

Latest Information of Approval of Ballast Water Management System

ClassNK EQD
as of 1st Oct. 2010

No	Ballast Water Management System								Approval Information			Website URL
	BWMS Manufacture	BWMS Name	Country	Process	Active Substance Manufacture	Active Substance Name	Country	Kind of Active Substance	Approval of Active Substances G9 (MEPC126(53)) Approval given by IMO		Approval of BWMS G8 (MEPC125(53)) Approval given by the Administration	
									Basic Approval	Final Approval		
1	Alfa-Laval AB	PureBallast	Sweden	Filtration + UV/TiO2	← Same as BWMS	← Same as BWMS	← Same as BWMS	UV/TiO2	Approved (BWM.2/Circ.11)	Approved (BWM.2/Circ.11)	Approved (by Norway Government on 27th June 2008)	http://www.alfalaval.com/pureballast/
2	Ocean Saver AS	OceanSaver	Norway	Filtration + Deoxygenation + Cavitation+ Electrolytic Disinfection	← Same as BWMS	← Same as BWMS	← Same as BWMS	Electrolytic Disinfection	Approved (MEPC57/2/6)	Approved (MEPC58)	Approved (by Norway Government on 8th Apr. 2009)	http://www.oceansaver.com/
3	OptiMarine AS	OptiMar Ballast Systems	Norway	Filtration + UV	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	Approved (by Norway Government on 12th Nov. 2009)	http://www.ballastwater.com/
4	Hamann AG / Degussa GmbH (temporarily withdrawn from the market)	SEDNA	Germany	Filtration + Peracetic acid	Degussa GmbH	Peraclean Ocean	Germany	Peracetic acid	Approved (BWM.2/Circ.11)	Approved (MEPC57/2/5)	Approved (by Germany Government on 10th June 2008)	http://www.hamannag.com/ballast/
5	Japanese Association of Marine Safety	SP Hybrid	Japan	Cavitation(by high shear) + Ozonation	Mitsui Engineering and Shipbuilding Co.,Ltd	ozonation	Japan	Ozonation	Approved (BWM.2/Circ.11)	Approved (MEPC61)	Not yet	http://www.nikkaibo.or.jp/
6	Mitsubishi Heavy Industries, Ltd.	Seawater Electrolytic Process	Japan	Filtration + Electrolysis/Electrochlorination	← Same as BWMS	← Same as BWMS	← Same as BWMS	Electrolysis /Electrochlorination	Not Yet (Submitted by MEPC56/2 but not granted at MEPC56)	Not yet	Not yet	http://www.mhi.co.jp/
7	Hitachi Plant Technologies, Ltd.	ClearBallast	Japan	Filtration + pre-coagulant (enhanced flocculation)		← Same as BWMS	← Same as BWMS	coagulant + flocculation	Approved (MEPC57)	Approved (MEPC59)	Approved (by Japanese Government on 5th March 2010)	http://www.hitachi.com/
8	JFE Engineering Corporation	JFE BallastAce	Japan	Filtration + Chlorination + Cavitation	TG Corporation	Chlorination	Japan	Chlorination	Approved (MEPC58)	Approved (MEPC60)	Approved (by Japanese Government on 26th May 2010)	http://www.jferd.co.jp/

9	TECHCROSS INC	Electro-Cleen System	Korea	Electrolysis/Electrochlorination	← Same as BWMS	← Same as BWMS	← Same as BWMS	Electrochemical	Approved (BWM.2/Circ.11)	Approved (MEPC58)	Approved (by Korea Government on 31st Dec 2008)	http://www.techcross.net/
10	RWO	CleanBallast	Germany	Filtration + Electrolysis/Electrochlorination	← Same as BWMS	Ectosys	Same as BWMS	Electrolysis/Electrochlorination	Approved (BWM.2/Circ.11)	Approved (MEPC59)	Not yet	http://www.rwo.de/en/
11	NEI Treatment Systems, LLC	Venturi Oxygen Stripping	USA	Deoxygenation + Cavitation	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	Approved by The Republic of Liberia Bureau of Maritime Affairs on 11th Oct.2007	http://www.nei-marine.com/
12	NK CO., LTD.	NK-O3 Blue Ballast System	Korea	Ozonation	← Same as BWMS	← Same as BWMS	← Same as BWMS	Ozonation	Approved (BWM.2/Circ.11)	Approved (MEPC59)	Approved (by Korea Government on 24th Nov. 2009)	http://nk-eng.nkcf.com/
13	Ecochlor, INC.	Ecochlor BWT System	USA	CLO2	← Same as BWMS	← Same as BWMS	← Same as BWMS	CLO2	Approved (MEPC58)	Approved (MEPC61)	Not yet	http://www.ecochlor.com/
14	Resource Ballast Technologies Pty. (Ltd.) / (UNITOR)	Resource Ballast Water Treatment System/ (UNITOR BWTS)	South Africa	Filtration + Cavitation	← Same as BWMS	← Same as BWMS	← Same as BWMS	Electrolysis/Electrochlorination	Approved (MEPC57/2/3)	Approved (MEPC60)	Approved (by South African Government on 31st Aug. 2010)	http://www.resource-technology.com/
15	PANASIA CO., LTD.	GloEn-Patrol	Korea	Filtration + UV	← Same as BWMS	← Same as BWMS	← Same as BWMS	UV	Approved (MEPC57/2/4)	Approved (MEPC60)	Approved (by Korea Government on 4th Dec. 2009)	http://www.panasia.co.kr/
16	Hamworthy Greenship B.V.	Greenship Sedinox Ballast Water Management System	Netherlands	hydrocyclone + electrolytic chlorination	← Same as BWMS	← Same as BWMS	Netherlands		Approved (MEPC58)	Approved (MEPC59)	Not yet	http://www.hamworthy.com/
17	China Ocean Shipping (Group) Company	Blue Ocean Shield	China	UV treatment + Filter system	← Same as BWMS	← Same as BWMS	China		Approved (MEPC59)	Not yet	Not yet	
18	Hyundai Heavy Industries Co. Ltd.	EcoBallast	Korea	UV treatment + Filter system	← Same as BWMS	← Same as BWMS	Korea		Approved (MEPC59)	Approved (MEPC60)	Not yet	
19	Aquaworx ATC GmbH	AquaTriComb ^T _M ballast water treatment system (BWTS)	Germany	UV radiation + Ultrasonic oscillation	← Same as BWMS	← Same as BWMS	Germany		Approved (MEPC59)	Not yet	Not yet	http://www.aquaworx.de/content/unternehmen/
20	SIEMENS	SiCURE TM BWM System	Germany	Sodium Hypochlorite + Filter	Chloropac	Sodium Hypochlorite	Germany		Approved (MEPC60)	Not yet	Not yet	http://www.industry.siemens.com/Water/en/

21	Hyde Marine Inc.	Hyde GURDIAN™	USA	Filter + UV Treatment	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	<i>Approved (by UK Government on 29th April 2009)</i>	http://www.hydemarine.com/	
22	Atlas-Danmark ApS	ATLAS BALLAST WATER TREATMENT SYSTEM	Denmark	Filter + Electrolysis		ANOLYTE, CATHOLYTE				<i>Not yet</i>	<i>Not yet</i>	<i>Not yet</i>	http://www.atlas-danmark.com/default.asp
23	Sunrui Corrosion and Fouling Control Company	BalClor BWMS	China	Filter + Electrolysis						Approved (MEPC60)	Approved (MEPC61)	<i>Not yet</i>	http://www.sunrui.net/
24	DESMI Ocean Guard A/S	DESMI Ocean Guard Ballast Water Treatment System	Denmark	Filter + UV + Ozone						Approved (MEPC60)	<i>Not yet</i>	<i>Not yet</i>	http://www.desmioceanguard.com/
25	21st Century Shipbuilding Co., Ltd.	ARA Ballast	Korea	Filter + UV + Plasma						Approved (MEPC60)	Approved (MEPC61)	<i>Not yet</i>	
26	Hyundai Heavy Industries Co. Ltd.	HiBallast	Korea	Filter + Electrolysis						Approved (MEPC60)	<i>Not yet</i>	<i>Not yet</i>	
27	Kwang San Co. Ltd.	En-Ballast	Korea	Filter + Electrolysis						Approved (MEPC60)	<i>Not yet</i>	<i>Not yet</i>	
28	Quindao Headway Technology Co., Ltd.	OceanGuard	China	Filter + Electro catalysis + Ultrasonic						Approved (MEPC60)	Approved (MEPC61)	<i>Not yet</i>	
29	Severn Trent DeNora	BalPure BWMS	Germany	Filter + Electrolysis						Approved (MEPC60)	Approved (MEPC61)	<i>Not yet</i>	
30	Techwin Eco Co., Ltd.	Purimar System	Korea	Filter + Electrolysis						Approved (MEPC61)	<i>Not yet</i>	<i>Not yet</i>	
31	AQUA Eng. Co., Ltd.	AquaStar System	Korea	Filter + Electrolysis						Approved (MEPC61)	<i>Not yet</i>	<i>Not yet</i>	
32	Kuraray Co., Ltd.	MICROFADE	Japan	Filter + Calcium hypochlorite		Kuraray AS		Calcium hypochlorite		Approved (MEPC61)	<i>Not yet</i>	<i>Not yet</i>	http://www.kuraray.co.jp/ http://www.kashiwa-tech.co.jp/

NOTE:

Approval of Active Substances : If BWMS uses Active Substances, Active Substances is needed to be approved by IMO to evaluate environmental risk in accordance with G9 (MEPC126(53)/MEPC169(57)).

Approval of BWMS : BWMS is needed to be approved by the administration to evaluate efficacy in accordance with G8 (MEPC125(53)/MEPC174(58)).