

TABLE 1. Important physiological parameters for anaerobic and aerobic ammonium oxidation

Parameter	Anammox result	Nitrification ^a result	Unit
Maximum specific aerobic NH ₄ ⁺ consumption rate	0	2–5	g of NH ₄ ⁺ -N · g of protein ⁻¹ day ⁻¹
Maximum specific anaerobic NH ₄ ⁺ consumption rate	1.1	<0.05 ^b	g of NH ₄ ⁺ -N · g of protein ⁻¹ day ⁻¹
Biomass yield	0.07	0.1	g of protein · g of NH ₄ ⁺ -N ⁻¹
Activation energy	70	70	kJ · mol ⁻¹
Affinity for ammonium	≤10 ⁻⁴	≥10 ⁻⁴	g of NH ₄ ⁺ -N · liter ⁻¹
Affinity for nitrite	≤10 ⁻⁴	NA ^c	g of NO ₂ ⁻ -N · liter ⁻¹
Nitrite inhibition of ammonium consumption	K _i = 0.8, α = 0.8	Usually	g of NO ₂ ⁻ -N · liter ⁻¹
Nitrite inhibition of nitrite consumption	K _i = 1, α = 0.7	NA	g of NO ₂ ⁻ -N · liter ⁻¹
Temp range	20–43	≤42°C	°C
pH range	6.7–8.3	Variable	
Protein content of biomass	0.6	Variable	g of protein · g total dry weight ⁻¹
Protein density	50	Variable	g of protein · liter biomass ⁻¹

^a Data were obtained as described in reference 7, except where noted.

^b As described in reference 8

^c NA, not applicable.

7. **Wiesman, U.** 1997. Biological nitrogen removal from wastewater. *Adv. Biochem. Eng. Biotechnol.* **51**:113–153.

8. **Zart, D., and E. Bock.** 1998. High rate of aerobic nitrification and denitrification by *Nitrosomonas europaea* grown in a fermentor with complete biomass retention in the presence of gaseous NO₂ or NO. *Arch. Microbiol.* **169**:282–286.