



Ref. T5/1.01

MEPC.5/Circ.9
31 August 2005

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POLLUTION PREVENTION EQUIPMENT REQUIRED BY MARPOL 73/78

1 MARPOL 73/78 requires ships to be fitted with certain pollution prevention equipment (PPE), including oil filtering equipment, oil content meters, oil/water interface detectors and sewage treatment plants. Such equipment should be of the type which has been approved by Governments in accordance with the relevant resolutions adopted by the Organization.

2 Over the years, the Organization has adopted a series of resolutions on PPE performance and test specifications, which include the following:

- .1 Guidelines and Specifications for Pollution Prevention Equipment for Machinery Space Bilges of Ships (resolution MEPC.60(33));
- .2 Revised Guidelines and Specifications for Oil Discharge Monitoring and Control Systems for Oil Tankers (resolution A.586(14));
- .3 Specification for Oil/Water Interface Detectors (resolution MEPC.5(XIII)) ;
- .4 Recommendation on International Effluent Standards and Guidelines for Performance Tests for Sewage Treatment Plants (resolution MEPC.2(VI));
- .5 Standard Specification for Shipboard Incinerators (resolution MEPC.59(33));
- .6 Revised Guidelines and Specifications for Pollution Prevention Equipment for Machinery Space Bilges of Ships (resolution MEPC.107(49)); and
- .7 Revised Guidelines and Specifications for Oil Discharge Monitoring and Control Systems for Oil Tankers (resolution MEPC.108(49)).

3 It should be noted that the Standard Specification for Shipboard Incinerators contained in Appendix 2 to the Revised Guidelines for the Implementation of Annex V of MARPOL 73/78 adopted by resolution MEPC.59(33) is superseded by the new Standard Specification for Shipboard Incinerators adopted by resolution MEPC.76(40), as amended by resolution MEPC.93(45), as a result of the adoption of Annex VI of MARPOL 73/78 - Regulations for the Prevention of Air Pollution from Ships.

4 It should also be noted that the Revised Guidelines and Specifications for Pollution Prevention Equipment for Machinery Space Bilges of Ships adopted by resolution MEPC.107(49) on 18 July 2003 supersedes the Guidelines and Specifications for Pollution Prevention Equipment for Machinery Space Bilges of Ships adopted by resolution MEPC.60(33) on 30 October 1992; and that the Revised Guidelines and Specifications for Oil Discharge Monitoring and Control Systems for Oil Tankers adopted by resolution MEPC.108(49) on 18 July 2003 are intended to replace the Guidelines and Specifications for Oil Discharge Monitoring and Control Systems for Oil Tankers adopted by resolution A.586(14) on 20 November 1985.

5 By the resolutions, Governments are also invited to inform the Organization of those PPE which have been tested and approved by them.

6 In order that PPE installed on board ships are those which have been tested and approved by Governments, the Secretariat of the Organization, since 1980, has been collecting and disseminating information on approved PPE through annual MEPC circulars.

7 In this connection, it will be recalled that MEPC 36 (31 October to 4 November 1994), taking into account the fact that certain resolutions on PPE have been superseded by others, decided that, from 1996, MEPC circulars on PPE will only list those which have been approved by Governments in accordance with resolutions MEPC.60(33), A.586(14), MEPC.5(VIII), MEPC.2(VI) and MEPC.59(33).

8 In accordance with the decision of MEPC 36, and taking into account subsequent developments, the present annual circular has the following seven annexes:

- Annex 1 Oil filtering equipment (15ppm equipment) approved in accordance with part 1 of the Annex of resolution MEPC.60(33)
- Annex 2 Oil content meters (for bilge alarms) approved in accordance with part 2 of the Annex of resolution MEPC.60(33)
- Annex 3 Oil content meters (for oily water from cargo tanks) approved in accordance with part 1 of the Annex of resolution A.586(14)
- Annex 4 Oil/water interface detectors approved in accordance with resolution MEPC.5(XIII)
- Annex 5 Sewage treatment plants approved in accordance with resolution MEPC.2(VI)
- Annex 6 Shipboard Incinerators approved in accordance with appendix 2 of resolution MEPC.59(33) and resolution MEPC.76(40), as amended by resolution MEPC.93(45)
- Annex 7 15 ppm Bilge Separators approved in accordance with part 1 of the Annex to resolution MEPC.107(49)
- Annex 8 15 ppm Bilge Alarms approved in accordance with part 2 of the Annex to resolution MEPC.107(49)

9 Additional annexes will be appended to subsequent issues of this Circular incorporating new PPE approved in accordance with resolutions MEPC.107(49) and MEPC.108(49), when necessary.

10 Governments are invited, as appropriate, to bring this circular to the attention of their Administrations, authorities and industries concerned.

11 It should be noted that the lists of PPE in this circular are compiled on the basis of information submitted by Governments, and that non-entry of equipment may not necessarily mean that such equipment has not been approved by Governments.

12 It should also be noted that, for control purposes of whether equipment had been approved, e.g. oil filtering equipment and oil content meters which had been approved in accordance with I:\CIRC\MEPC\05\9.DOC

resolution A.393(X), reference could always be made to an earlier MEPC circular on PPE, especially MEPC/Circ.296, which listed all pollution prevention equipment approved by Governments before 1995.

13 With the aim of having a concise yet adequate MEPC Circular on approved PPE, it would be highly appreciated if Governments could, when submitting the certificates of PPE newly approved by them, attach a list of such equipment in accordance with the established “one-line” entry format of this circular for each type of equipment.

ANNEX 1**OIL FILTERING EQUIPMENT****(15 ppm equipment)****Approved in accordance with part 1 of the Annex to
resolution MEPC.60(33)**

Manufacturing Countries	Manufactured by	Type and Model	Maximum Throughput m ³ /h	Approving Governments
1. China	1. Shanghai Marine Instrument & Equipment Works 200 Minseng Road Shanghai	ZYF-0.25 ZYF-0.5 ZYF-1 ZYF-1.5 ZYF-3 ZYF-5 ZYF-10	0.25 0.50 1.0 1.5 3.0 5.0 10.0	China China China China China China China
2. Germany	1. NFV nord-deutsche Filter-Vertriebs-GmbH Glashüttenstr. 79 20357 Hamburg	MOWS-100 MOWS-250 PPT-BWS-100 PPT-BWS-250 PPT-BWS-500 PPT-BWS-1000 PPT-BWS-2500 PPT-BWS-5000 PPT-BWS-10000	0.1 0.25 0.1 0.25 0.5 1.5 2.5 5.0 10.0	FRG FRG FRG FRG FRG FRG FRG FRG FRG
	2. Blohm & Voss AG Hermann-Blohmstr. 3 20457 Hamburg	TCS-0.25-HD TCS-0.5-HD TCS-1-HD TCS-2.5-HD TCS-5-HD TCS-10-HD	0.25 0.5 1.0 2.5 5.0 10.0	FRG; China; RF FRG; China; RF FRG; China; RF FRG; China; RF FRG; China; RF FRG; China; RF
	3. DVZ-Services GmbH Kirchweyher Strasse 8, D-28844 Weyhe, Germany	DVZ 150VC DVZ 250VC DVZ 500VC DVZ 1000VC DVZ 1500VC DVZ 2500VC DVZ 5000VC DVZ 7000VC DVZ 250PC DVZ 500PC DVZ 1000PC DVZ 2500PC DVZ 5000PC DVZ 10000PC DVZ 7500PC	0.15 0.25 0.5 1.0 1.5 2.5 5.25 7.0 0.25 0.50 1.0 2.5 5.0 10.0 7.5	Italy China; FRG; RF; Italy China; FRG; RF; Italy China; FRG; RF; Italy FRG China; FRG; RF; Italy China; FRG; RF; Italy China; FRG; RF; Italy FRG FRG FRG FRG FRG FRG FRG

Note: Ar: Argentina; Belg: Belgium; BG: Bulgaria; Can: Canada; Cro: Croatia; Den: Denmark; Fin: Finland; Fr: France; FRG: Federal Republic of Germany (Germany); Gr: Greece; Ice: Iceland; Indo: Indonesia; Jpn: Japan; Lux: Luxembourg, Grand Duchy; Neth: Netherlands; Nor: Norway; Pol: Poland; P: Portugal; RF: Russian Federation; ROK: Republic of Korea; Sig: Singapore; Sw: Sweden; UK: United Kingdom of Great Britain and Northern Ireland; USA: United States of America; Yugo: Yugoslavia.

Manufacturing Countries	Manufactured by	Type and Model	Maximum Throughput m3/h	Approving Governments
2. Germany (Cont'd)	4. RWO GmbH Leerkämpe 3 D-28259 Bremen	SKIT S 0.1 SKIT S 0.25 SKIT S 0.5 SKIT S 1.0 SKIT S 1.5 SKIT S 2.5 SKIT S 5.0 SKIT S 10.0	0.1 0.25 0.5 1.0 1.5 2.5 5.0 10.0	China; FRG; RF China; FRG; RF
	5. Facet Deutschland GmbH St. Huberter Str. 21 D-47906 Kempen	CPS-2.5 B MK III CPS-5B MK III CPS-10B MK III CPS-50B MK III	0.5 1.0 2.5 5.0 10.0	FRG FRG FRG FRG FRG
	6. Westfalia Separator Mineraloil Systems GmbH Werner-Habig-Str.1 D-59302 Oelde Germany	WSC 5-01-006 WSC 25-01-006 WSD 18-01-037	1.5 6.0 3.0	FRG FRG FRG
	7. B + V Industrie-technik GmbH Hermann-Blohm-Str.5 20457 Hamburg Germany	Turbolo Entöler: TPC 0.25H TCS 0.25HD TCS 0.5HD TCS 1.0HD TCS 2.5HD TCS 5.0HD TCS 10.0HD	0.25 0.25 0.5 1.0 2.5 5.0 10.0	FRG FRG FRG FRG FRG FRG FRG
3. Greece	Environmental Protection Engineering S.A. 24, Dervenakion Str., Piraeus 185-45, Greece	POSEIDON 2000 SP 1.0 POSEIDON 2000 SP 2.5 POSEIDON 2000 SP 5.0 POSEIDON 2000 SP 7.5 POSEIDON 2000 SP 10.0	1.0 2.5 5.0 7.5 10.0	Gr; Nor

Manufacturing Countries	Manufactured by	Type and Model	Maximum Throughput m ³ /h	Approving Governments
4. Japan	1. Taiko Kikai Industries Co. Ltd. 209-1 Shimo Tabuse Tabuse Cho Kumage-gun Yamaguchi Pref. Japan 742-15	USC-01 USC-03 USC-05 USC-10 USC-20 USC-50	0.15 0.25 0.5 1.0 2.0 5.0	China UK; China UK; China UK; China UK; China UK; China
	2. Sasakura Engineering Co. Ltd. Osaka	SMT-1A SMT-2A SMT-3A SMT-5A SMT-10A	1.0 2.0 3.0 5.0 10.0	UK; Nor UK; Nor UK; Nor UK; Nor UK; Nor
	3. Heishin Pump Works Co., Ltd. 5-30, 1-chome, Furuta, Harima-cho, Kako-gun, Hyogo Prf., 675-01 Japan	HMS-30 HMS-50 HMS-80 HMS-100 HMS-200 HMS-250 HSN-2F HSN-3F HSN-5F HSN-10F	0.3 0.5 0.8 1.0 2.0 2.5 2.0 3.0 5.0 10.0	FRG; UK; RF; Nor FRG; UK; RF; Nor RF; Nor FRG; UK; RF; Nor FRG; UK; RF; Nor RF; Nor
5. Lithuania	Shipbuilding Yard "Baltija" Pilies St. 8 5799 Klaipeda	VKF 0.6 VKF 1.6 VKF 2.5	0.6 1.6 2.5	RF RF RF
6. Netherlands	1. Facet Industrie BV Draaibrugweg 10 1332 AD Almere - De Vaart	CPS-2.5 BV MOD I CPS-5 BV MOD I	0.5 1.0	FRG; Neth; UK FRG; Neth; UK
	2. Promac B.V. The Netherlands	AQUACLEANER -C-BW-2-S-6 AQUACLEANER -C-BW-S-24 AQUACLEANER -C-BW-160 AQUACLEANER -C-BW-2-S-24 AQUACLEANER -C-BW-2-S-48 AQUACLEANER -C-BW-4-S-48	0.03 0.06 0.1 0.12 0.24 0.48	Neth. Neth. Neth. Neth. Neth. Neth.
7. Norway	Merlin Clearwater AS, Kristiansand Norway	CLEAR WATER SEP 2500	2.5	Nor

Manufacturing Countries	Manufactured by	Type and Model	Maximum Throughput m ³ /h	Approving Governments
7. Norway (Cont'd)	2. Goodtech ASA Stokke Norway	LENSEP SP 1000A LENSEP SP 2500A LENSEP SP 5000A	1.0 2.5 5.0	Nor Nor Nor
8. Poland	P.Z.U.O. "WARNA" - Grudzi dz	NEPTUN 0.25 B1 NEPTUN 0.5 B1 NEPTUN 1.0 A1, 1.0 B1 NEPTUN 2.5 A1 NEPTUN 5.0 A1	0.25 0.5 1.0 2.5 5.0	Pol; FRG Pol; FRG Pol; FRG Pol; FRG Pol; FRG
9. Republic of Korea	1. Han Young Engineering Co., Chung-Gu Inchon	OS - 0.15 OS - 0.3 OS - 0.5 OS - 1.0 OS - 2.0 OS - 3.0 OS - 5.0 OS - 10.0	0.15 0.3 0.5 1.0 2.0 3.0 5.0 10.0	ROK ROK ROK; RF; Nor ROK; RF; Nor ROK; Nor ROK; Nor ROK; Nor ROK; Nor ROK; Nor
	2. GeoRim Engineering Co., Seo-Gu Busan	UST - 02G UST - 03G UST - 05G UST - 10G UST - 20NG UST - 50NG UST - 100NG POS - 2000 POS - 5000 POS - N2 POS - N5 POS - N10	0.2 0.3 0.5 1.0 2.0 5.0 10.0 2.0 5.0 2.0 5.0 10.0	ROK ROK; Nor ROK; Nor ROK; Nor ROK; Nor ROK; Nor ROK; Nor Nor Nor Nor Nor Nor
	3. Korea Ship's Chandler Co., Ltd., Yeoungdo-Gu Busan	KSO-01A KSO-02A KSO-03A KSO-05A KSO-10A KSO-20A KSO-50A	0.1 0.2 0.3 0.5 1.0 2.0 5.0	ROK ROK ROK ROK ROK ROK ROK
	4. Marine Technical Engineering Co., Ltd., Keumjung-Gu Busan	MTE FL-10 MTE FL-20 MTE FL-50 MTE FL-10	1.0 2.0 5.0 10.0	ROK ROK ROK ROK
	5. Georim Engineering Co., Seo-Gu Busan	PSO-2000 PSO-5000	2.0 5.0	ROK ROK

Manufacturing Countries	Manufactured by	Type and Model	Maximum Throughput m ³ /h	Approving Governments
10. Russian Federation	1. "EKOS Ltd." Barrikadnaja St.36 Fl. 8 198096 ST. St. Petersburg	OHB-0.1m OHB-0.5m OHB-1m OHB-0.5m/n OHB-1.0m/n OHB-1.6m/n	0.1 0.5 1.0 0.5 1.0 1.6	RF RF RF RF RF RF
	2. A/S "Sudotechnika" N. Novgorod	OHB-4	0.2	RF
11. Spain	DETEGASA Ctra. Castro-Meiras 1550 Valdoviño La Coruña	DELTA OWS-0.5 DELTA OWS-1 DELTA OWS-2 DELTA OWS-3.75 DELTA OWS-5	0.5 1 2 3.75 5	Spain Spain Spain Spain Spain
12. Sweden	1. JOWA AB Gothenburg Sweden	JOWA OIL – A TRIOSEP	1.0 2.5 5.0 10.0	Nor Nor Nor Nor
	2. Alfa Laval Tumba AB Tumba Sweden	CentriBilge 5000	5.0	Nor
13. Ukraine	1. PKB "Progress" Nikolaev	UOV 0.6/10 UOV 0.6/10P UOV 1.6/10 UOV 2.5/10	0.6 0.6 1.6 2.5	RF RF RF RF
	2. Shipyard "Ocean" Nikolaev	CK 10M2	10.0	RF
	3. Pilot Production of YuzhNI IMF Odessa	USFA-0.6 USFA-1.6 USFA-4 USFA-5 USFA-10 USF-4M	0.6 1.6 4.0 5.0 10.0 4.0	RF RF RF RF RF RF
14. United Kingdom	1. Hamworthy Engineering Ltd. Poole, Dorset	HS 1 Mk II HS 2.5 Mk II HS 5 Mk II HS 10Mk II	1.0 2.5 5.0 10.0	UK; FRG; Pol; RF UK; FRG; Pol; RF UK; FRG; Pol; RF UK; Pol; RF
	2. Parmatic Esplen Ltd. Scunthorpe England	'Comyn' Oily Water Separating Module	5.0	UK

Manufacturing Countries	Manufactured by	Type and Model	Maximum Throughput m ³ /h	Approving Governments
14. United Kingdom (Cont'd)	3. Hodge Separators Ltd. 1 Jennings Road Kerwick Industrial Estate Penryn Cornwall TR10 9 LY	Victor 2 Stage: MS Series 0.5 m ³ /h MS Series 1 m ³ /h MS Series 2 m ³ /h MS Series 3 m ³ /h MS Series 4 m ³ /h MS Series 5 m ³ /h MS Series 10 m ³ /h	0.5 1.0 2.0 3.0 4.0 5.0 10.0	UK UK UK UK UK UK UK
15. United States	1. Ensolve Biosystems, Inc. 3209 Gresham Lake Rd. Suite 147 Raleigh, NC 27615	Petroliminator 100 Petroliminator 300 Petroliminator 630	0.23 0.34 0.45	USA USA USA
	2. RGF Environmental Systems, Inc. 3875 Fiscal Court West Palm Beach, FL 33404	RGF 4000C	0.17	USA
	3. Facet International, Inc. P.O. Box 50096 (74150) 9910 E. 56th St. North Tulsa, OK 74117	CPS-2.5B MK III CPS-5B MK III CPS-10B MK III CPS-25B MK III CPS-50B MK III CPS-75B MK III CG-25 CG-25EXP CPS-1.6 CPS-3.2 OPB-10NP/ SR02-220	0.50 1.0 2.5 5.0 10.0 15.0 5.7 5.7 0.36 0.727 2.27	USA USA USA USA USA USA USA USA USA USA USA
	4. Harco Manufacturing Co. 7700 SW 69th Ave. Portland, OR 97223	HMC 1-2 HMC 1-4 HMC 1-6 HMC 1-8	0.45 0.90 1.36 1.8	USA USA USA USA
	5. National Fluid Separators, Inc. P.O. Box 330 Route 3, Highway U Cole Camp, MO 65325	Bilgemaster II 2GPM Bilgemaster II 5GPM Bilgemaster II 10GPM	0.46 1.14 2.27	USA USA USA
	6. Nelson Division Ink. Highway 51 West P.O. Box 428 Stoughton, WI 53589	Nelson Model 10025 Nelson Model 10075	0.5 2.0	RF RF

Manufacturing Countries	Manufactured by	Type and Model	Maximum Throughput m ³ /h	Approving Governments
15. United States (Cont'd)	7. Parmatic Pollution Control Corp 88 Ford Road Denville, NJ 07834-1634	S2-25 S2-4-A S2-8-A S2-4-A5 S2-8-A5 S2-8-C5 S2-3.5T S2-1T S2-2TA S2-2T S2-0.5T S2-10-A S2-16-A S2-20-A S2-50-A S2-8-L S2-33-A	5.68 0.90 1.80 0.90 1.80 1.80 3.50 0.90 1.80 1.80 0.45 2.27 3.60 4.50 11.36 1.80 7.27	USA USA USA USA USA USA USA USA USA USA USA USA USA USA USA USA USA USA
	8. Recovered Energy Incorporated 15138 West Hunziker Road Pocatello, ID 83202	BOSS 5 BOSS 10 BOSS 25 BOSS 45	1.1 2.3 5.7 10.2	USA USA USA USA
	9. Separation & Recovery Sys. 1762 McGaw Avenue IRVINE, California 92714	SAREX 5 GPM Tipo OWS SAREX 10 GPM Tipo OWS SAREX VGS-1 SAREX VGS-2 SAREX VGS-5 GPM SAREX VGS-10 SAREX 60 GPM SAREX 100 GPM SAREX VGS-25 SAREX VGS-50	1.14 2.27 4.54 0.227 0.45 1.14 2.27 13.62 22.7 22.7 5.675 11.35	Italy; RF Italy; RF Italy; RF Italy; RF Italy; RF Italy; RF Italy; RF Italy; RF Italy; RF RF RF RF
	10. Separation Technologies 2931 Elm Hill Pike Nashville, TN 37214	BB 00311 DXX BB 00322 DXX BB 00811 DXX BB 00822 DXX	0.568 0.568 2.26 2.26	USA USA USA USA
	11. Village Marine Tec. 2000 West 135th Street Gardena, CA 90249	OWS 2.2 OWS 4.4 OWS 8.8 OWS 11	0.50 1.0 2.0 2.5	USA USA USA USA

Manufacturing Countries	Manufactured by	Type and Model	Maximum Throughput m ³ /h	Approving Governments
15. United States (Cont'd)	12. Coffin World Water System, Inc. 1762 McGaw Avenue Irvine, CA 92714	HELI-SEPT 500 HELI-SEPT 1000 HELI-SEPT 2000 HELI-SEPT 2500 HELI-SEPT 5000 HELI-SEPT100000	0.5 1.0 2.0 2.5 5.0 10.0	RF RF RF RF RF RF

ANNEX 2**OIL CONTENT METERS
(for bilge alarms)**

**Approved in accordance with part 2 of the Annex to
resolution MEPC.60(33)**

Manufacturing Countries	Manufactured by	Type and Model	Bilge Alarms (15 ppm)	Approving Governments
1. Belgium	DIGATRON bv ba Gundensporenlaan 49 3120 Tremelo	ELCOM 7	X	Lux
2. France	Seres 355, rue Albert Einstein 13793 Aix en Provence CEDEX 3	BWAM MINI S 646 A	X	Italy; RF
3. Germany	1. Deckma-RTE International Sales GmbH	OCD 1 OCD 2	X X	FRG FRG
	2. DECKMA Hamburg GmbH Kieler Strasse 316 22525 Hamburg, Germany	OCD 1 OCD 2 OCD 1M OCD 2M OMD 11 OMD 8 OMD 21	X X X X X X X	FRG; China; RF; Italy FRG; China; RF; Italy Italy; RF Italy, RF FRG; RF FRG FRG
	3. GESTRA GmbH, Münchener Straße 77, D-28215 Bremen, Germany	OR 52/3 OR 52/5	X X	FRG FRG
4. Greece	Environmental Protection Engineering S.A. 24 Dervenakion St. Piraeus 185-45 Greece	DPL-15	X	Gr; Nor
5. Japan	Fellow Kogyo Co. Ltd. Tokyo	FOCAS-1500C	X	UK; China; Nor
6. Poland	Centrum Techniki Okętowej-Gdansk	SZW-6P SZW-7 SZW-10	X X X	Pol Pol Pol

Manufacturing Countries	Manufactured by	Type and Model	Maximum Throughput m3/h	Approving Governments
7. Republic of Georgia	"Tbilpribor" Works Moskovskij Avenue 24a, 380037 Tbilisi	AUF-201	X	RF
8. Republic of Korea	1. Maritime Technical Engineering Co. Ltd. Keum Jung-gu, Pusan-city	MTE-100	X	ROK
	2. Oyang Kong Joki Co. Ltd. Ansan-city Kyungki-do	OYB-1	X	ROK; Nor
9. Russian Federation	NPF «LUMEKS» Moskowskai Avenue 19, 198005 St. Petersburg	FLUORAT-411	X	RF
10. Spain	DETEGASA Ctra. Castro-Meiras 1550 Valdoviño La Coruña	DELTA HM-01	X	Spain
11. Sweden	JOWA AB Tulebo 865 42834 Kalleder Goteborg	JOWA M-93	X	RF; Nor
12. United Kingdom	1. Rivertrace Engineering Ltd. Sutton, Surrey England	OCD 1 OCD 2 OCD 1M OCD 2M OCD CM	X X X X X	FRG FRG RF; UK RF; UK Lux
	2. Bristol Babcock Ltd. Croydon, England	OPM 1	X	UK
13. United States	1. HF Scientific, Inc. 3170 Metro Parkway Fort Myers, FL 33916-7597	BA/1 20075	X X	USA USA
	2. Inventive Systems, Inc. P.O. Box 220 Lexington Park, MD 20653	BA – 200 OS – 100M	X X	USA USA

Manufacturing Countries	Manufactured by	Type and Model	Maximum Throughput m ³ /h	Approving Governments
13. United States (Cont'd)	3. Separation & Recovery Sys. 1762 Mcgaw Avenue IRVINE, California 92714	SAREX BA - 1 OCA-1	X X	Italy; RF RF
	4. Turner Designs 845 W. Maude Ave. Sunnyvale, CA 94086	TD-4100 XD with bubbletrap TD-4100 XD without bubbletrap TD-4100 with bubbletrap TD-4100 without bubbletrap	X X X X	USA USA USA USA
	5. Coffin World Water System, Inc. 1762 Mcgaw Avenue Irvine, CA 92714	BA - 100	X	USA

ANNEX 3

OIL CONTENT METERS
(for oily water from cargo tanks)
Approved in accordance with part 1 of the Annex to resolution A.586(14)

Manufacturing Countries	Manufactured by	Type and Model	Acceptable for				Approving Governments
			Crude oils	"Black" products	"white" products	oil-like noxious liquid substances	
1. Finland	1. Sähköliikkeiden Oy, Vantaa, Finland ISLOI	OILI S-1000	X	X	X		Pol; FRG
	2. Sähköliikkeiden Oy, Sähkömestä PL 88 Steinhof	OILI S-1000 MARK B					RF
	3. OPTEC-International Ltd. Helsinki, Finland	OILI S-1000	X	X	X		FRG
2. France	SERES Rue Albert Einstein Z.I. d'Aix en Prov. 13762 les Milles Cedex	ODME S-663 MK II DRUR 5450 ODME S-663 MK III	X X	X X	X X	X X	UK; USA; Can; Pol; China; Italy; RF UK China; RF
3. Germany	1. AEG-Aktiengesellschaft FRG	OILI S-1000	X	X	X		Pol; China
	2. AEG Telefunken 2000 Hamburg 11 Steinhof 9	OILI S-1000 MARK B					FRG; UK; RF
4. Italy	NAVALIMPIANTI Spa Salita alla Guardia, 55 Ceranesi, Genova	Sintesi 3000/2 - 30 L Sintesi 3P - 30 L Sintesi 3000 - 30 L					Italy Italy Italy

Manufacturing Countries	Manufactured by	Type and Model	Acceptable for				Approving Governments
			Crude oils	"Black" products	"white" products	oil-like noxious liquid substances	
5. Japan	1. Sasakura Engineering Co. Ltd.	OTM 17XA MK II	X	X	X		UK; China; Jpn
		OTM 17 OTM 18					UK UK
	2. Tokyo Keiki Co. Ltd.	DR 1000					UK
	3. Hoyiba Ltd.	OCMA-1000					UK
6. Netherlands	VAF Instruments BV P.O. Box 40-3300 AA Bordrecht, The Netherlands	OILCON MK 4	X	X	X	X	Neth; UK; USA; RF
		OILCON MK 4C	X	X	X	X	USA
		ITT "OILCON" MKIV					UK
		OILCON MK5	X	X	X	X	UK; Neth; Italy; Nor
7. Republic of Korea	Seilseres Co. Ltd. Pusan, Republic of Korea	SS-2000	X	X	X	X	Nor
8. Singapore	Viking Engineering Pte Ltd. 184 Pandan Loop Singapore	MARPOIL	X	X	X	X	Sig; China; UK; RF
9. Sweden	1. JOWA AB Ringogatan 23, S-417 Gothenburg	JOWA CLEANOIL 8788 JOWA CLEANOIL 9000	X	X	X		UK UK

Manufacturing Countries	Manufactured by	Type and Model	Acceptable for				Approving Governments
			Crude oils	"Black" products	"white" products	oil-like noxious liquid substances	
9. Sweden (Cont'd)	2. JOWA AB Tulebo 865 42843 Kallered, Goteborg	JOWA CLEANOIL 9000	X	X	X	X	RF; Nor
	3. Bränströms Elektronik AB, Uddevallagatan 14, 41670 Göteborg	CLEANTRACK 900	X	X	X	X	FRG
10. United Kingdom	1. Bristol-Babcock Ltd.	OTM 18 OTM 17X OTM 18X OTM-17XA-MKII	X	X	X	X	UK; USA; Can UK FRG Can
	2. International Telephone & Telegraph Corporation	ITT OILCON MKII OILCON MK4	X	X	X		UK RF
	3. Rivertrace Engineering Ltd. Unit 5, Astra Business Centre, Bonehurst Road, Salfords, Surrey England RH1 5TL	OCD-2 OCD-10m	X	X	X	X	Can FRG, UK; RF

Manufacturing Countries	Manufactured by	Type and Model	Acceptable for				Approving Governments
			Crude oils	"Black" products	"white" products	oil-like noxious liquid substances	
11. United States	Facet/Quantek Enterprises, Industrial Division (formerly Facet Enterprises) P.O. Box 50096 Tulsa, Oklahoma 74150	MK-IX Ballast Monitor	X	X	X		USA; China

ANNEX 4**OIL/WATER INTERFACE DETECTORS****Approved in accordance with resolution MEPC.5(XIII)**

Manufacturing Countries	Manufactured by	Type and Model	Portable or Permanently installed	Approving Governments
1. Germany	DECKMA GmbH Oevelgönne 69 2000 Hamburg 62	"Aquoil" I	portable	FRG
2. Greece	Environmental Protection Engineering Ltd. 88 Iroon Polytechniou Str. 185-36, Piraeus	PL-1A	portable	Gr
3. Japan	1. Riken Keiki Fine Instrument Co. Ltd. Itabashi-ku Tokyo 174	AOD-102 DC-3A	permanently portable	UK; RF; Nor Sw; RF; Jpn; Nor
	2. Nippon Corrosion Engineering Co. Ltd. Tokyo	Magicon-IIS	portable	UK; Jpn; Nor
	3. Tokyo Keiki Co. Ltd. Tokyo	UID-100-IS	permanently	UK
	4. Nippon Air Brake Co. Ltd. Hyogo, Tokyo	NABCO-MMC B2220-3	portable	China; Jpn
	5. Musasino Engineering Works Co., Tokyo	M-LMZ (LM-VA-S-30)	permanently	Nor
	6. Keihin Sangyo Comportation 13-6 Shinmachi Kanagama Yokohama	LD 3	portable	UK; Nor
	7. MMC (ASIA) Limited Kobe, Japan	D-2401-2 (restricted type) N-2401-2 (closed type)	portable portable	Nor Nor
4. Norway	1. Tanksystem A/S President Harbitz gt. 22 Oslo 2	HERMETIC UTI	portable	FRG; UK; Italy; USA; RF; Nor; Belg; China
	2. Tanksystem A/S N-1324 Lysaker	HERMETIC U/1	portable portable	China
5. Republic of Korea	3. Seil-Seres Co. Ltd. Pusan, Republic of Korea	UDT-G30	Portable	Nor
6. Russian Federation	Sudoimport Moskva, Smolenskaia- Sennaia pl 32/34	DPC	portable	RF

Manufacturing Countries	Manufactured by	Type and Model	Portable or Permanently installed	Approving Governments
7. Switzerland	Enraf Tanksystem S.A. Rue de l'Industrie 2 CH-1630 Bulle Switzerland	HERMETIC U.T.I. HERMETIC UI HERMETIC UI-GT HERMETIC UTI-GT HERMETIC UTI/UI, UTI/UI-GT HERMETIC UTI-GT-OPTO HERMETIC UTI-2000-Touch HERMETIC UTI/UI-Capa and UTI/UI-GT-Capa HERMETIC UTI/UI-Opto and UTI/UI-GT-Opto HERMETIC UTI-2000-Opto HERMETIC UTI/UI (-Visc) and UTI/UI-GT (-Visc), UNI sensing probe HERMETIC UTImeter Rtex and HERMETIC UTImeter Gtex	portable portable portable portable portable portable portable portable portable portable portable portable portable portable portable portable	UK; FRG; Italy; USA; Neth; RF; Nor; Fin; Sw; Yugo; Den; Belg; China; Indo; Can Fin; RF; Nor; China; Belg; USA; Can Can; Nor Can; Nor China; Nor China FRG; Nor FRG FRG FRG; Nor FRG FRG

Manufacturing Countries	Manufactured by	Type and Model	Portable or Permanently installed	Approving Governments
8. United Kingdom	1. A. Searle & Co. 72/82 Rosebery Ave London EC1R 4RR	"AQUOIL"	portable	UK; Nor
	2. Bestobell Mobrey Ltd. Bath Road Slough, England	"SENSALL" B-2220-3 B-2401 D-2401 B-2319 D-2319 ELECTROPULSE	permanently portable portable portable portable portable portable permanently	UK; Nor UK; FRG; Nor USA; UK; RF USA; UK; RF RF RF UK
	3. MMC (Europe) Ltd. Newcastle-upon-Tyne	D-2401/2UI	portable	UK; Nor
9. United States	Marine Moisture Control Co. Inip Drive Inwood, NY 11696-1096	D-2319-1 B-2401 D-2401 B-2220 D-2319	portable portable portable portable portable	UK; FRG; Nor USA; Italy USA; UK USA; UK USA

ANNEX 5**SEWAGE TREATMENT PLANTS****Approved in accordance with resolution MEPC.2(VI)**

Manufacturing Countries	Manufactured by	Type and Model	Designed Hydraulic Loading m ³ /d	Designed Organic Loading kg/d	Approving Governments
1. Brazil	1. Tridente Ind. E. Commercio de Equipamentos Navais Ltda. 20090 Rio de Janeiro	"Super Trident" ST25X ST 2 ST 4 ST 6 ST 8 ST10 ST13 ST15 ST20 ST25 ST30 "Retrofit Trident" RT20 RT40 RT60 RT80	17.5 1.6 3.01 4.55 6.0 7.4 9.6 11.0 14.5 17.5 23.1 1.6 3.01 4.55 6.0	15 1.2 2.4 3.6 4.8 6.0 7.8 9.0 12.0 15.0 18.0 1.2 2.4 3.6 4.8	UK UK UK UK UK UK UK UK UK UK UK UK UK UK
	2. SEMCO SA Sao Paulo	"Super Trident" ST 2 ST 4 ST 6 ST 8 ST10 ST13 ST15 ST20 ST25 ST30 "Retrofit Trident" RT20 RT40 RT60 RT80	1.6 3.01 4.55 6.0 7.4 9.6 11.0 14.5 17.5 23.1 1.6 3.01 4.55 6.0	1.2 2.4 3.6 4.8 6.0 7.8 9.0 12.0 15.0 18.0 1.2 2.4 3.6 4.8	UK UK UK UK UK UK UK UK UK UK UK UK UK UK
2. Bulgaria	MICHAILOV MV CO. Bourgas	TYPE 434	1.5	1.8	BG
3. China	1. Shanghai Marine Instrument and Equipment Works, 200 Minseng Rd, Shanghai	CSWA-3	2.4	0.72	China

Manufacturing Countries	Manufactured by	Type and Model	Designed Hydraulic Loading m ³ /d	Designed Organic Loading kg/d	Approving Governments
3. China (Cont'd)	2. Taixing Ship's Machinery Works Taixing, Jiangsu	WCX-36 WCX-24 WCB-300(s) WCB-250(S) WCB-200(S) WCB-150(S) WCB-100(S) WCB-80 WCB-60 WCB-50 WCB-40 WCB-30 WCB-25 WCB-20 WCB-15 WCB-10 WCB-6	39.6 26.4 22.32 18.24 14.40 10.32 7.44 6.00 4.56 3.60 2.88 2.16 1.75 1.44 1.19 0.72 0.42	1.26 0.84 15.50 13.00 10.50 8.00 5.50 4.30 3.30 2.70 2.20 1.60 1.25 1.10 0.85 0.60 0.21	China China China China China China China China China China China China China China China China China China
	3. Zhangjiang Marine Auxiliary Machinery Factory Zhangjiang, Jiangsu	WCB-40Z	3.08	1.54	China
	4. Luzhou Machinery Works Nanjing, Jiangsu	ST1 ST2 ST3 ST4 ST6 ST8 ST10 ST15 RT-40	0.85 1.6 2.31 3.01 4.55 6.0 7.4 11.0 3.01	0.6 1.2 1.8 2.4 3.6 4.8 6.0 9.0 2.4	China China China China China China China China China
4. Croatia	1. Ekološki sistemi d.o.o., 47000 Karlovac, Mala Švar a, 155	BRODOPUR 45 BRODOPUR BP-25 BRODOPUR BP-45	3.15 1.6 3.15	2.70 1.38 2.70	RF Yugo; Cro; RF Yugo; Cro; RF
	2. tvornica Turbina d.o.o. Kneza Branimira 8 4700 Karlovac	BRODOPUR BP-25	1.6	1.38	Cro
5. Denmark	1. Atlas A/S Baltorpvej 154 DK 2750 Ballerup Copenhagen	AWWU	36.0	-	Den; Gr; Sw

Manufacturing Countries	Manufactured by	Type and Model	Designed Hydraulic Loading m ³ /d	Designed Organic Loading kg/d	Approving Governments
5. Denmark (Cont'd)	2. Gertsen & Olufsen AS Hørsholm Denmark	MBR 6 BG MBR 10 BG MBR 15 BG MBR 20 BG MBR 30 BG MBR 40 BG MBR 50 BG MBR 60 BG MBR 80 BG MBR 100 BG MBR 125 BG MBR 150 BG MBR 200 BG MBR 300 BG MBR 400 BG MBR 600 BG MBR 800 BG MBR 1000 BG	1.11 1.85 2.78 3.7 5.5 7.4 9.25 11.1 14.8 18.5 23.1 27.75 37 55.5 74 111 148 185	0.45 0.75 1.13 1.5 2.25 3.0 3.75 4.5 6.0 7.5 9.37 11.25 15 22.5 30 45 60 75	Nor Nor Nor Nor Nor Nor Nor Nor Nor Nor Nor Nor Nor Nor Nor Nor Nor Nor
6. Finland	1. Aquamaster- Rauma Oy P Box 220 SF-26101 Rauma	UNEX BIO-20 UNEX BIO-40 UNEX BIO-60 UNEX BIO-80 UNEX BIO-100 UNEX BIO-200 UNEX BIO-600 UNEX BIO-800 UNEX BIO SECTIONAL 20 40 60 80 UNEX Cem - 3 - 7.5 - 15 UNEX SIMULTAN - 10 - 15 - 40 - 60 - 80 - 100	1.4 2.8 4.2 5.6 7.0 14.0 42.0 56.0 1.4 2.8 4.2 5.6 72.0 180.0 360.0 3.0 4.0 12.0 18.0 24.0 30.0	0.7 1.4 2.1 2.8 3.5 7.0 21.0 28.0 0.7 1.4 2.1 2.8 28.8 72.0 144.0 1.5 2.0 6.0 9.0 12.0 15.0	Fin; RF Fin; RF Fin; RF Fin; RF Fin Fin Fin Fin Fin; RF Fin; RF Fin; RF Fin; RF Fin RF; Fin Fin Fin Fin Fin Fin Fin

Manufacturing Countries	Manufactured by	Type and Model	Designed Hydraulic Loading m ³ /d	Designed Organic Loading kg/d	Approving Governments
6. Finland (Cont'd)	2. EVAC OY Purotie 1, Fin-00380 Helsinki Finland	Aqua Mar Bio Unit MSP I	2.62	1.125	FRG; Fin; RF
		Aqua Mar Bio Unit MSP II	5.75	2.47	FRG; Fin; RF
		Aqua Mar Bio Unit MSP III	7.875	3.38	FRG; Fin; RF
		Aqua Mar Bio Unit MSP IV	12.25	5.25	FRG; Fin; RF
		Aqua Mar Bio Unit MSP V	26.5	11.25	FRG; Fin; RF
		Aqua Mar Bio Unit MSP VI	44	19.5	FRG
		Aqua Mar Bio Unit MSP VII	70	21	FRG
		Aqua Mar Bio Unit MSP VIII	105	32	FRG
		Aqua Mar Bio Unit MSP IX	142	47.6	FRG
		Aqua Mar Bio Unit MSP X	172	75	FRG
		Aqua Mar Bio Unit MSP XI	158	95	FRG
		Aqua Mar Bio Unit MSP XII	350	105	FRG
		Aqua Mar Bio Unit MSP 25	4.38	1.875	FRG; Fin; RF
		Aqua Mar Bio Unit MSP 60	10.5	4.5	FRG; Fin; RF
		Aqua Mar Bio Unit MSP 80	13.12	5.63	FRG; Fin
		Aqua Mar Bio Unit MSP 150	22.5	95	FRG
		Aqua Mar Bio Unit MSP 300	38	105	FRG
		Aqua Mar Bio Unit MSP 500	90	1.875	FRG
		Aqua Mar Bio Unit MSP 800	120	4.5	FRG
		Aqua Mar Bio Unit MSP 1200	150	5.63	FRG
		EVAC STP 20	2.62	1.125	FRG
		EVAC STP 40	4.4	1.875	FRG
		EVAC STP 55	5.7	2.47	FRG
		EVAC STP 75	7.9	3.38	FRG
		EVAC STP 100	10.5	4.5	FRG
		EVAC STP 125	13.1	5.63	FRG

Manufacturing Countries	Manufactured by	Type and Model	Designed Hydraulic Loading m ³ /d	Designed Organic Loading kg/d	Approving Governments
7. Germany	1. VEB Abwasser-behandlungsan-lagen Merseburg	KA-MR 1,5 S 50C KA-MR 1.5 S 50B	1.75:5.0 1.5:4.25	1.14:3.25 0.98:2.76	FRG; RF FRG; RF
	2. Wasserbehand-lung Merseburg GmbH Amtshäuser 23-29 4200 Merseburg	KA-MR 1.5 S 50-1/E	2.0	1.3	FRG
	3. KG Hamman Wassertechnik GmbH P.O. Box 21 31 2105 Hamburg Seevetal 2	HL-Cont HL-Cont HL-Cont HL-Cont HL-Cont HL-Cont 1m ³ h HL-Cont 7 HL-Compact-Mini HL-Cont C-45	1080.0 720.0 360.0 168.0 96.0 24.0 168.0 24.0 96.0	816.0 540.0 270.0 126.0 72.0 18.0 126.0 18.0 72.0	FRG; RF FRG; RF FRG; RF; Fin FRG; RF FRG; RF FRG; RF; Italy FRG FRG; Fin Fin
	4. Format-Chemie und Apparate GmbH 2086 Ellerau	MSTP 1 MSTP 1 MSTP 1A MSTP 1B MSTP 2 MSTP 3 MSTP 4 MSTP 5 MSTP 6 MSTP 7 MSTP 8 MSTP 9	6.0 6.6 3.3 4.5 12.0 18.0 22.5 33.0 48.0 69.0 150.0 300.0	3.0 3.3 1.65 2.25 6.0 9.0 11.25 16.5 24.0 34.5 75.0 150.0	RF FRG; UK; Fin; Sw; China FRG; RF; China FRG FRG; UK; Fin; Sw; RF; China FRG; UK; Sw; Fin; RF; China FRG; UK; Fin; RF; China FRG; UK; Sw; Fin; RF; China
	5. Format-Chemie GmbH P.O.Box 1263 25476 Ellerau	MSTP 1A MSTP 1B MSTP 1 MSTP 2 MSTP 3 MSTP 4 MSTP 5 MSTP 6 MSTP 7 MSTP 8 MSTP 9	1.26 2.10 2.50 3.85 5.25 6.65 9.80 14.00 21.00 45.50 91.00	0.48 0.81 0.95 1.49 2.03 2.57 3.80 5.40 8.10 17.60 35.10	FRG FRG FRG FRG FRG FRG FRG FRG FRG FRG

Manufacturing Countries	Manufactured by	Type and Model	Designed Hydraulic Loading m ³ /d	Designed Organic Loading kg/d	Approving Governments
7. Germany (Cont'd)	6. APPARATEBAU SALZKOTTEN GMBH Ferdinand-Henze-Strasse 9 33154 Salzkotten	Bio-Compact KSA-S-10 Bio-Compact KSA-S-15 Bio-Compact KSA-S-20 Bio-Compact KSA-S-25 Bio-Compact KSA-S-35 Bio-Compact KSA-S-50 Bio-Compact KSA-S-100 Bio-Compact KSA-S-200 Bio-Compact KSA-S-300 Bio-Compact KSA-S-600 Bio-Compact KSA-S-800	1.75 2.625 3.5 4.375 6.125 8.750 17.5 35.0 52.5 105.0 140.0	0.8 1.2 1.6 2.0 3.060 4.375 8.0 15.0 21.45 36.0 48.0	FRG; RF FRG; RF; China FRG; RF FRG; RF FRG; UK; Fin; RF; Pol FRG; UK; Fin; RF; China FRG; RF; Fin FRG FRG; Fin FRG
	7. Aquachem-industrielle Wasserbehandlung-GmbH, Quellenweg 13 51429 Bergisch Gladbach Germany	BIO AQUA Aerob 12 BIO AQUA Aerob 35 BIO AQUA Aerob 45 BIO AQUA Aerob 55 BIO AQUA Aerob 12/24 BIO AQUA Aerob 18/36 BIO AQUA Aerob 25/50 BIO AQUA Aerob 35/70 BIO AQUA Aerob 45/90 BIO AQUA Aerob 55/110 BIO AQUA Aerob 150/300 Bio AQUA Aerob 75/150 Bio AQUA Aerob 100/200 Bio AQUA Aerob 140/280 Bio AQUA Aerob 240/480	2.1 6.125 9.625 7.875 2.1 3.15 4.375 6.125 7.875 9.625 13.125 13.125 17.5 24.5 45.0	0.89 2.6 6.875 3.4 1.8 9.375 13.125 18.375 23.625 28.875 39.375 39.375 52.5 73.5 135.0	FRG FRG FRG FRG FRG FRG FRG FRG FRG FRG FRG FRG FRG FRG
	8. Paul Pleiger Maschinenfabrik GmbH & Co. KG, D-5810 Witten 3	BIOMAT BS 10 BS 15 BS 20 BS 25	2.2 3.3 4.4 5.5	0.8 1.17 1.5 1.75	FRG; USA FRG FRG FRG

Manufacturing Countries	Manufactured by	Type and Model	Designed Hydraulic Loading m ³ /d	Designed Organic Loading kg/d	Approving Governments
7. Germany (Cont'd)	9. Willi Becker Ingenieurburo GmbH Hamburg	"HELI-FLOW" HF 5M "HELI-FLOW" HF 10M "HELI-FLOW" HF 13M "HELI-FLOW" HF 19M "HELI-FLOW" HF 26M "HELI-FLOW" HF 32M "HELI-FLOW" HF 41M "HELI-FLOW" HF 58M "HELI-FLOW" HF 71M "HELI-FLOW" HF 84M	0.38 0.76 0.98 1.42 1.97 2.42 3.10 4.39 5.38 6.36	0.3 0.6 0.78 1.14 1.56 1.92 2.46 3.48 4.26 5.04	UK UK UK UK UK UK UK UK UK UK
	10. Aqua chem-industrielle Abwasserbehandlung-GmbH Quellenweg 13 5060 Bergisch-Gladbach 1	Bio Aqua Aerob 12 Bio Aqua Aerob 12/24 Bio Aqua Aerob 25/50 Bio Aqua Aerob 35/70 Bio Aqua Aerob 45/90 Bio Aqua Aerob 55/110	2.1 2.1 4.375 6.125 7.875 9.625	0.89 1.80 13.125 18.375 23.625 28.875	FRG FRG FRG FRG FRG FRG
	11. Citex Maschinen-Apparatebau Gastechnik GmbH 2000 Hamburg 71	CEAK 35/50	12.0	600	FRG
	12. Schiffsanlagenbau Barth GmbH, Chausseestr. 5B 0-2380 Barth	MSA 2.5 MSA 5 MSA 10 MSA 15 MSA 2.5 CL MSA 5CL	1.75-3.5 3.5-6.75 6.75-13.5 13.5-20.25 1.75-3.5 3.5-6.75	1.1-2.3 2.3-4.4 4.4-8.8 8.8-13.2 1.1-2.3 2.3-4.4	FRG FRG FRG FRG FRG FRG

Manufacturing Countries	Manufactured by	Type and Model	Designed Hydraulic Loading m ³ /d	Designed Organic Loading kg/d	Approving Governments
7. Germany (Cont'd)	13. VEB Kombinat Schiffbau Rostock	KAREA 25	25.0	12.5	RF
	14. Aquamar GmbH Zum Alten Wasserwerk 6 D-51491 Overath	Bio unit MSP III Bio unit MSP I Bio unit MSP 25 Bio unit MSP II Bio unit MSP 60 Bio unit MSP IV Bio unit MSP 80	7.875 2.62 4.38 5.75 10.5 12.25 13.12	3.38 1.125 1.875 2.47 4.5 5.15 5.63	China China China China China China China
	15. Hamann Wassertechnik GmbH P.O.B.2201 D-21202 Seevetal	Basis-Frame Norway-Frame L-Frame Norway-Frame Double-Frame L-Frame Norway-Frame Double-Frame L-Frame Norway-Frame Double-Frame Compact-Mini -Big-Tank Mini-Frame-Big Norway-Frame-Big HL-Cont Super Mini HL-Cont (1 m ³ /h) Compact – Mini HL-Cont. (96 m ³ /d)	24.0 24.0 96.0 96.0 96.0 168.0 168.0 168.0 360.0 360.0 360.0 36.0 36.0 36.0 2.52 24.0 96.0	18.0 18.0 72.0 72.0 72.0 126.0 126.0 126.0 270.0 270.0 270.0 27.0 27.0 27.0 1.89 18.0 72.0	RF RF RF RF RF RF RF RF RF RF RF RF RF RF FRG FRG FRG
		HL-Cont. (168 m ³ /d) HL-Cont. (360 m ³ /d) HL-Cont. (720 m ³ /d) HL-Cont. (1080 m ³ /d)	168.0 360.0 720.0 1080.0	126.0 270.0 540.0 810.0	FRG FRG FRG FRG

Manufacturing Countries	Manufactured by	Type and Model	Designed Hydraulic Loading m ³ /d	Designed Organic Loading kg/d	Approving Governments
7. Germany (Cont'd)	16. Triton-Format GmbH Werner-von-Siemen-Str.2 25476 Ellerau	MSTP 1A MSTP 1B MSTP 1 MSTP 2 MSTP 3 MSTP 4 MSTP 5 MSTP 6 MSTP 7 MSTP 8-600V MSTP 8 MSTP 9 MSTP 10-1500V MSTP 11-1800V	1.26 2.1 2.5 3.85 5.25 6.65 9.8 14.0 21.0 25.0 45.5 91.0 37.5 45.0	0.48 0.81 0.95 1.49 2.03 2.57 3.8 5.4 8.1 27.0 17.6 35.1 40.5 48.6	RF; FRG RF; FRG RF; FRG RF; FRG RF; FRG RF; FRG RF; FRG RF; FRG RF; FRG FRG RF; FRG RF; FRG FRG FRG
	17. MARTIN SYSTEMS AG Bettelhecker Str.25 96515 Sonneberg	STKS 65 STKS 25 STKS 110 STKS 250 STKS 300 BMA 15	16.25 5.50 16.80 35.00 42.50 2.40	5.85 2.30 9.92 22.50 25.50 1.35	FRG FRG FRG FRG FRG FRG
	18. UTS Maschinen- und Ausrüstungsbau GmbH Friedrich-Engels-Str. 23-25 96515 Sonneberg	STKS 25 STKS 65	5.50 16.25	2.30 5.85	FRG FRG

Manufacturing Countries	Manufactured by	Type and Model	Designed Hydraulic Loading m ³ /d	Designed Organic Loading kg/d	Approving Governments
7. Germany (Cont'd)	19. DVZ-SERVICES GmbH Waldstrasse 23 D-28844 Weyhe	DVZ-MSD II/10 DVZ-MSD II/20 DVZ-MSD II/30 DVZ-MSD II/40 DVZ-MSD II/50 DVZ-MSD II/60 DVZ-MSD II/70 DVZ-MSD II/80 DVZ-MSD II/100 DVZ-MSD II/120 DVZ-MSD II/140 DVZ-MSD II/160 DVZ-MSD II/180 DVZ-MSD II/200 DVZ-MSD II/240 DVZ-MSD II/300 DVZ-SKA 10 “Biomaster” DVZ-SKA 20 “Biomaster” DVZ-SKA 30 “Biomaster” DVZ-SKA 35 “Biomaster” DVZ-SKA 40 “Biomaster” DVZ-SKA 50 “Biomaster” DVZ-SKA 70 “Biomaster” DVZ-SKA 150 “Biomaster” DVZ-SKA 100 “Biomaster” DVZ-SKA 200 “Biomaster” DVZ-SKA 300 “Biomaster”	0.85 1.73 2.59 3.46 4.32 5.18 6.04 6.91 8.64 10.36 12.08 13.82 15.54 17.28 20.72 22.464 1.85 3.70 5.50 6.475 7.40 9.20 12.95 27.75 18.50 37.00 55.50	0.95 1.90 2.85 3.80 4.75 5.70 6.65 7.60 9.50 11.40 13.30 15.20 17.10 19.00 22.80 24.71 1.29 2.58 3.86 4.52 5.15 6.40 9.03 19.35 9.25 25.8 38.7	FRG FRG

Manufacturing Countries	Manufactured by	Type and Model	Designed Hydraulic Loading m3/d	Designed Organic Loading kg/d	Approving Governments
7. Germany (Cont'd)	20. VA TECH WABAG Deutschland GmbH & Co. KG, Lise-Meitner-Str.4a 40878 Ratingen, Germany	MEMROD LT 10 MEMROD LT 25 MEMROD LT 50 MEMROD LT 70 MEMROD LT 230 MEMROD LT 250 MEMROD LT 270 MEMROD LT 300 MEMROD LT 520	1.8 3.75 7.5 10.5 34.5 37.5 40.5 45 78	0.9 2.25 4.5 6.3 20.7 22.5 28.35 31.5 54.6	FRG FRG FRG FRG FRG FRG FRG FRG FRG
	21. Rochem UF-Systeme GmbH Seegelkenkehre 4 21107 Hamburg Germany	Bio-Filt® 16/18 Bio-Filt® 03/09 Bio-Filt® 03/06 Bio-Filt® 12/27 Bio-Filt® 18/27 Bio-Filt® S 03/09.5	80 13.2 24 154 154 18	115 8 10 118 118 12	FRG FRG FRG FRG FRG FRG
	22. MARTIN SYSTEMS AG Bettelhecker Str.25 96515 Sonneberg	BMA 6 BMA 12 BMA 15 BMA 20 BMA 25 BMA 35 BMA 50 BMA 75 BMA 100 BMA 150 BMA 200 BMA 300 BMA 450 BMA 680 BMA 1130	1.11 2.22 2.4 4.44 5.0 7.03 9.4 13.9 18.7 27.8 37 56 84 126 210	0.54 1.08 1.35 2.16 2.25 3.42 4.6 6.8 9.1 13.5 18 27 41 61 102	FRG FRG FRG FRG FRG FRG FRG FRG FRG FRG FRG FRG FRG FRG FRG FRG
	23. RWO GmbH Leerkämpe 3 D-28259 Bremen	WWT1BIOPUR WWT2 BIOPUR WWT3 BIOPUR WWT4 BIOPUR WWT5 BIOPUR WWT6 BIOPUR WWT7 BIOPUR WWT8 BIOPUR WWT9 BIOPUR WWT10 BIOPUR WWT11 BIOPUR WWT12 BIOPUR WWT13 BIOPUR	1.76 2.59 4.63 6.48 9.81 12.58 16.65 20.35 29.60 44.40 90.65 136.90 185.00	0.83 1.22 2.174 3.04 4.61 5.03 6.16 7.53 11.84 17.76 31.73 47.92 64.75	FRG FRG FRG FRG FRG FRG FRG FRG FRG FRG FRG FRG FRG FRG

Manufacturing Countries	Manufactured by	Type and Model	Designed Hydraulic Loading m ³ /d	Designed Organic Loading kg/d	Approving Governments
7. Germany (Cont'd)	24. Ocean Clean GmbH Wehrmannsdamm 11 27245 Kirchdorf Germany	KD-Ocean clean-15 KD-Ocean clean-20 KD-Ocean clean-25 KD-Ocean clean-30 KD-Ocean clean-40 KD-Ocean clean-50 KD-Ocean clean-70 KD-Ocean clean-100 KD-Ocean clean-120 KD-Ocean clean-150 KD-Ocean clean-330	2.77 3.7 4.5 5.55 7.4 9.25 12.95 18.5 22.2 27.75 61.05	2,267 3.02 3.91 4.53 6.05 7.55 10.58 15.11 18.13 22.67 49.88	FRG FRG FRG FRG FRG FRG FRG FRG FRG FRG FRG
	25. Hamann AG Division Hamann Wassertechnik Bei der Lehmkuhle 4 D-21279 Hollenstedt	HL-Cont Super Mini HL-Cont (1m ³ /h) Compact Mini HL-Cont (96 m ³ /d) HL-Cont (168 m ³ /d) HL-Cont (360 m ³ /d) HL-Cont (720 m ³ /d) HL-Cont (1080 m ³ /d)	2.52 24 96 168 360 720 1080	1.89 18 72 126 270 540 810	FRG FRG FRG FRG FRG FRG FRG
8. Greece	1. Environmental Protection Engineering Ltd. 88 Iroon Polytechniou Str. 18536 Piraeus	TRITON 196 TRITON 1900 TRITON 408 TRITON 1000 TRITON 4000	1.96 19.00 4.08 10 40	0.85 8.34 1.77 4.34 17.35	Gr; Nor Gr; Nor Nor Nor Nor
	2. Techni SA Piraeus Greece	BIOCON I BIOCON II BIOCON III	2.62 8.07 14.6	1.35 4.15 7.52	Nor Nor Nor
9. Italy	1. Pollution Control Engineering Sr.1, Trattamento Acque Via Dei Mille 99, La Spezia	BIODISK FVN 25 BIODISK FVN 30 BIODISK FVN 50 BIODISK FVN 60 BIODISK FVN 100 BIODISK FVN 200 BIODISK FVN 300	2.5 (less than 4.0 the 6.0 standards) 8.0 " 15.0 " 30.0 " 45.0 "		Italy USA Italy USA; Italy USA; Italy USA; Italy USA; Italy
	2. I.S.I.R. Sas di Antonelli & C 16165 Genova Struppa	BIOEPURO-B/50 75 25 20 75-2 100 125 150 200	5.0 15.0 2.5 2.0 7.5 10.0 12.5 15.0 20.0		Italy; RF; Gr Italy; RF Italy; RF; Gr Italy; RF; Gr Italy; Gr Gr; Italy; RF Italy; RF; Gr Gr; RF Gr; Italy; RF

Manufacturing Countries	Manufactured by	Type and Model	Designed Hydraulic Loading m ³ /d	Designed Organic Loading kg/d	Approving Governments
10. Japan	1. Sasakura Engineering Co. Ltd. Osaka 500	Super Trident ST2 Super Trident ST4 Super Trident ST6 Super Trident ST8 Super Trident ST10 Super Trident ST15 Super Trident ST20 Super Trident ST25 Super Trident ST30 Super Trident ST2A Super Trident ST3A Super Trident ST4A Super Trident ST6A Super Trident ST2N Super Trident ST4N Super Trident ST6N Super Trident ST8N Super Trident ST10N Super Trident ST15N Super Trident ST20N Super Trident ST25N Super Trident ST30N Retro-fit Trident RT 20 Retro-fit Trident RT 40 Retro-fit Trident RT 60 Retro-fit Trident RT 80	1.6 3.01 4.55 6.0 7.4 11.0 14.5 17.5 23.1 1.6 2.31 3.01 4.55 1.6 3.01 4.55 6.0 7.4 11.0 14.5 17.5 23.1 1.6 3.01 4.55 6.0	1.2 2.4 3.66 4.8 6.0 9.0 12.0 15.0 18.0 1.2 1.8 2.4 3.6 1.2 2.4 3.6 4.8 6.0 9.0 12.0 15.0 18.0 1.2 2.4 3.6 4.8	UK; China; Fin UK; China; Fin UK; China; Fin UK; China UK; China; Fin UK; China UK; China; Fin UK; China; Fin UK; China; Fin UK UK UK UK UK UK UK UK UK UK UK UK UK UK UK UK UK; Fin UK; Fin UK; Fin UK; Fin
	2. Nissin Refrigeration and Engineering Ltd. Osaka	Marine Defecamat NST-20 Marine Defecamat NST-30 Marine Defecamat NST-40 NST-50 NST-60 NST-70 NST-80 NST-90 NST-100 NST-125 NST-150 NST-300 NST-400 NST-500 NST-650 NST-750	1.2 1.8 2.4 3.0 3.6 4.2 4.8 5.4 6.0 7.5 9.0 18.0 24.0 30.0 39.0 45.0	0.27 0.405 0.54 0.67 0.81 0.94 1.08 1.21 1.35 1.68 2.02 4.05 5.40 6.75 8.77 10.12	UK; China UK; China UK; China China China China China China China China China China China China China China

Manufacturing Countries	Manufactured by	Type and Model	Designed Hydraulic Loading m ³ /d	Designed Organic Loading kg/d	Approving Governments
10. Japan (Con'd)		Marine Defecamat NST-20H Marine Defecamat NST-25H Marine Defecamat NST-30H Marine Defecamat NST-40H	1.2 1.5 1.8 2.4	0.27 0.338 0.405 0.54	UK; China UK; China UK; China UK; China
	3. Taiko Kikai Industries Co. Ltd. 209 Shimotabuse Tabuse-cho Kamage-Gun Yamaguchi-Pref Japan 742-15	TAIKO SHIPCLEAN BFT 40 AP-2 SHIPCLEAN AP-3 SHIPCLEAN AP-4 SHIPCLEAN AP-5 SHIPCLEAN AP-6 SHIPCLEAN AP-7 SHIPCLEAN SBT-15 SBT-25 SBT-40 SBT-65	2.4 1.2 1.8 2.4 3.0 4.5 6.0 0.9 1.5 2.4 3.9	0.54 0.27 0.405 0.54 0.675 1.0125 1.35 0.2025 0.3375 0.54 0.8775	UK; China UK; China UK; RF; China UK; China UK; China UK; China UK; China UK; China UK; China UK; China UK; China
	4. Goko Seisakusho Co. Ltd. 27-3, 5-chome Shimbashi Minato-ku Tokyo	"AEROBICT C" TF 20 "AEROBICT" TF 25 1.0 "AEROBICT C" TF 40 "AEROBICT" TF 50 2.0 "AEROBICT C" TF 60 "AEROBICT" TF 40 1.6 "AEROBICT" TF 80 3.2 "AEROBICT" TF 120 4.8	0.7 0.337 1.6 0.6752.1 0.540 1.08 1.62	0.27 0.540 0.81 0.54	UK UK; USA UK; USA UK; USA UK UK UK; USA UK; USA; Nor
	5. Nippon Kokan, Yokohama	NKK-25 D II	1.5	0.337	Fin
	6. Japan Development Consultants Inc. 1 Tatagami-cho Sasebo-City Nagasaki	CLEAN FRIEND BFM-35	2.13		USA

Manufacturing Countries	Manufactured by	Type and Model	Designed Hydraulic Loading m ³ /d	Designed Organic Loading kg/d	Approving Governments
11. Netherlands	1. Holland Marine Services Amsterdam b.v Vlothavenweg 16, 1013 BJ Amsterdam, The Netherlands	MSD-II Series	4	1.1	Neth.
	2. BioCompact Environmental Technology B.V., Brugwachter 13, 3034 KD Rotterdam	Bio-Compact KSA-S 10 Bio-Compact KSA-S 15 Bio-Compact KSA-S 20 Bio-Compact KSA-S 25 Bio-Compact KSA-S 35 Bio-Compact KSA-S 50 Bio-Compact KSA-S 100 Bio-Compact KSA-S 200 Bio-Compact KSA-S 300 Bio-Compact KSA-S 600 Bio-Compact KSA-S 800	1.75 2.625 3.5 4.375 6.125 8.75 17.5 35 52.5 105 140	0.8 1.2 1.6 2 3.06 4.375 8 15 21.45 36 48	FRG FRG FRG FRG FRG FRG FRG FRG FRG FRG
12. Norway	Scanship Engineering AS Tønsberg Norway	'The MUSSEL FA25'	360		Nor
13. Poland	1. Pomorskie Zaklady Urzadzen Okretowych "WARMA" 86-300 Grudziadz Ul. Lotnicza 21	LK-30A LK-100 LK-200 LK-320 LK-30 LK-50 LK-100 LK-200 LK-320 MOS40 MOS-2.5	1.95 6.5 13.0 20.8 1.95 3.25 6.5 13.0 20.8 40 2.5	1.36 4.55 9.1 14.56 1.8 3.0 6.0 12.0 19.2 27.99 1.75	Pol Pol; RF Pol; RF Pol; RF UK; Pol; RF UK; Fin; Pol; RF; Sw UK UK UK Pol RF

Manufacturing Countries	Manufactured by	Type and Model	Designed Hydraulic Loading m ³ /d	Designed Organic Loading kg/d	Approving Governments
13. Poland (Cont'd)	2. Centrum Techniki Morskie; OBR Gdansk, U1 J.Matejki 6	TELKA 03	6	4.5	Pol
	3. Stocznia Szczecinska im. Adolfa Warskiego Szczecin	B 430-7	1.3	0.9	FRG
	4. Zaklady Doswiadczenno-Produkcyjnych "TECHMOR" ul. Marynarki Polskiej 59, Gdansk	TELKA 06	12.0	9.0	Pol
14. Republic of Korea	1. Consolidated Machinery Inc. Yang San	BIO AQUA 35 BIO AQUA 25 BIO AQUA 18 BIO AQUA 55 BIO AQUA 45 AEROB - 12 AEROB - 12C AEROB - 18 AEROB - 18C AEROB - 25 AEROB - 35 AEROB - 45 AEROB - 55	6.125 4.375 3.15 9.625 7.875 2.1 2.1 3.15 3.15 4.375 6.125 7.875 9.625	2.6 1.86 1.34 4.125 3.4 .89 .89 1.34 1.34 1.86 2.6 3.4 4.125	FRG FRG FRG FRG FRG ROK ROK ROK ROK ROK ROK ROK ROK
	2. HanDok Precision Ind; Kangseo-Gu Seoul	HDST - 150 HDST - 250 HDST - 400 HDST - 650	0.9 1.5 2.4 3.9		ROK ROK ROK ROK
	3. Chang Won Environment Ind. Co., Ltd Kim hai Kyung Nam-Do	SEACLEAN II-10CE SEACLEAN II-20CE SEACLEAN II-30CE SEACLEAN II-50CE SEACLEAN II-150CE SEACLEAN II-30CE-S SEACLEAN II-50CE-S SEACLEAN II-50CE(B) SEACLEAN II-50CE(B)-S SEACLEAN II-100CE SEACLEAN II-100CE-S SEACLEAN II-150CE-S SEACLEAN II-300CE	0.3 0.6 0.9 1.5 4.5 0.9 1.5 2.4 2.4 3.0 3.0 4.5 9.0		ROK ROK; Nor ROK ROK ROK ROK ROK ROK ROK ROK ROK ROK ROK

Manufacturing Countries	Manufactured by	Type and Model	Designed Hydraulic Loading m ³ /d	Designed Organic Loading kg/d	Approving Governments
14. Republic of Korea (Con'td)	4. Changkwang Engineering Co.,Ltd. Youngdeungpo-Ga, Seoul	HDST-150 HDST-250 HDST-400 HDST-650	0.9 1.5 2.4 3.9		ROK ROK ROK ROK
	5. Il Seung Co., Ltd. Kyeongnam Republic of Korea	ISS-25 ISS-43	1.5 2.58	0.34 0.58	Nor Nor
15. Russian Federation	1. Sudoimport Moskva Smolenskaia - Sennaia pl 32/34	EOS-15 EOS-5	15.0 5.0	6.0 2.5	RF RF
	2. "EKOS Ltd." Barrikadnaja st.36, fl. 8 St. Petersburg	STOK-10M1 STOK-50M	10.0 50.0	5.0 25.0	RF RF
	3. Krasnoputilovskai St. 55-6 198152 St. Petersburg	STOK-30M STOK-70M	30.0 70.0	15.0 35.0	RF RF
16. Spain	DETEGASA Ctra. Castro-Meiras 15550 Valdoviño La Coruña	<u>PHYSICAL-CHEMICAL</u> DELTA FQ-6 DELTA FQ-10 DELTA FQ-15 DELTA FQ-22 DELTA FQ-24 DELTA FQ-28 DELTA FQ-30 DELTA FQ-36 DELTA FQ-40 DELTA FQ-50 DELTA FQ-88 DELTA FQ-105 DELTA FQ-125	6 10 15.24 22 24 28 30.3 36 40 50 88.5 105 125	3.3 5.5 8.3 12.1 13.2 15.4 16.6 19.8 22 27.5 48.6 57.5 68.75	Spain Spain Spain Spain Spain Spain Spain Spain Spain Spain Spain Spain Spain Spain
		<u>BIOLOGICAL</u> DELTA PR-036 DELTA PR-069 DELTA PR-138 DELTA PR-200 DELTA PR-260 DELTA PR-400 DELTA PR-540 DELTA PR-670 DELTA PR-870 DELTA PR-1000 DELTA PR-1310 DELTA PR-1590 DELTA PR-2110 DELTA PR-2600 DELTA PR-3480 DELTA PR-4392	0.36 0.69 1.38 2 2.6 4 5.40 6.70 8.70 10 13.10 15.90 21.10 26 34.80 43.92	0.19 0.38 0.75 1.10 1.43 2.2 2.97 3.68 4.78 5.50 7.20 8.74 11.60 14.30 19.14 24.15	Spain Spain Spain Spain Spain Spain Spain Spain Spain Spain Spain Spain Spain Spain Spain Spain

Manufacturing Countries	Manufactured by	Type and Model	Designed Hydraulic Loading m ³ /d	Designed Organic Loading kg/d	Approving Governments
17. Sweden	1. Consilium Marine, Stockholm Sweden S-1 7122, Solna	NEPTUMATIC MOC-12 NEPTUMATIC MOC-20 NEPTUMATIC MOC-28 NEPTUMATIC MOC-28R NEPTUMATIC MOC-75 NEPTUMATIC MOC-75 Compart NEPTUMATIC MOC-100 NEPTUMATIC MOC-125 NEPTUMATIC MOC-130 NEPTUMATIC RETRO-30 NEPTUMATIC RETRO-45 NEPTUMATIC MOD 130	12.0 20.0 28.0 21.0 75.0 75.0 100.0 125.0 130.0 30.0 45.0 130.0	6.2 10.3 14.4 10.6 30.0 30.0 40.0 50.0 52.0 15.4 23.2 52.0	Sw; UK; RF; Pol; Fin RF RF RF Sw Fin; Pol Fin Sw Sw; RF; Fin Sw; RF; Fin UK
	2. Jowa AB Tulebo 865 S-42834 Kallered, Gothenburg Sweden	JOWA BIO-STP 1 JOWA BIO-STP 2 JOWA BIO-STP 3 JOWA BIO-STP 4 JOWA BIO-STP 5 JOWA BIO-STP 6	0.7 1.75 2.45 3.5 5.25 14	0.51 1.29 1.8 2.57 3.86 10.29	FRG FRG FRG FRG FRG FRG

Manufacturing Countries	Manufactured by	Type and Model	Designed Hydraulic Loading m ³ /d	Designed Organic Loading kg/d	Approving Governments
18. United Kingdom	1. Hamworthy Engineering Ltd., Pump and Compressor Division Fleets Corner Poole, Dorset BH17 7LA	Retro-fit Trident RT 80 Retro-fit Trident RT 60 Retro-fit Trident RT 40 Retro-fit Trident RT 20 Super Trident ST 60 Super Trident ST 50 Super Trident ST 40 Super Trident ST 40X Super Trident ST 30 Super Trident ST 25X Super Trident ST 25 Super Trident ST 20 Super Trident ST 15 Super Trident ST 13 Super Trident ST 10 Super Trident ST 8 Super Trident ST 6 Super Trident ST 4 Super Trident ST 3 Super Trident ST 2 Super Trident ST 1 Super Trident ST 0 Super Trident ST 60S	6.0 4.55 3.01 1.6 46.2 30.0 24.0 28.0 23.1 17.5 17.5 14.5 11.0 9.6 7.4 6.0 4.55 3.01 2.1 1.6 0.8 0.45 46.2	4.8 3.6 2.4 1.2 36.0 36.75 28.0 24.0 18.0 15.0 15.0 12.0 9.0 7.8 6.0 4.8 3.6 2.4 1.8 1.2 0.6 0.32 36.0	UK; Fin; RF; China; Pol UK; Fin; RF; China; Pol UK; Fin; RF; China; Pol; Fin UK; Fin; RF; China; Pol; Fin UK; RF; Pol Pol Pol UK UK; Sw; RF; Pol; Fin Fin; Pol UK UK; Fin; RF; Pol UK; Fin; RF; Pol UK; RF; Pol; Fin UK; Pol; FRG UK; Fin; RF; China; FRG; Pol; Fin UK; RF; China; FRG; Pol; Fin UK; Fin; Italy; Pol; RF; China; FRG UK; Sw; RF; Fin; Pol; China; Italy; FRG UK; Italy UK; FRG; RF; Italy; Pol; Fin; China UK; FRG; RF; China; Pol RF; UK; Pol UK

Manufacturing Countries	Manufactured by	Type and Model	Designed Hydraulic Loading m ³ /d	Designed Organic Loading kg/d	Approving Governments
18. United Kingdom (Cont'd)		Trident T 10 Trident T 20 Trident T 30 Trident T 40 Trident T 50 Trident T0 Trident T 75 Trident T 100 Super Trident ST-0A ST-1A ST-2A ST-3A ST-4A ST-6A -8A	0.68 1.36 2.04 2.73 3.41 4.09 5.11 6.81 0.42 0.8 1.6 2.31 3.0 4.55 6.0	0.6 1.2 1.8 2.4 3.0 3.6 4.5 6.0 0.35 0.6 1.2 1.8 2.4 3.6 4.8	UK UK UK UK UK UK UK UK RF; UK RF; UK; Pol RF; UK; Pol; Fin RF; UK; Pol RF; UK; Pol; Fin RF; UK; Pol; Fin RF
	2. Marine Ventures Ltd. Marven House, 1 Field Road, Reading RG1 6AP England	SEACARE 10 SEACARE 40 SEACARE 200	1.0 4.0 20.0	0.6 2.4 12.0	UK UK UK
	3. Elsan Marine International Ltd. Sandwich Kent	STOUR LC 5 STOUR LC 10 STOUR LC 20 STOUR LC 35 STOUR LC 60 STOUR LC 100	0.18 0.36 0.72 1.26 2.16 36.0	0.3 0.6 1.2 2.1 3.6 60.0	UK UK UK UK UK UK
19. United States	1. Exstar International Corp., 6502 Windmill Way, Wilmington, North Carolina 28405	MARLAND SANI-SYSTEM: SS-645 Type II SS-630 Type II SS-615 Type II SS-600 Type II SS 40 SS 60	17.4 11.36 5.11 2.84	13.5 9.0 4.05 2.25	UK; Gr UK; Gr UK; Gr; Sw; Fin UK; Gr; Sw; Fin Gr Gr

Manufacturing Countries	Manufactured by	Type and Model	Designed Hydraulic Loading m ³ /d	Designed Organic Loading kg/d	Approving Governments	
19. United States (Cont'd)	2. Microphor Inc. Willits, California	M 8 M 10 M 12 M 14 M 30 M 40 M 50 M 100 M 150 M 200 M 300 M 500 M 600 M 800 M 1000 MC 50 MC 100 MC 150 MC 200 MC 300 MC 500 MC 600 MC 800 MC 1000		0.057 0.076 0.095 0.189 0.284 0.379 0.568 0.946 1.136 1.514 1.893 0.473 0.946 1.419 1.893 2.839 4.731 5.678 7.57 9.463	0.18 0.24 0.3 0.6 0.9 1.2 1.8 3.0 3.6 4.8 6.0 0.3 0.6 0.9 1.2 1.8 3.0 3.6 4.8 6.0	Gr Gr Gr Gr UK UK Gr; UK Gr; UK
	3. St. Louis Ship. 611 East Marceau Street St. Louis Missouri 63111	"FAST" LS-1 "FAST" LS-2 "FAST" 6m "FAST" LS-3 "FAST" 9M "FAST" 13M "FAST" 12D "FAST" 18M "FAST" 18D "FAST" 26M "FAST" 25D "FAST" 40D "FAST" 50D		0.57 0.91 1.02 1.36 1.59 2.39 2.61 3.18 3.86 4.77 5.68 8.41 10.70	0.17 0.27 0.31 0.41 0.48 0.71 0.78 0.95 1.15 1.43 1.70 2.51 3.19	UK UK UK; USA UK UK; USA UK; USA UK; USA UK; USA UK; USA UK; USA UK; USA UK; USA UK; USA

Manufacturing Countries	Manufactured by	Type and Model	Designed Hydraulic Loading m ³ /d	Designed Organic Loading kg/d	Approving Governments
19. United States (Cont'd)	4. FAST Systems, Inc. 8229 Brentwood Industrial Drive Brentwood, MO 63144	"FAST" D1, D1M, D-1S D2, D2M, D-2S D3, D3M, D-3S D4, D4M, D-4S D5, D5M, D-5S D6, D6M, D-6S D7, D7M, D-7S D8, D8M, D-8S D9, D9M, D-9S "FAST" M-1, MX-1 "FAST" M-2, MX-2 "FAST" M-3, MX-3 "FAST" M-4, MX-4 "FAST" M-5, MX-5 L-1, Type II L-1X, Type II L-2X, Type II L-3X, Type II L-4X, Type II	3.52 5.22 7.72 11.35 14.42 19.98 29.97 46.89 67.67 1.13 1.70 2.49 3.29 4.88 0.6 0.495 0.645 0.985 1.385	1.1 1.6 1.6 1.6 4.4 1.6 1.6 14.3 20.6 0.4 0.5 0.8 1.0 1.5 0.2 USA	USA USA USA USA USA USA USA USA USA USA USA USA USA USA USA USA USA USA USA USA
	5. Sigma Treatment Systems Inc., 2 Davis Ave Frazer Pennsylvania 19355 USA (Marlor Welding and Fabrication Co. Ltd., 4-5 Wainman Rd., Woodston Peterborough PE2 OBU England)	BIO-STS 500 BIO-STS 1500 BIO-STS 1000	1.89 5.68 3.79	1.67 5.0 3.33	UK UK UK
	6. Red Fox Industries New Iberia LA	RF-100-M RF-200-M RF-350-M RF-500-M RF-750-M RF-1000-M RF-1500-M RF-2000-M RF-2500-M RF-3000-M RF-3500-M RF-4000-M RF-4500-M RF-5000-M RF-5500-M RF-6000-M RF-7500-M RF-9000-M RF-0.5-MP	0.38 0.76 1.33 1.9 2.9 3.79 5.7 7.6 9.5 11.4 13.3 15.2 17.1 19.0 20.9 22.8 28.5 34.2 0.61	0.3 0.6 1.05 2.00 3.00 4.00 6.00 8.00 10.00 12.00 14.00 16.00 18.00 20.00 22.00 24.00 30.00 36.00 0.48	UK; Gr UK; Gr Gr; UK (Little Fox)

Manufacturing Countries	Manufactured by	Type and Model	Designed Hydraulic Loading m ³ /d	Designed Organic Loading kg/d	Approving Governments
19. United States (Cont'd)		PAC FP 50 PAC FP 200 PAC FP 500 PAC FP 750 PAC FP 1000 PAC FP 1500 PAC FP 2000 PAC FP 2500	0.19 0.76 1.89 2.84 3.79 5.68 7.57 9.40	0.3 0.6 1.5 2.25 3.0 4.5 6.0 7.5	Gr; UK Gr; UK Gr; UK UK Gr; UK Gr; UK UK Gr; UK
	7. EffluentTechnology Corporation 402 Tacoma Ave.S P.O. Box 2094 Tacoma WA 98401	"ORCA" MK 2/12 "ORCA" MK 2/24 "ORCA" MK 2/36	1.36 2.73 4.09	1.44 2.88 4.32	UK; Gr; USA; China UK; Gr; USA; China UK; Gr; USA; China
	8. KIMCO Inc. P.O. Box 1551 Houston, TX 77251	"HELI-FLOW" HF 2M HF 5M HF 10M HF 13M	- 0.38 0.76 0.98	- 0.3 0.6 0.78	USA UK; USA UK; USA UK; USA
	9. Houston Systems Manufacturing Cc. New Iberia, LA	HF 19M HF 26M HF 32M HF 41M HF 58M HF 71M HF 84M HF 104M HF 130M HF 156M HF 175M HF 188M HF 208M HF 234M HF 292M HF 325M HF 357M HF 390M HF 455M	1.42 1.97 2.42 3.10 4.39 5.38 6.36 7.87 9.84 11.81 13.24 14.23 15.75 17.72 22.11 24.61 27.03 29.53 34.45	1.14 1.56 1.92 2.46 3.48 4.26 5.04 6.24 7.8 9.36 10.5 11.28 12.48 14.04 17.52 19.5 21.42 23.4 27.3	UK; USA UK; USA
	10. OMNIPURE WASTEWATER TREATMENT 8623 Windswept Houston, Texas	"OMNIPURE" 4M 6M 8M 12M 12MX	1.48 2.96 6.815 13.63 28.39	0.78 1.62 3.6 7.2 15.0	UK UK; Fin UK; Fin UK UK
	11. ESS Corporation 12850 Bournewood Drive, Sugarland, Texas 77478	"OMNIPURE" 15MX	56.00	30.0	USA

Manufacturing Countries	Manufactured by	Type and Model	Designed Hydraulic Loading m ³ /d	Designed Organic Loading kg/d	Approving Governments
19. United States) (Cont'd)	12. Exceltec International Corp. 1110 Industrial Blvd Sugarland TX 77478	"OMNIPURE" 4MS 6MC 6MS 7MC 7MS 8MC 8MS 12M 12MC 12MX 15MX	1.48 2.96 2.96 4.54 4.54 6.815 6.815 13.63 13.63 28.39 56.00	0.78 1.62 1.62 2.4 2.4 3.6 3.6 7.2 7.2 15.0 30.0	USA RF; USA USA USA RF RF; USA USA USA RF; USA RF; USA RF; USA
	13. Envirovac Inc. 1260 Turret Drive Rockford IL 61111	ORCA IIA-12 ORCA IIA-24 ORCA IIA-36 ORCA II-160 ORCA II-165 ORCA II-330 ORCA II-360 ORCA II-500	1.36 2.72 4.09 18.17 18.93 37.47 37.47 56.81	1.44 2.88 4.32 19.2 19.8 39.6 39.6 60.0	USA;Fin;UK;Pol;China RF USA;Fin;UK;Pol;China RF USA;Fin;UK;Pol;China RF Fin; UK USA; Pol; China USA; Pol; UK; China; Fin Fin
	14. Environmental Marine Inc. P.O. Box 440 Bronston, KY 42518	Model 400 Model 800 Model 1200 Model 1600			USA USA USA USA
	15. Raritan Engineering Co Inc. 530 Orange Street P.O. Box 1157 Millville NJ 08332	Raritan Managerm: Model 6400081 Model 6400121 Model 6400161	0.17 0.23 0.34	1.56 2.35 3.13	USA USA USA
	16. Owens MFG & Specialty Co 922-A Young Street Youngsville LA 70508	OW-A-HB OW-B-HB OW-C-HB OW-D-HB OW-E-HB OW-F-HB OW-G-HB	0.16 0.33 0.49 0.80 1.05 1.59 1.99		USA USA USA USA USA USA USA

Manufacturing Countries	Manufactured by	Type and Model	Designed Hydraulic Loading m ³ /d	Designed Organic Loading kg/d	Approving Governments
19. United States (Cont'd)	17. Seahorse Manufacturing 5810 Paradise Lane Lydia, LA 70569	SMSD-100 SMSD-200 SMSD-300 SMSD-400 SMSD-500 SMSD-750 SMSD-1000 SMSD-1500 SMSD-2000 SMSD-2500 SMSD-3000 SMSD-3500 SMSD-4000 SMSD-4500 SMSD-5000 SMSD-5500 SMSD-6000 SMSD-7000 SMSD-8000 SMSD-8500	0.61 0.76 1.14 1.51 1.89 1.89 3.79 5.68 7.57 9.46 11.36 13.25 15.14 17.03 18.93 20.82 22.71 26.5 30.28 32.18	0.56 1.87 2.80 3.74 4.67 4.67 5.61 9.35 12.15 15.89 18.70 21.50 24.31 28.05 30.85 33.66 37.40 43.01 52.36 52.36	USA USA

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ANNEX 6

SHIPBOARD INCINERATORS

**Approved in accordance with appendix 2 of resolutions MEPC.59(33) and
MEPC.76(40), as amended**

Manufacturing Countries	Manufactured by	Type and Model	Maximum Capacity KW	Approving Governments
4. Norway (Cont'd)	3. Norsk Inova AS Nottoden, Norway	NH 600 SG-S NH 1200 SG-S NH 1600 SG-S	600 1200 1600	Nor Nor Nor
5. Republic of Korea	1. Kang Rim Industries Co. Ltd. Saha-gu, Pusan-city	IMO-KV-30SDA IMO-KIN-50SDA IMO-KIN-70SDA IMO-KIN-80SDA KEI-50SDA KEI-99SDA KIN-99SDA KEI-70SDA KGI-5SDA KEI-30SDA KGI-10SDA	346 603 847 928 603 1157 1157 848 58 348 147	ROK ROK; Nor ROK; Nor ROK; Nor ROK; Nor ROK; Nor ROK; Nor Nor Nor Nor Nor
	2. Hyundai Marine Machinery Co. Ltd., Seo-gu, Inchon-city	IMO-MAXI-25SL-1 IMO-MAXI-50SL-1 IMO-MAXI-100SL-1 - W/S IMO-MAXI-150SL-1 IMO-MAXI-100SL-1 IMO-MAXI-150SL-1 - W/S	208 371 580 812 580 812	ROK ROK ROK ROK ROK ROK
	3. Green and Clean Technology Co. Ltd Ulsan City Republic of Korea	GC-20I GC-30I GC-50I GC-70I	209 372 616 849	Nor Nor Nor Nor
6. Spain	DETEGASA Ctra. Castro-Meiras 15550 Valdoviño La Coruña	DELTA IR-10 DELTA IRL-10 DELTA IR-30 DELTA IRL-30 DELTA IR-50 DELTA IRL-50 DELTA IR-65 DELTA IRL-65	116.3 116.3 348.9 348.9 581.5 581.5 755.95 755.95	Spain Spain Spain Spain Spain Spain Spain Spain
7. United Kingdom	Hamworthy Engineering Limited	Series 40 R Type "C"	517.5	UK
8. United States	Therm-Tec, Inc. 20525 S.W. Cipole Rd Sherwood, OR 97140	Model M8	523	USA

ANNEX 7**15 PPM BILGE SEPARATORS**

**Approved in accordance with part 1 of the Annex to
resolution MEPC.107(49)**

Manufacturing Countries	Manufactured by	Type and Model	Maximum Throughput m ³ /h	Approving Governments
1. Germany	1. NFV Nord-deutsche Filter-Vertriebs-GmbH Tarpenring 33 22419 Hamburg	MPEB-1	1	FRG
		MPEB-2.5	2.5	FRG
		MPEB-5	5	FRG
		MPEB-10	10	FRG
		MPEB-VT-1	1	FRG
		MPEB-VT-2.5	2.5	FRG
		MPEB-VT-5	5	FRG
		MPEB-VT-10	10	FRG
		MPEB-VT-0.1	0.1	FRG
		MPEB-VT-0.25	0.25	FRG
		MPEB-VT-0.5	0.5	FRG
		PPT-BWS/MESB-100	0.1	FRG
		PPT-BWS/MESB-250	0.25	FRG
		PPT-BWS/MESB-500	0.5	FRG
		PPT-BWS/MESB-1000	1	FRG
		PPT-BWS/MESB-2500	2.5	FRG
		PPT-BWS/MESB-5000	5	FRG
		PPT-BWS/MESB-10000	10	FRG
	2. B + V Industrie-technik GmbH Hermann-Blohm-Str.5 20457 Hamburg Germany	Turbulo Entöler: TMPB 0.25	0.25	FRG
		TMPB 0.5	0.5	FRG
		TMPB 1	1	FRG
		TMPB 2.5	2.5	FRG
		TMPB 5	5	FRG
		TMPB 10	10	FRG
	3. RWO GmbH Leerkämpe 3 D-28259 Bremen	SKIT S DE 0.1	0.112	FRG
		SKIT S DE 0.25	0.25	FRG
		SKIT S DE 0.5	0.5	FRG
		SKIT S DE 1.0	1.0	FRG
		SKIT S DE 1.5	1.5	FRG
		SKIT S DE 2.5	2.5	FRG
		SKIT S DE 5.0	5.0	FRG
		SKIT S DE 10.0	10.0	FRG
		SKIT S DEB 0.1	0.1	FRG
		SKIT S DEB 0.25	0.25	FRG
		SKIT S DEB 0.5	0.5	FRG
		SKIT S DEB 1.0	1.0	FRG
		SKIT S DEB 1.5	1.5	FRG
		SKIT S DEB 2.5	2.5	FRG
		SKIT S DEB 5.0	5.0	FRG
		SKIT S DEB 10.0	10.0	FRG
	4. Westfalia Separator Mineraloil Systems GmbH D-59302 Oelde	WTC 2-03-107	0.2	FRG
		Bilgemaster 200	0.2	FRG
		Bilgemaster 1500	1.5	FRG
		Bilgemaster 3000	3.0	FRG
		Bilgemaster 6000	6.0	FRG

Manufacturing Countries	Manufactured by	Type and Model	Maximum Throughput m ³ /h	Approving Governments
1. Germany (Cont'd)	5. DVZ-Services GmbH/ ENVEKO GmbH Kirchweyher Str. 8 D-28844 Weyhe	PCM 250 PCM 1000 PCM 2500 DVZ 250 FSU-B- “OILCHIEF” DVS 500 FSU-B- “OILCHIEF” DVZ 1000 FSU-B- “OILCHIEF” DVZ 2500 FSU-B- “OILCHIEF” DVZ 5000 FSU-B- “OILCHIEF” DVZ 10000 FSU-B- “OILCHIEF” DVZ 250 FSU- “OILCHIEF” DVZ 500 FSU- “OILCHIEF” DVZ 1000 FSU- “OILCHIEF” DVZ 2500 FSU- “OILCHIEF” DVZ 5000 FSU- “OILCHIEF” DVZ 10000 FSU- “OILCHIEF”	0.25 1.0 2.5 0.25 0.5 1.0 2.5 5.0 10.0 0.25 0.5 1.0 2.5 5.0 10.0	FRG FRG FRG FRG FRG FRG FRG FRG FRG FRG FRG FRG FRG FRG FRG FRG FRG FRG

ANNEX 8**15 PPM BILGE ALARMS**

**Approved in accordance with part 2 of the Annex to
resolution MEPC.107(49)**

Manufacturing Countries	Manufactured by	Type and Model	Approving Governments
1. Germany	DECKMA Hamburg GmbH Kieler Strasse 316 22525 Hamburg	OMD 2005	FRG