

Table V-1. Ballast Water Treatment Systems Reviewed by Commission Staff

Manufacturer	Country	System Name	Technology Type	Technology Description	Approvals
Alfa Laval	Sweden	PureBallast	combination	filtration + advanced oxidation technology (hydroxyl radicals)	IMO Basic and Final
Degussa AG	Germany	Peraclean Ocean	chemical	biocide (peracetic acid and hydrogen peroxide)	IMO Basic
Ecochlor	USA	Ecopod	chemical	biocide (chlorine dioxide)	
Electrichlor	USA	Model EL 1-3 B	chemical	biocide (sodium hypochlorite)	
Environmental Technologies Inc.	USA	BWDS	combination	ozone + sonic energy	
Ferrate Treatment Technologies	USA		chemical	ferrate	
Greenship	Netherlands	Sedimentor + chlorination	combination	hydrocyclone + electrolytic chlorination	
Hamann AG	Germany	SEDNA System	combination	hydrocyclone + filtration + biocide (Peraclean Ocean)	IMO Basic (Peraclean)
Hi Tech Marine	Australia		physical	heat treatment	
Hitachi	Japan		physical (?)	coagulation + magnetic separation + filtration	
Hyde Marine	USA	Hyde Guardian, HBWTS	combination	filtration + UV	WA Conditional
Japan Assoc. Of Marine Safety	Japan	Special Pipe	combination	mechanical treatment + ozone	IMO Basic
JFE Engineering Corp.	Japan	JFE BWMS	combination	filtration + biocide (sodium chlorine) + cavitation	
L. Meyer GMBH	Germany		combination	filtration + disinfection liquid	

Table V-1 (Continued). Ballast Water Treatment Systems Reviewed by Commission Staff

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MARENCO	USA		combination	filtration + UV	WA General Approval
Maritime Solutions Inc.	USA		combination	centrifugal separation + UV or biocide (Seakleen)	
MH Systems	USA	BW treatment system	combination	deoxygenation + carbonation	
Mitsubishi Heavy Industries	Japan	Hybrid System	combination	filtration + electrolytic chlorination	
NEI	USA	Venturi Oxygen Stripping (VOS)	combination	deoxygenation	Type Approval (Liberia)
NKO	Korea		chemical	ozone	IMO Basic
Nutech 03 Inc.	USA	SCX 2000, Mark III	chemical	ozone	
OceanSaver	Norway	OceanSaver	combination	filtration + nitrogen saturation + cavitation	
OptiMarin	Norway	OptiMar	combination	hydrocyclone + UV	
Resource Ballast Technologies	South Africa	RBT Reactor	combination	cavitation + ozone + sodium hypochlorite	
RWO Marine Water Technology	Germany	CleanBallast!	combination	filtration + advanced electrolysis (EctoSys)	IMO Basic (EctoSys)
SeaKleen	USA	SeaKleen	chemical	biocide (menadione)	
Severn Trent DeNora	USA	BalPure	chemical	electrolytic generation of sodium hypochlorite	
Techcross Inc.	Korea	Electro-Clean	combination	electrochemical oxidation	IMO Basic