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# INTERNATIONAL CONVENTION FOR THE CONTROL AND MANAGEMENT OF SHIPS' BALLAST WATER AND SEDIMENTS, 2004

#### List of ballast water management systems that make use of Active Substances which received Basic and Final Approvals

- The Ballast Water Management Convention (BWM Convention) provides in its regulation D-3.2 that ballast water management systems which make use of Active Substances, to comply with the Convention, shall be approved by IMO based on a procedure developed by the Organization. According to regulation A-1.7 of the same Convention, an Active Substance is a substance or organism, including a virus or a fungus that has a general or specific action on or against harmful aquatic organisms and pathogens.
- The Marine Environment Protection Committee (MEPC), at its fifty-third session (18 to 22 July 2005), adopted the "Procedure for approval of ballast water management systems that make use of Active Substances (G9)" by resolution MEPC.126(53). At the same session, MEPC established a Technical Group (GESAMP-Ballast Water Working Group) under the auspices of GESAMP\*, to evaluate Active Substances and the relevant systems and advise the MEPC accordingly.
- 3 MEPC 57 (31 March to 4 April 2008) adopted resolution MEPC.169(57), which revokes resolution MEPC.126(53) and contains the revised "Procedure for approval of ballast water management systems that make use of Active Substances (G9)".
- 4 Section 8 of Procedure (G9) sets out the methodology to be followed for the two-tier approval of ballast water management systems that make use of Active Substances and requests IMO to record the Basic and Final Approvals and to circulate the list once a year.
- Following the consideration of the relevant reports of the GESAMP-BWWG, the MEPC, at its sixtieth session (22 to 26 March 2010) and sixty-first session (27 September to 1 October 2010), granted 11 Basic Approvals and 10 Final Approvals to ballast water management systems that make use of Active Substances. The annexes to this circular contain relevant information on the ballast water management systems that received Basic and Final Approvals from March 2006 until December 2010.
- 6 This circular supersedes Circular BWM.2/Circ.23.

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GESAMP stands for IMO/FAO/UNESCO-IOC/WMO/IAEA/UN/UNDP/UNEP/UNIDO Joint Group of Experts on the Scientific Aspects of Marine Environmental Protection.

- 7 Information regarding the systems that received Type Approval Certification can be found in the IMO website at <a href="http://www.imo.org/home.html">http://www.imo.org/home.html</a>.
- 8 Member Governments are invited to bring this circular to the attention of all the parties concerned.

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ANNEX 1

LIST OF BALLAST WATER MANAGEMENT SYSTEMS THAT MAKE USE OF ACTIVE SUBSTANCES WHICH RECEIVED BASIC APPROVAL IN ACCORDANCE WITH PROCEDURE (G9)

	Name of the system and MEPC document related to the proposal for Basic Approval	Name of manufacturer	Relevant GESAMP- Ballast Water Working Group report	Date of Basic Approval	Specifications
1.	Peraclean <sup>®</sup> Ocean  MEPC 53/2/12 (Germany)	Degussa GmbH, Germany	MEPC 54/2/12, annex 5	24 March 2006 (MEPC 54)	Flag State Administration was invited to authorize onboard testing only when the concerns identified in annex 5 of the report of the first meeting of the GESAMP-Ballast Water Working Group (MEPC 54/2/12) had been addressed to its complete satisfaction.
2.	Electro-Clean (electrolytic disinfection) system (subsequently changed to Electro-Cleen™)  MEPC 54/2/3 (Republic of Korea)	Techcross Ltd. and Korea Ocean Research and Development Institute (KORDI)	MEPC 54/2/12, annex 6	24 March 2006 (MEPC 54)	Flag State Administration was invited to authorize onboard testing only when the concerns identified in annex 6 of the report of the first meeting of the GESAMP–Ballast Water Working Group (MEPC 54/2/12) had been addressed to its complete satisfaction.
3.	Special Pipe Ballast Water Management System (combined with Ozone treatment)  MEPC 55/2 (Japan)	Japan Association of Marine Safety (JAMS)	MEPC 55/2/16, annex 5	13 October 2006 (MEPC 55)	Flag State Administration was invited to take into account all the recommendations indicated in annex 5 of the report of the second meeting of the GESAMP-Ballast Water Working Group (MEPC 55/2/16) during further development of the system.
4.	EctoSys™ electrochemical system MEPC 55/2/4 (Sweden)	Permascand AB, Sweden, subsequently acquired by RWO GmbH, Germany	MEPC 55/2/16, annex 7	13 October 2006 (MEPC 55)	Flag State Administration was invited to take into account all the recommendations indicated in annex 7 of the report of the second meeting of the GESAMP-Ballast Water Working Group (MEPC 55/2/16) during further development of the system.

	Name of the system and MEPC document related to the proposal for Basic Approval	Name of manufacturer	Relevant GESAMP- Ballast Water Working Group report	Date of Basic Approval	Specifications
5.	PureBallast System  MEPC 55/2/5 (Sweden)	Alfa Laval/Wallenius Water AB	MEPC 56/2/2, annex 5	13 July 2007 (MEPC 56)	Not applicable.
6.	NK Ballast Water Treatment System (subsequently changed to NK-O3 BlueBallast System (Ozone))  MEPC 55/2/3 and MEPC 55/2/27 (Republic of Korea)	NK Company Ltd., the Republic of Korea	MEPC 56/2/2, annex 6	13 July 2007 (MEPC 56)	Flag State Administration was invited to take into account all the recommendations indicated in annex 6 of the report of the third meeting of the GESAMP-Ballast Water Working Group (MEPC 56/2/2) during further development of the system.
7.	Hitachi Ballast Water Purification System (ClearBallast)  MEPC 57/2/2 (Japan)	Hitachi, Ltd. /Hitachi Plant technologies, Ltd.	MEPC 57/2, annex 5	4 April 2008 (MEPC 57)	Flag State Administration was invited to take into account all the recommendations indicated in annex 5 of the report of the fourth meeting of the GESAMP-Ballast Water Working Group (MEPC 57/2) during further development of the system.
8.	Resource Ballast Technologies System MEPC 56/2/3 (South Africa)	Resource Ballast Technologies (Pty) Ltd.	MEPC 57/2/10, annex 5	4 April 2008 (MEPC 57)	Flag State Administration was invited to take into account all the recommendations indicated in annex 5 of the report of the fifth meeting of the GESAMP-Ballast Water Working Group (MEPC 57/2/10) during further development of the system.

	Name of the system and MEPC document related to the proposal for Basic Approval	Name of manufacturer	Relevant GESAMP- Ballast Water Working Group report	Date of Basic Approval	Specifications
9.	GloEn-Patrol™ Ballast Water Management System MEPC 57/2/4 (Republic of Korea)	Panasia Co., Ltd.	MEPC 57/2/10, annex 6	4 April 2008 (MEPC 57)	Flag State Administration was invited to take into account all the recommendations indicated in annex 6 of the report of the fifth meeting of the GESAMP-Ballast Water Working Group (MEPC 57/2/10) during further development of the system.
10.	OceanSaver® Ballast Water Management System (OS BWMS) MEPC 57/2/6 (Norway)	MetaFil AS	MEPC 57/2/10, annex 8	4 April 2008 (MEPC 57)	Flag State Administration was invited to take into account all the recommendations indicated in annex 8 of the report of the fifth meeting of the GESAMP-Ballast Water Working Group (MEPC 57/2/10) during further development of the system.
11.	TG Ballastcleaner and TG Environmentalguard System  MEPC 57/2/8 (Japan)	The Toagosei Group (TG Corporation, Toagosei Co. Ltd. and Tsurumi Soda Co. Ltd.)	MEPC 58/2/7, annex 5	10 October 2008 (MEPC 58)	Flag State Administration was invited to take into account all the recommendations indicated in annex 5 of the report of the sixth meeting of the GESAMP-Ballast Water Working Group (MEPC 58/2/7) during further development of the system.
12.	Greenship Sedinox Ballast Water Management System  MEPC 57/2/7 (Netherlands)	Greenship Ltd.	MEPC 58/2/7, annex 6	10 October 2008 (MEPC 58)	Flag State Administration was invited to take into account all the recommendations indicated in annex 6 of the report of the sixth meeting of the GESAMP-Ballast Water Working Group (MEPC 58/2/7) during further development of the system.

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13.	Ecochlor® Ballast Water Treatment System MEPC 58/2/2 (Germany)	Ecochlor, INC, Acton (USA)	MEPC 58/2/8, annex 5	10 October 2008 (MEPC 58)	Flag State Administration was invited to take into account all the recommendations indicated in annex 5 of the report of the seventh meeting of the GESAMP-Ballast Water Working Group (MEPC 58/2/8) during further development of the system.
14.	Blue Ocean Shield Ballast Water Management System  MEPC 59/2/2 (China)	China Ocean Shipping (Group) Company (COSCO)	MEPC 59/2/16, annex 7	17 July 2009 (MEPC 59)	Flag State Administration was invited to take into account all the recommendations indicated in annex 7 of the report of the eighth meeting of the GESAMP-Ballast Water Working Group (MEPC 59/2/16) during further development of the system.
15.	Hyundai Heavy Industries Co., Ltd. (HHI) Ballast Water Management System (EcoBallast)  MEPC 59/2/4 (Republic of Korea)	Hyundai Heavy Industries Co., Ltd. the Republic of Korea	MEPC 59/2/16, annex 8	17 July 2009 (MEPC 59)	Flag State Administration was invited to take into account all the recommendations indicated in annex 8 of the report of the eighth meeting of the GESAMP-Ballast Water Working Group (MEPC 59/2/16) during further development of the system.
16.	AquaTriComb™ Ballast Water Treatment System MEPC 59/2/8 (Germany)	Aquaworx ATC GmbH	MEPC 59/2/19, annex 6	17 July 2009 (MEPC 59)	Flag State Administration was invited to take into account all the recommendations indicated in annex 6 of the report of the ninth meeting of the GESAMP-Ballast Water Working Group (MEPC 59/2/19) during further development of the system.

	Name of the system and MEPC document related to the proposal for Basic Approval	Name of manufacturer	Relevant GESAMP- Ballast Water Working Group report	Date of Basic Approval	Specifications
17.	SiCURE™ Ballast Water Management System MEPC 59/2/11 (Germany)	Siemens Water Technologies	MEPC 60/2/11, annex 6	26 March 2010 (MEPC 60)	Flag State Administration was invited to take into account all the recommendations indicated in annex 6 of the report of the tenth meeting of the GESAMP-Ballast Water Working Group (MEPC 60/2/11) during further development of the system.
18.	Sunrui Ballast Water Management System (subsequently changed to BalClor Ballast Water Management System) MEPC 60/2/3 (China)	Qingdao Sunrui Corrosion and Fouling Control Company	MEPC 60/2/12, annex 6	26 March 2010 (MEPC 60)	Flag State Administration was invited to take into account all the recommendations indicated in annex 6 of the report of the eleventh meeting of the GESAMP-Ballast Water Working Group (MEPC 60/2/12) during further development of the system.
19.	DESMI Ocean Guard Ballast Water Management System MEPC 60/2/4 (Denmark)	DESMI Ocean Guard A/S	MEPC 60/2/12, annex 7	26 March 2010 (MEPC 60)	Flag State Administration was invited to take into account all the recommendations indicated in annex 7 of the report of the eleventh meeting of the GESAMP-Ballast Water Working Group (MEPC 60/2/12) during further development of the system.

Name of the system and MEPC document related to the proposal for Basic Approval	Name of manufacturer	Relevant GESAMP- Ballast Water Working Group report	Date of Basic Approval	Specifications
20. Blue Ocean Guardian Ballast Water Management System (subsequently changed to "ARA Ballast" Ballast Water Management System)	21st Century Shipbuilding Co., Ltd	MEPC 60/2/12, annex 8	26 March 2010 (MEPC 60)	Flag State Administration was invited to take into account all the recommendations indicated in annex 8 of the report of the eleventh meeting of the GESAMP-Ballast Water Working Group (MEPC 60/2/12) during further development of the system.
MEPC 60/2/5 (Republic of Korea)				
21. Hyundai Heavy Industries Co., Ltd. (HHI) Ballast Water Management System (HiBallast)  MEPC 60/2/6 (Republic of Korea)	Hyundai Heavy Industries Co., Ltd. the Republic of Korea	MEPC 60/2/16, annex 4	26 March 2010 (MEPC 60)	Flag State Administration was invited to take into account all the recommendations indicated in annex 4 of the report of the twelfth meeting of the GESAMP-Ballast Water Working Group (MEPC 60/2/16) during further development of the system.
22. Kwang San Co., Ltd. (KS) Ballast Water Management System "En-Ballast"  MEPC 60/2/7 (Republic of Korea)	Kwang San Co., Ltd.	MEPC 60/2/16, annex 5	26 March 2010 (MEPC 60)	Flag State Administration was invited to take into account all the recommendations indicated in annex 5 of the report of the twelfth meeting of the GESAMP-Ballast Water Working Group (MEPC 60/2/16) during further development of the system.

	Name of the system and MEPC document related to the proposal for Basic Approval	Name of manufacturer	Relevant GESAMP- Ballast Water Working Group report	Date of Basic Approval	Specifications
23.	OceanGuard™ Ballast Water Management System MEPC 60/2/8 (Norway)	Qingdao Headway Technology Co., Ltd.	MEPC 60/2/16, annex 6	26 March 2010 (MEPC 60)	Flag State Administration was invited to take into account all the recommendations indicated in annex 6 of the report of the twelfth meeting of the GESAMP-Ballast Water Working Group (MEPC 60/2/16) during further development of the system.
24.	Severn Trent De Nora BalPure <sup>®</sup> Ballast Water Management System MEPC 60/2/9 (Germany)	Severn Trent De Nora (STDN), LLC	MEPC 60/2/16, annex 7	26 March 2010 (MEPC 60)	Flag State Administration was invited to take into account all the recommendations indicated in annex 7 of the report of the twelfth meeting of the GESAMP-Ballast Water Working Group (MEPC 60/2/16) during further development of the system.
25.	Techwin Eco Co., Ltd. (TWECO) Ballast Water Management System (Purimar)  MEPC 61/2 (Republic of Korea)	Techwin Eco Co., Ltd.	MEPC 61/2/15, annex 4	1 October 2010 (MEPC 61)	Flag State Administration was invited to take into account all the recommendations indicated in annex 4 of the report of the thirteenth meeting of the GESAMP-Ballast Water Working Group (MEPC 61/2/15) during further development of the system.

	Name of the system and MEPC document related to the proposal for Basic Approval	Name of manufacturer	Relevant GESAMP- Ballast Water Working Group report	Date of Basic Approval	Specifications
26.	AquaStar Ballast Water Management System MEPC 61/2/1 (Republic of Korea)	AQUA Eng. Co., Ltd.	MEPC 61/2/15, annex 5	1 October 2010 (MEPC 61)	Flag State Administration was invited to take into account all the recommendations indicated in annex 5 of the report of the thirteenth meeting of the GESAMP-Ballast Water Working Group (MEPC 61/2/15) during further development of the system.
27.	Kuraray Ballast Water Management System MEPC 61/2/6 (Japan)	Kuraray Co., Ltd.	MEPC 61/2/21, annex 4	1 October 2010 (MEPC 61)	Flag State Administration was invited to take into account all the recommendations indicated in annex 4 of the report of the fourteenth meeting of the GESAMP-Ballast Water Working Group (MEPC 61/2/21) during further development of the system.

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ANNEX 2

LIST OF BALLAST WATER MANAGEMENT SYSTEMS THAT MAKE USE OF ACTIVE SUBSTANCES WHICH RECEIVED FINAL APPROVAL IN ACCORDANCE WITH PROCEDURE (G9)

	Name of the system and EPC document related to the proposal for Final Approval	Name of manufacturer	Relevant GESAMP-Ballast Water Working Group report	Date of Final Approval	Specifications
1.	PureBallast System  MEPC 56/2/1 (Norway)	Alfa Laval/ Wallenius Water AB	MEPC 56/2/2, annex 5	13 July 2007 (MEPC 56)	Flag State Administration was invited to verify that the concerns raised in annex 5 of the report of the third meeting of the GESAMP-Ballast Water Working Group (MEPC 56/2/2) with regard to ship and crew safety have been fully addressed prior to the issuance of Type Approval certificate.
2.	SEDNA® Ballast Water Management System (Using Peraclean® Ocean) MEPC 57/2/5 (Germany)	Degussa GmbH, Germany	MEPC 57/2/10, annex 7	4 April 2008 (MEPC 57)	Flag State Administration was invited to take into account all the recommendations contained in annex 7 of the report of the fifth meeting of the GESAMP-Ballast Water Working Group (MEPC 57/2/10) prior to the issuance of Type Approval Certificate.
3.	Electro-Cleen™ System  MEPC 58/2 (Republic of Korea)	Techcross Ltd. and Korea Ocean Research and Development Institute (KORDI)	MEPC 58/2/7, annex 7	10 October 2008 (MEPC 58)	Not applicable.
4.	OceanSaver® Ballast Water Management System (OS BWMS) MEPC 58/2/1 (Norway)	MetaFil AS	MEPC 58/2/8, annex 4	10 October 2008 (MEPC 58)	Flag State Administration was invited to verify that all the recommendations contained in annex 4 of the report of the seventh meeting of the GESAMP-BWWG (MEPC 58/2/8) have been fully addressed prior to the issuance of a Type Approval Certificate.

	Name of the system and EPC document related to the proposal for Final Approval	Name of manufacturer	Relevant GESAMP-Ballast Water Working Group report	Date of Final Approval	Specifications
5.	RWO Ballast Water Management System (CleanBallast) MEPC 59/2 (Germany)	RWO GmbH Marine Water Technology, Germany	MEPC 59/2/16, annex 5	17 July 2009 (MEPC 59)	Flag State Administration was invited to verify that all the recommendations contained in annex 5 of the report of the eighth meeting of the GESAMP-BWWG (MEPC 59/2/16) have been fully addressed prior to the issuance of a Type Approval Certificate.
6.	, ,,	NK Company Ltd., the Republic of Korea	MEPC 59/2/16, annex 6	17 July 2009 (MEPC 59)	Flag State Administration was invited to verify that all the recommendations contained in annex 6 of the report of the eighth meeting of the GESAMP-BWWG (MEPC 59/2/16) have been fully addressed prior to the issuance of a Type Approval Certificate.
7.	, , ,	Hitachi, Ltd. /Hitachi Plant technologies, Ltd.	MEPC 59/2/19, annex 4	17 July 2009 (MEPC 59)	Flag State Administration was invited to verify that all the recommendations contained in annex 4 of the report of the ninth meeting of the GESAMP-BWWG (MEPC 59/2/19) have been fully addressed prior to the issuance of a Type Approval Certificate.
8.	Greenship Sedinox Ballast Water Management System MEPC 59/2/6 (Netherlands)	Greenship Ltd	MEPC 59/2/19, annex 5	17 July 2009 (MEPC 59)	Flag State Administration was invited to verify that all the recommendations contained in annex 5 of the report of the ninth meeting of the GESAMP-BWWG (MEPC 59/2/19) have been fully addressed prior to the issuance of a Type Approval Certificate.

	Name of the system and EPC document related to the proposal for Final Approval	Name of manufacturer	Relevant GESAMP-Ballast Water Working Group report	Date of Final Approval	Specifications
9.	GloEn-Patrol™ Ballast Water Management System MEPC 59/2/7 (Republic of Korea)	Panasia Co., Ltd.	MEPC 60/2/11, annex 4	26 March 2010 (MEPC 60)	Flag State Administration was invited to verify that all the recommendations contained in annex 5 of the report of the tenth meeting of the GESAMP-BWWG (MEPC 60/2/11) have been fully addressed prior to the issuance of a Type Approval Certificate.
10.	Resource Ballast Technologies System  MEPC 59/2/10 (South Africa)	Resource Ballast Technologies (Pty) Ltd.	MEPC 60/2/11, annex 7	26 March 2010 (MEPC 60)	Flag State Administration was invited to verify that all the recommendations contained in annex 7 of the report of the tenth meeting of the GESAMP-BWWG (MEPC 60/2/11) have been fully addressed prior to the issuance of a Type Approval Certificate.
11.	JFE Ballast Water Management System MEPC 60/2/2 (Japan)	JFE Engineering Corporation	MEPC 60/2/12, annex 5	26 March 2010 (MEPC 60	Flag State Administration was invited to verify that all the recommendations contained in annex 5 of the report of the eleventh meeting of the GESAMP-BWWG (MEPC 60/2/12) have been fully addressed prior to the issuance of a Type Approval Certificate.
12.	Hyundai Heavy Industries Co., Ltd. (HHI) Ballast Water Management System (EcoBallast)  MEPC 60/2/1 (Republic of Korea)	Hyundai Heavy Industries Co., Ltd.	MEPC 59/2/16, annex 8	26 March 2010 (MEPC 60	Flag State Administration was invited to verify that all the recommendations contained in annex 8 of the report of the eighth meeting of the GESAMP-BWWG (MEPC 59/2/16) have been fully addressed prior to the issuance of a Type Approval Certificate.

Name of the system and MEPC document related to the proposal for Final Approval	Name of manufacturer	Relevant GESAMP-Ballast Water Working Group report	Date of Final Approval	Specifications
13. Special Pipe Hybrid Ballast Water Management System combined with Ozone treatment version (SP-Hybrid BWMS Ozone version)  MEPC 61/2/2 (Japan)	Mitsui Engineering & Shipbuilding Co., Ltd.	MEPC 61/2/15, annex 6	1 October 2010 (MEPC 61)	Flag State Administration was invited to verify that all the recommendations contained in annex 6 of the report of the thirteenth meeting of the GESAMP-BWWG (MEPC 61/2/15) have been fully addressed prior to the issuance of a Type Approval Certificate.
14. "ARA Ballast" Ballast Water Management System  MEPC 61/2/5 (Republic of Korea)	21st Century Shipbuilding Co., Ltd.	MEPC 61/2/15, annex 8	1 October 2010 (MEPC 61)	Flag State Administration was invited to verify that all the recommendations contained in annex 8 of the report of the thirteenth meeting of the GESAMP-BWWG (MEPC 61/2/15) have been fully addressed prior to the issuance of a Type Approval Certificate.
15. BalClor Ballast Water Management System MEPC 61/2/4 (China)	Qingdao Sunrui Corrosion and Fouling Control Company	MEPC 61/2/15, annex 9	1 October 2010 (MEPC 61)	Flag State Administration was invited to verify that all the recommendations contained in annex 9 of the report of the thirteenth meeting of the GESAMP-BWWG (MEPC 61/2/15) have been fully addressed prior to the issuance of a Type Approval Certificate.
<ul><li>16. OceanGuard™ Ballast Water Management System</li><li>MEPC 61/2/7 (Norway)</li></ul>	Qingdao Headway Technology Co., Ltd.	MEPC 61/2/21, annex 5	1 October 2010 (MEPC 61)	Flag State Administration was invited to verify that all the recommendations contained in annex 5 of the report of the fourteenth meeting of the GESAMP-BWWG (MEPC 61/2/21) have been fully addressed prior to the issuance of a Type Approval Certificate.

Name of the system and MEPC document related to the proposal for Final Approval	Name of manufacturer	Relevant GESAMP-Ballast Water Working Group report	Date of Final Approval	Specifications
17. Ecochlor® Ballast Water Management System  MEPC 61/2/8 (Germany)	Ecochlor, INC, Acton, United States	MEPC 61/2/21, annex 6	1 October 2010 (MEPC 61)	Flag State Administration was invited to verify that all the recommendations contained in annex 6 of the report of the fourteenth meeting of the GESAMP-BWWG (MEPC 61/2/21) have been fully addressed prior to the issuance of a Type Approval Certificate.
18. Severn Trent De Nora BalPure® Ballast Water Management System MEPC 61/2/9 (Germany)	Severn Trent De Nora (STDN), LLC	MEPC 61/2/21, annex 7	1 October 2010 (MEPC 61)	Flag State Administration was invited to verify that all the recommendations contained in annex 7 of the report of the fourteenth meeting of the GESAMP-BWWG (MEPC 61/2/21) have been fully addressed prior to the issuance of a Type Approval Certificate.