

IB Oden Environmental Plan Description

The following is a summary of the Environmental Operating Plan for the *IB Oden*. The environmental regulations do not follow the goal-based standards framework and instead are written in a prescriptive format. Four MARPOL annexes, each controlling different waste streams, are used as amended by the Polar Code:

Annex I – Oil

MARPOL Annex II – Noxious Liquid Substances

MARPOL Annex IV – Sewage

MARPOL Annex V – Garbage

Table 2-12 Vessel Capacity

Ship in transit, ice and open water

	Capacity	Duration	Note
FO (90%=3775m3)	4194	91	46m3/day
FW (inkl MAVA-Tk)	344	∞	Cons: 16m3, prod: 12+15m3, tot +11m3/day
Bilge	46	51	0,9m3/day
Sludge	46	77	0,6m3/day
Treated effluent	Treated and OB	∞	including greywater
Food waste >25mm**	33,7	∞	MARPOL Annex V -> OB
Sewage*		∞	MARPOL Annex IV -> OB
Garbage	30	200	1,5lit/person and day

Vessel stopped in ice

	Capacity	Duration	Note
FO (90%=3775m3)	4194	699	6m3/day (one boiler and one generator)
FW (inkl MAVA-Tk)	344	172	Cons: 14m3, prod 12m3, tot -2m3/day
Bilge	46	92	0,5m3/day
Sludge	46	230	0,2m3/day
Treated effluent	Treated and OB	∞	including greywater
Food waste >25mm**	33,7	42	0,4m3/day when not OB
Sewage*		42	0,4m3/day when not OB
Garbage	30	200	1,5lit/person and day

*When operating in Polar waters, there is special restrictions regarding discharge of Sewage over board, follow the rules in chapter 3.6.3. Sewage is inclusive of both gray water and black water.

**When operating in ice covered waters, no food waste is allowed to be discharge over board, follow the rules in chapter 3.6.4.

3.6.1. Prevention of pollution by oil

The Polar Code imposes a complete prohibition on any discharge into the sea of oil or oily mixtures from any ship in Polar waters. Furthermore: manuals, Oil Record Books, and the SOPEP shall be in compliance with these Polar Code requirements.

3.6.2. Pollution by noxious liquid substances from ships

Non-toxic biodegradable lubricants or water-based systems should be considered in lubricated components located outside the underwater hull with direct seawater interfaces, like shaft seals and slewing seals. Discharge of any Noxious Liquid Substances (NLS) is also completely prohibited in all Polar waters. Similar to the oil pollution regulations, the ship's Cargo Record Book, Manuals, and the SOPEP shall be in compliance with these Polar Code requirements

3.6.3. Pollution by sewage from ships

Discharge of comminuted and disinfected sewage must be at least 3 nautical miles from any ice-shelf or fast ice and far from ice concentrations greater than 1/10th coverage. Non-comminuted and non-disinfected sewage is subject to further restriction, more than 12 nautical miles from any ice shelf or land-fast ice. Even with approved sewage treatment plans, discharges must be kept as far as practicable from the nearest land, ice shelf, land-fast ice or areas of ice concentration greater than 1/10.

3.6.4. Pollution by garbage from ships

Food and garbage discharge limitations are imposed on ships operating in Polar waters to consider concentrations of ice in a similar way as the sewage restrictions. Furthermore, plans and records shall be in compliance with these Polar Code requirements.