OMNIPURE™ Series 64 G2
Marine Sewage Treatment System

COMPLIANT IN EVERY PORT, HARBOR, OCEAN AND SEA

With MEPC.227(64), the International Maritime Organization (IMO) formally adopted a new discharge standard for the treatment of offshore and marine sewage. More specifically, the guidelines call for a reduction in the amount of total suspended solids and adjusting discharge limits based on a seawater dilution compensation factor. In complying, maritime vessels and offshore platforms are compelled to find a solution that achieves the benchmark using proven technology that integrates easily with the simplest long-term operation, minimal maintenance and most sensible economic impact. For many, the solution to this new guideline is the OMNIPURE™ Series 64 from De Nora.

ALREADY PROVEN AROUND THE WORLD. NOW IMPROVED ABOARD YOUR SHIP OR PLATFORM.

De Nora utilized its proven electrolytic process in conjunction with a novel cuttingedge electroflotation process when creating the new OMNIPURE™ Series 64 G2. We have achieved compliance to the MEPC.227(64) by utilizing the same real-world, electrolytic processes, found in nearly 3,000 OMNIPURE treatment units installed platforms around the world. Combining electroflotation to our already successful DSA® electrode Bookcell design, further ensures treatment compliance. Innovative improvements such as 'current reversal' at the Bookcell, improves cell efficiency while reduced equipment footprint and maintenance requirements for the new OMNIPURE™ Series 64 have been minimized.

REMOVING THE MESS AND MAINTENANCE OF FILTERS.

Far different from the majority of options available for meeting the new IMO standard, the hands-off OMNIPURE™ Series 64 G2 does not rely upon raw sewage inlet screens and filters to reduce influent solids loading. Instead of pre-screens or filters, De Nora's OMNIPURE™ Series 64 G2 is a hands-off system that employs effective maceration for fine solids breakdown of incoming untreated solids, core electrolytic treatment and finally innovative electroflotation to effectively treat the waste stream to, or beyond regulatory requirements. The OMNIPURE™ Series 64 G2 systems are provided with a ship-loose Dechlorination system to meet requirement of less than 0.5 mg/L "Disinfectant Residual" in the treated effluent.

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ONE SMALL FOOTPRINT, ONE BIG STEP FOR SIMPLICITY

The OMNIPURE™ Series 64 treats raw sewage to, or beyond the now more stringent MEPC.227(64) guideline while taking up less space than its predecessor. Not just a system smaller in size, it is easier to operate with simplified controls, minimal instrumentation, less maintenance and a completely hands-off solids management process, making the OMNIPURE™ Series 64 G2 a leading competitor.

PROCESSING RAW SEWAGE INTO COMPLIANT EFFLUENT

1. For every treatment batch, the process starts when seawater is added to the OMNIPURE™ Series 64 G2 batch tank to a precise, sensor-controlled volume. At the same time, a concentrated polymer is automatically mixed into solution with potable (or utility) water in a small mixing chamber on the unit for its use later in the treatment process.

2. Untreated wastewater is then pumped from the vessel or platform's holding tank, or optionally De Nora-supplied tank, and into the OMNIPURE™ Series 64 G2 batch tank, filling it to a precise, sensor controlled volume.

3. This sewage and seawater mixture is then recirculated through the electrolytic Bookcell to oxidize organic matter (BOD/ COD) and kill the harmful pathogens in the wastewater. A de-foaming agent is also added to keep foaming to a minimum within the treatment tank.

4. During this electrolytic treatment step, any process gases are vented safely away by the integral dilution blower unit.

5. After the pathogens have been eliminated and organic matter is oxidized using the electrolytic Bookcell, the pre-mixed polymer solution is injected into a 'mix spool piping' while a secondary recirculation process occurs, which begins an agglomeration process of the suspended solids.

6. In addition to killing pathogens, the use of the electrolytic cell encourages an electroflotation effect to occur at the surface of the wastewater in the batch tank.

7. Agglomerated solids form a floating 'solids layer' in the batch tank without the use of externally induced air, internal diffusers or large air blowers.

8. After a brief residence time, the clear effluent below this solids layer is pumped overboard after de-chlorination, meeting or exceeding the MEPC.227(64) guideline.

9. Remaining 0.8-1.0 wt% wet solids in the batch tank are pumped out using the macerator, and sent to the solids holding tank for later disposal. As an enhanced option, or when a wet solids holding tank is not feasible, De Nora also offers a self-contained centrifuge solids handling system that effectively concentrates the 0.8-1.0 wt% wet solids to a minimum 10 wt% dewatered, class 'B' solids level, which can be safely disposed of in a traditional landfill, eliminating the need for large wet solids holding tanks or offloading of wet solids/sludge for further treatment ashore.

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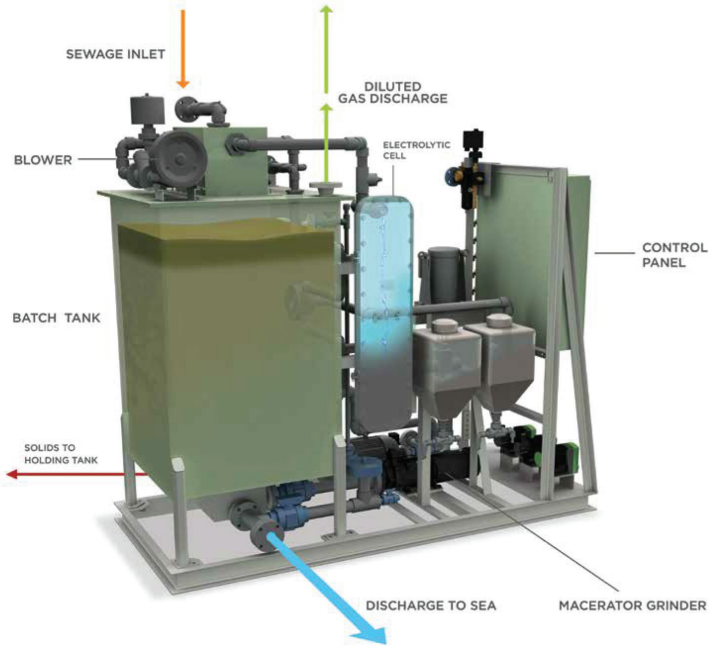

MULTIPLE MODELS TO ACCOMMODATE YOUR CAPACITY REQUIREMENTS

Marine wastewater treatment is not a one-size-fits-all scenario. Invest in too big of a system, and you end up wasting precious floor space and using more consumables than needed. Go with something that's just big enough and you might not always be able to keep up with demand. That's why the OMNIPURE™ Series 64 G2 is available in eight different treatment capacities to match your offshore platform or marine vessel waste processing demand. With the OMNIPURE™ Series 64 G2 you get the right solution for your particular application.

OMNIPURE™ Series 64 G2 Models	6405 G2 and 6405 G2 Ex	6408 G2 and 6408 G2 Ex	6413 G2 and 6413 G2 Ex	6417 G2 and 6417 G2 Ex	6424 G2 and 6424 G2 Ex	6430 G2 and 6430 G2 Ex	6440 G2 and 6440 G2 Ex*	6450 G2 and 6450 G2 Ex*
Daily Treatment	4,845 L/day	8,042 L/day	13,149 L/day	17,206 L/day	24,145 L/day	30,470 L/day	40,431 L/day	49,950 L/day
	1,280 gal/day	2,124 gal/day	3,474 gal/day	4,545 gal/day	6,378 gal/day	8,049 gal/day	10,681 gal/day	13,195 gal/day

* Larger models incorptate dual macerators and electrolytic cells

WHY STOP AT MEETING SPEC?

When guidelines change, as they did with MEPC.227(64), De Nora adapts to comply beyond specification. This was achieved with the OMNIPURE™ Series 64 G2, that meets or surpasses IMO guidelines. The proof is in the numbers, and the numbers favor the OMNIPURE™ Series 64 G2 marine sewage treatment system.

Discharge	MEPC.227(64) IMO Guidelines	OMNIPURE Series 64™ Performance
BOD (mg/L)	< 25 x Qi/Qe	< 17 (25 x .67)
TSS (mg/L)	< 35 x Qi/Qe	< 23 (35 x .67)
Fecal Coliform (MPN/100 mL)	< 100	< 100
COD (mg/L)	< 125 x Qi/Qe	< 84 (125 x .67)
pH	Between 6-8.5	Between 6-8.5
Chlorine Residual	0.5 mg/L (max)	0.5 mg/L (max)

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THE LEADER IN ELECTROLYTIC TECHNOLOGY — AND SO MUCH MORE

Across the seven seas and five oceans, no company has accomplished more in the area of electrolytic water treatment while simultaneously expanding its industrial applications than De Nora.

Founded in 1923 when Oronzio De Nora obtained his first industrial patent for a tilted electrode cell, De Nora has built its legacy upon innovation, holding more than 349 international intellectual property patents. The De Nora of today is a global company and a leading designer, manufacturer and supplier of electrodes, coatings and complete electrochemical, disinfection and filtration solutions to serve a wide range of markets.

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