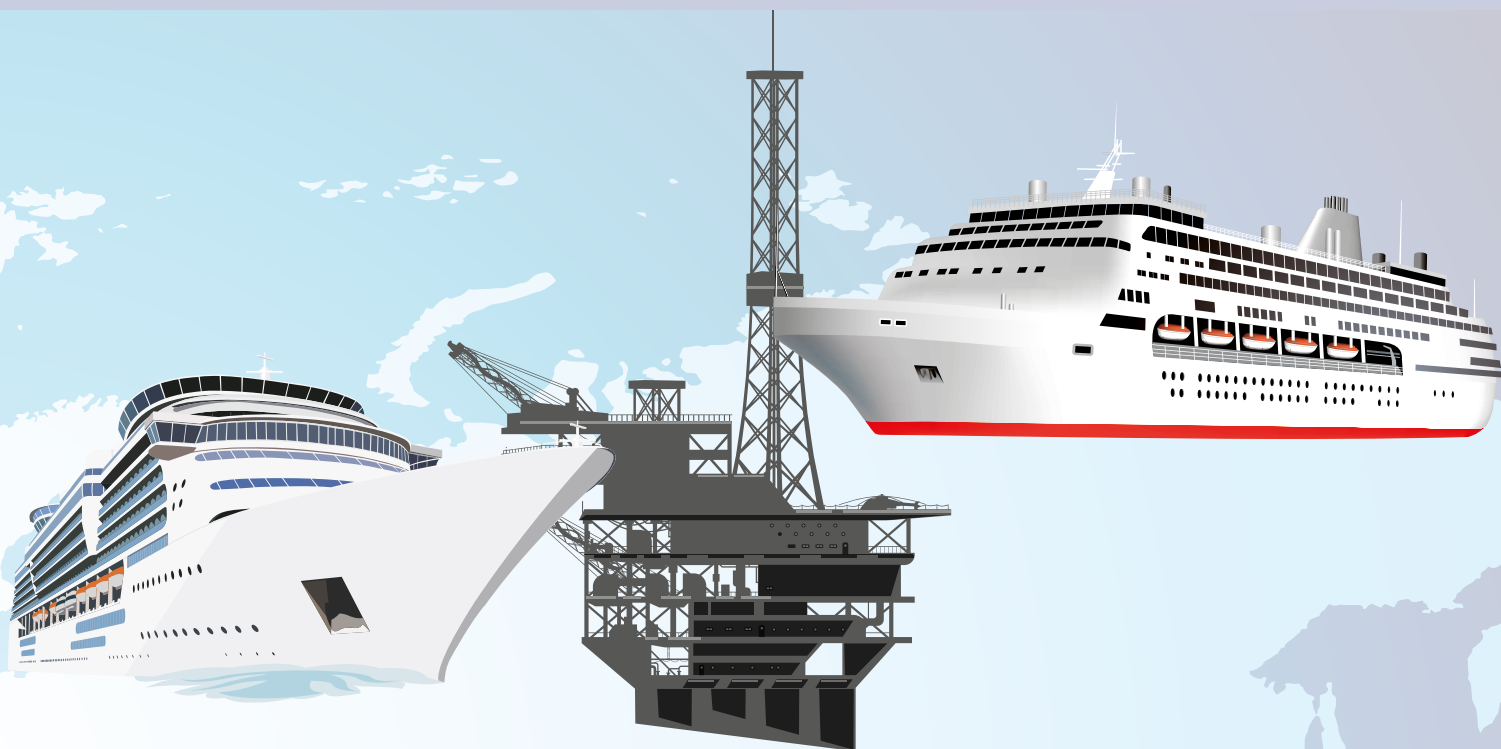


Cee-Bee Innovative Maritime Chemistry

We (dis)solve your problems

VACUUM TOILET SYSTEM MAINTENANCE



Cee-Bee®

Innovative Maritime Chemistry



www.ceebeemaritime.com

Cee-Bee Innovative Maritime Chemistry

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About Cee-Bee Maritime



McGean has been a successful developer, producer and supplier of formulated products for a variety of industries for over 80 years. The Cee-Bee range for the aviation industry consists of a large number of top quality cleaning products. MerchINTs Cleaning & Services (MC&S) introduced this product range in the maritime industry with their GreenBioClean line over 10 years ago.

In Cee-Bee Innovative Maritime Chemistry, McGean and MC&S have now joined forces in a partnership to realize the large-scale introduction in the maritime market.

MerchINTs Cleaning & Services BV is the exclusive world-wide distributor for non-aviation applications of McGean's Cee-Bee aviation products.

www.mcgean.com

www.merchints.nl

About Cee-Bee Innovative Maritime Chemistry



Cee-Bee Innovative Maritime Chemistry not only strives for the highest quality in cleaning products but also considers environmental consequences and natural resources: All Cee-Bee, Honey Bee and Super Bee cleaning products in this catalogue are biodegradable.

Cee-Bee Innovative Maritime Chemistry promotes the application of re-usable spray bottles for the ready-to-use cleaning products; this is why we mostly deliver our liquid cleaning products in 5 liter and 10 liter cans. Taps or hand-pumps for such cans and re-usable spray bottles to be supplied on request and at cost price.

www.ceebeemaritime.com



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Cee-Bee Innovative Maritime Chemistry

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Technical Data

Cee-Bee™ MR Vacuum System Descaling Program

Cee-Bee™ Innovative Maritime Chemistry vacuum pipe work systems descaling using Digital Dual Dosing Units

Cee-Bee™ Aviation (McGean) has developed methods and products for cleaning vacuum pipe work systems in airplanes since the beginning of the vacuum toilet system era in the aviation industry.

In 2003 Cee-Bee™ Innovative Maritime Chemistry introduced the aviation cleaning techniques and materials in the maritime industry.

Cee-Bee™ Innovative Maritime Chemistry now has gained experience in vacuum toilet systems cleaning in the maritime industry for over a decade. One of the results is the Cee-Bee™ Vacuum System Cleaning Program using digital dosing units.

Urged by continuous market demand and beside other techniques various Cee-Bee™ Digital Dosing Units have been developed and they are the heart of the Cee-Bee™ Vacuum System Cleaning Program, that stands out among all competition for more than one reason:

Cee-Bee™ Dosing Units are safe, user-friendly and fairly priced

Cee-Bee™ Dosing Units are mobile and easy to set-up



The Cee-Bee™ Vacuum System Descaling Program does not damage the pipe work, toilet mechanisms or biological sewage treatment plants.

The Cee-Bee™ Vacuum Systems Descaling Program provides a specialist method for cleaning vacuum pipe lines including those that have push fitting joints tightening under vacuum, such as the Blücher types of piping.



The Cee-Bee™ Vacuum Systems Descaling Program allows for all toilets to remain in operation. It can take place anywhere at any time, without interfering with the vessel operation, even during sailing.

The Cee-Bee™ Vacuum System Descaling Program is altogether cost effective.



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**The most SAFE & EFFECTIVE
chemicals you can imagine.**



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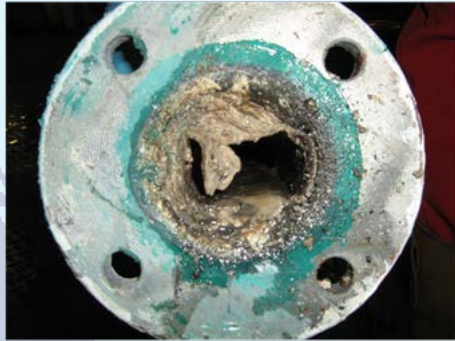
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Technical Data

CEE-BEE™ INNOVATIVE MARITIME CHEMISTRY (DIS)SOLVE YOUR PROBLEMS!

It just takes time until calcium scale starts building up inside the pipe work of a vacuum toilet system. The flow reduces and eventually the system blocked. It is not always easy to locate, let alone solve these blockages. Getting access to the pipes often takes demolishing elements of the vessel's interior and always means downtime in the toilet system and all the additional inconvenience that results from it.



The most common solution is to avoid blockage by the periodic cleaning of the system. As this involves taking out of operation lines of toilets, it is obvious that the cure is often worse than the problem.

The disconnected line may be saturated in diluted acid (which does not only disrupt the services on board, but may also cause damage by leakage) or re-circulated in a closed loop, which is more effective, but may have the same negative effects.



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CEE-BEE™ MR VACUUM SYSTEM DESCALING PROGRAM

In consultation with the officer or engineer in charge boroscoop inspections are performed at different locations in the vacuum line. After examining the video recordings an approach is planned. There is a choice to either just descale the main pipe of the vacuum system or also clean the secondary pipes from the toilets to the main pipe.

Depending on the level of scaling and the customer's wishes, Cee-Bee™ Dual Digital Dosing Units are installed at different locations in the vacuum system.



The innovative design of the Cee-Bee™ MR Dual Digital Dosing Unit includes two solenoid valves, digital timer units with LCD screens offering true digital time cycle programming, suction pipe, tank connector and transparent supply hose.



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For daily “automatic” descaling

CEE-BEE™ MR DUAL DOSING UNIT



The timers can be programmed to open the solenoid valves at given intervals for a pre-determined duration, ensuring accurate and controlled dosing routines to be maintained. When the solenoid valve is open, the pressure differential in the vacuum pipe will allow the Honey Bee™ MR 120 Scale Remover Gel to be drawn into the vacuum system.

The extra air administering solenoid valve allows for air to be dosed into the system. The periodic air flush simulates a toilet flush, without water, that moves the Honey Bee™ MR 120 Scale Remover Gel and distributes it over the inside surface of the vacuum pipes.

The Cee-Bee™ MR Dual Digital Dosing Unit was developed after extensive trials, together with our UK distributor, MRH Marine Ltd, and has already successfully cleaned the pipework on two Royal Navy ships where the pipe bore was down as little as 10 mm on some places.

We advise any type of Cee-Bee™ MR Dosing Unit or Dosing pump at the end of every vacuum line in order to keep all lines free from urinary scale.

***The vacuum toilet system remains operational at all times
and the sewage system effectively cleaned whilst all of the vessel's toilets are in operation!***

CEE-BEE™ MR ECO DOSING PUMP

The Cee-Bee™ MR Digital ECO Dosing Pump enables the exact dosage of the required quantity of Honey-Bee™ Descaling Products.

Features:

1. Micro-computer single-chip controlled, single operate.
2. Unique micro-adjusting device.
3. Intelligent dosing time, 24 times/day - 1 time/9days.
4. 1ml to 99ml dosage as set
5. Bright display, easily visible

Specifications:

8 Doses each capable of being set for either individual days and times, individual times every day of the week.

Dose setting in ml (can be individually calibrated by user if required).

Voltage range - 115/230V ± 10%



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For daily “automatic” descaling

HONEY BEE™ MR 120 SCALE REMOVER GEL

By the use of daily (automatic) use of the Honey-Bee™ 120MR Scale Remover Gel together with the use of the Cee-Bee™ MR Digital Dosing Unit you will keep your vacuum lines running without blockages due to urinary scaling.



Honey Bee™ 120MR
Scale Remover Gel **10 ltr**



**Not classified
for transport**

Warning: H315: Causes skin irritation. H319: Causes serious eye irritation. P264: Wash hands thoroughly after handling. P280 Wear protective gloves/protective clothing/eye protection/face protection. P303+361+353: IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. P305+351+338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

Attention: H315: Provoque une irritation cutanée. H319: Provoque une sévère irritation des yeux. P264: Se laver les mains soigneusement après manipulation. P280: Porter des gants de protection/des vêtements de protection/protection des yeux/protection du visage. P303+316+353: EN CAS DE CONTACT AVEC LA PEAU (ou les cheveux): Enlever immédiatement les vêtements contaminés. Rincer la peau à l'eau / douche. P305+351+338: EN CAS DE CONTACT AVEC LES YEUX: rincer avec précaution à l'eau pendant plusieurs minutes. Enlever les lentilles de contact si la victime en porte et si elles peuvent être facilement enlevées. Continuer à rincer.

Achtung: H315: Verursacht Hautreizungen. H319: Verursacht schwere Augenreizung. P264: Nach Gebrauch Hände gründlich waschen. P280: Schutzhandschuhe/Schutzkleidung/Augenschutz/Gesichtsschutz tragen. P303+361+353: BEI BERÜHRUNG MIT DER HAUT (oder dem Haar): Sofort alle kontaminierte Kleidung ausziehen. Haut mit Wasser abspülen / duschen. P305+351+338: BEI KONTAKT MIT DEN AUGEN: Einige Minuten lang behutsam mit Wasser spülen. Vorhandene Kontaktlinsen nach Möglichkeit entfernen. Weiter spülen.

Waarschuwing: H315: Veroorzaakt huidirritatie. H319: Veroorzaakt ernstige oogirritatie. P264: Na het werken met dit product handen grondig wassen. P280: Beschermende handschoenen/Medring/oogbescherming/gelaatsbescherming dragen. P303+361+353: BIJ CONTACT MET DE HUID (of met het haar): onmiddellijk alle besmette kleding uittrekken. Huid met water afspülen / douchen. P305+351+338: BIJ CONTACT MET DE OGEN: Voorzichtig afspülen met water gedurende een aantal minuten; contactlenzen zo mogelijk verwijderen. Blijven spoelen.

Manufactured in the UK by McGean-Rohco (UK) Ltd



Honey Bee™ MR 120 Scale Remover Gel

Product No: _____ 10L / 200011
Product No: _____ 5L / 200010

Cee-Bee Innovative Maritime Chemistry

We (dis)solve your problems

For daily “automatic” descaling

HONEY BEE™ MR 120 SCALE REMOVER GEL

Honey Bee™ MR 120 Scale Remover Gel is an environmentally friendly and efficient treatment designed for removal of hard water scale, urine scale build-up and accumulated waste in vacuum pipes and toilet systems. The properties of the Gel provide for extended dwell time and effective distribution in vacuum system lines. This powerful product prevents scale build-up in vacuum toilet lines, holding tanks and components and keeps sewage flowing freely. Honey Bee™ MR 120 Scale Remover Gel can also be used directly on scale build-up in toilet bowls for local cleaning and is safe for use on stainless steel, acrylic plastic and good quality paint. Routine use of Honey Bee™ MR 120 Scale Remover Gel puts an end to scale in toilet systems.

Urine combined with minerals in the water to form a thick hard layer on the inside of sewage pipes called scale. This scale build-up can restrict the flow of sewage, reducing vacuum efficiency and eventually blocking the pipes. In horizontal fittings especially, the aggressive salts can attack valves and piping over a period of time.

To combat these problems effectively, we recommend use of Honey Bee™ MR 120 Scale Remover Gel. This is achieved by using the recommended dosage of Honey Bee™ MR 120 Scale Remover Gel in toilets or vacuum pipes as a routine treatment. Removal of mild scale build-up can be carried out without closing down toilet sections.

Honey Bee™ MR 120 Scale Remover Gel also works on severely clogged pipes. For removal of severe scale build-up we recommend Cee-Bee™ Vacuum System Cleaning Program. This program has been developed to tackle the toughest scale build-up in toilet vacuum systems. After running the Cee-Bee™ Vacuum System Cleaning Program use Honey Bee Scale Removing products regularly to permanently stop scale build-up.



Before



After



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We (dis)solve your problems

For daily “automatic” descaling

HONEY BEE™ MR 120 SCALE REMOVER GEL

Benefits of Honey Bee™ MR 120 Scale Remover Gel.

- Routine use of Honey Bee™ MR 120 Scale Remover Gel saves time and money on maintenance.
- Avoids costly blockages and pipe replacement due to urinary scaling.
- A unique biological degradable product that is safe and efficient.
- No need to use high pressure cleaning or harsh chemicals.
- Gentle on users, vacuum system parts and vacuum pipes.
- Does not corrode metal, damage PEH pipes or dissolve gaskets.
- Safe on stainless steel, acrylic plastic and good quality paint.
- Formulated with high quality inhibitor to prevent system damage.
- Non-flammable.

The thick consistency of Honey Bee™ MR 120 Scale Remover Gel adds to its ability to cling to the inner surface of the pipes, prolonging the duration of its activity in the pipe system.



Environmental Advantages.

Honey Bee™ MR 120 Scale Remover Gel complies with the strictest regulations concerning the environment and safety. When neutralized it can be safely discharged directly into existing sewage systems.

Preventive Maintenance with a Cee-Bee™ MR Dual Digital Dosing Unit.

The Cee-Bee™ MR Dual Digital Dosing Unit should be connected at the end of the main vacuum pipe. It is necessary to determine the number of toilets covered by the dosing unit and then calculate as follows.

Calculate 1cl Honey Bee™ MR 120 Scale Remover Gel per toilet per day (a unit covering 10 toilets will take about 70cl a week) for timer settings and user instructions please refer to your dosing unit technical data sheet.

Cee-Bee Innovative Maritime Chemistry

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Technical Data

CEE-BEE™ TOILET SYSTEM CLEANER

Cee-Bee™ MR Toilet System Cleaner is an environmentally friendly and efficient treatment designed for removal of hard water scale, urine scale build-up and anti-bacterial cleaning of the toilet bowl.

Routine cleaning of the toilet bowl with Cee-Bee™ MR 120 Toilet System Cleaner also results in control and prevention of scaling of the bowl, vacuum valve and vacuum pipe system.

Urine combined with minerals in the water to form a thick, hard layer called scale. This scale build-up on the toilet bowl and in vacuum pipes leading to restricted flow of sewage, reducing vacuum efficiency and eventually blocking the pipes. Especially in horizontal fittings the aggressive salts can attack valves and piping over a period of time.

To combat these problems effectively we recommend use of Cee-Bee™ MR Toilet System Cleaner. This is achieved by using the recommended dosage of Cee-Bee™ MR Toilet System Cleaner in routine cleaning of toilets. As Cee-Bee™ MR Toilet System Cleaner is a gel based formula, contact with scale build-up in the toilet bowl is prolonged. The formula allows you to clean; descale and disinfect in one easy operation. For health, safety and environmental information please refer to the Safety Data Sheet.



Siphon before use of Cee-Bee™ MR Toilet System Cleaner



Siphon after use of Cee-Bee™ MR Toilet System Cleaner

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Test Result

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Fax: +44 (0)1902 457443
email : sales@mcgean-rohco.co.uk



LAB. REPORT MR120 Descaler Liquid & MR120 Descaler Gel

Tested To Aerospace Material Specification; AMS 1640, Boeing D6-17487

Immersion Corrosion (ASTM F-483)

The following data was obtained by total immersion of 1"x 2" metal panels into MR120 Descaler Liquid and MR120 Descaler Gel at 100° F (38° C) at 10% v/v and at 100% v/v for 24 hrs.
Weight change report as mg./in/24 hrs.

	MR120 Desc. Liq.	MR120 Desc. Liq.	MR120 Desc. Gel	MR120 Desc. Gel
	100 % v/v	10% v/v	100% v/v	10% v/v
Brass, AMS 4508	+0,10	<0,10	+0,14	<0,10
Copper, QQ-C-576	+0,10	<0,10	+0,13	<0,11
Stainless Steel 316	-0,10	-0,10	-0,10	-0,10
Mild Steel, 1010	-0,40	-0,60	-0,45	-0,62
Cd Plated steel, dull	-38,70	-7,50	-39,10	-7,50
Cd plated steel, bright	-1,90	-1,10	-1,85	-1,12
Galvanized steel	-122,5	-	-123,00	-
Al, clad, 7075	-0,60	-0,40	-0,50	-0,40
Al, clad 2024	-0,80	-0,90	-0,70	-0,94
Titanium	0,00	-0,10	0,00	-0,10

Effect on plastics per AMS 1640.

When tested in accordance with ASTM F-484, MR120 Descaler Liquid and MR120 Descaler Gel does not craze, stain nor discolour MIL-P-2569 stretched acrylic plastic.

Effect on painted surfaces per AMS 1640.

When tested in accordance with ASTM F-502, MR120 Descaler Liquid and MR120 Descaler Gel does not decrease the hardness of the paint film by more than one pencil hardness level and do not produce any streaking, discoloration or blistering of the paint film.

Result :

MR120 Descaler Gel & MR120 Descaler Liquid meet the requirements of Aerospace specifications AMS1640 and Boeing D6-17487.



McGean
Speciality Chemicals Group

Registered in England and Wales.No. 1177941

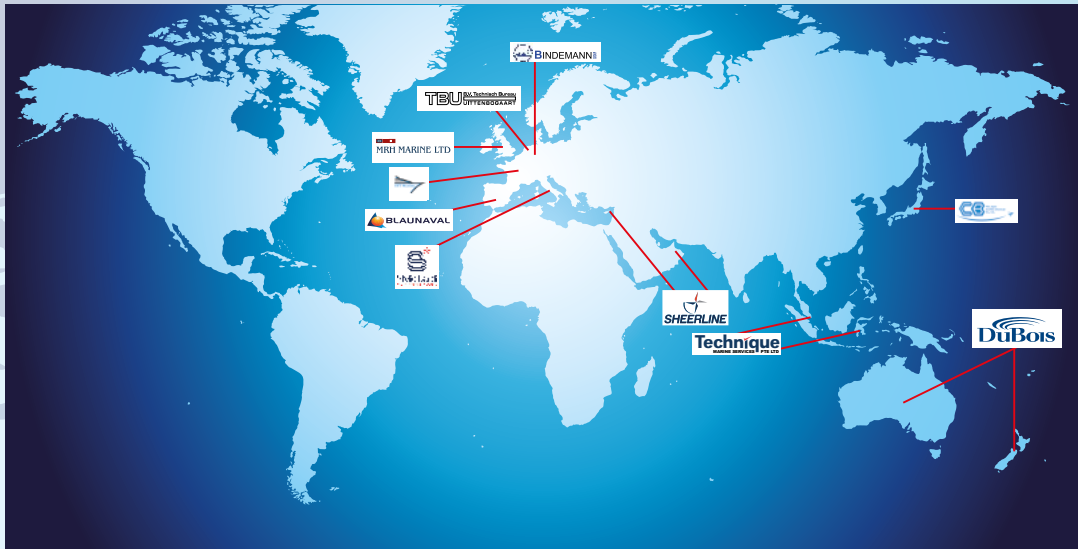
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