carried out immediately after use and between each hold. Decaling liquid will cause wear on the kit so but is reduced if rinsed according to manual.

### Product properties

Appearance:	Pale yellow liquid
Density, in g/cm <sup>3</sup> at 15°C:	1.2
Flash point, (PMCC) in °C:	N/A
pH, in conc:	< 1.5

### Compatibility

Metal:	Contains corrosion inhibitors.
Rubber:	No known effect.
Synthetic rubber:	May swell.

### Ordering information

Product no: 571653 (25 litre plastic container)

### Features, benefits and applications

- Acid based product contains inhibitors against attack on ferrous metals.
- Unlimited shelf life.
- Easy to rinse off.
- Fast and effective scale remover.
- Removes scale and rust from condensers, evaporators, heat exchangers, etc.
- Removes water scale from boilers.
- Approved by the Norwegian National Institute of Public Health for cleaning of evaporators.

Read the Safety Data Sheet (SDS) before using this product.



## Foam-Agent – foam additive

Foam-agent is a water based non-flammable product. When using this foam additive, the cleaning efficiency of the cleaning chemicals will be enhanced. It will also give a more economical use of the cleaning chemicals.

### Directions of use and dose rates

Foam-Agent can be used together with the below mentioned water based cleaning chemicals. This makes it possible to apply the chemicals as foam, and prevent that the cleaning chemicals run off from vertical surfaces. The Foam Agent can be used with; Aquatuff, Aquabreak PX, Metal Brite H.D. & Descaling Liquid\*

\* - If used with Descaling liquid the solution should be used as soon as possible after mixing

Add 50 ml Foam-Agent per 10 litres washing solution, mix and apply with foam- equipment onto soiled surfaces. Follow the directions for use for the actual cleaning product.

### Product properties

Appearance:	Light yellow liquid
Density, in g/cm <sup>3</sup> at 15°C:	1.05 - 1.06
Flash point, (PMCC) in °C:	N/A
pH, in conc. at 20 °C:	8 - 9

### Compatibility

Metal:	No known effect.
Rubber:	No known effect.
Synthetic rubber:	No known effect.

### Ordering information

Product no: 614537 (5 litre plastic container)

### Features, benefits and applications

- Biodegradable.
- Does not contain nonyl phenol ethoxylates or other estrogenic compounds. Non-flammable.
- Suitable for use with our water based alkaline cleaning chemicals.
- Prevents that the chemicals run off from vertical surfaces and increases the resident time. Read the Safety Data Sheet (SDS) before using this product.



## **Disclaimer**

Wilhelmsen Ships Service assumes that persons responsible for carrying out cleaning operations are familiar with the guidelines published in MARPOL, MLC 2006, SOLAS, ISGOTT and other relevant guides and/or local port restrictions and laws that will pertain to such operations. Any user must read and familiar themselves with all relevant manuals and documentations. Wilhelmsen Ships Service hold the right to change the content within the kit at any time without notice.