NSF/ANSI Standard
For Wastewater Technology –

Residential Wastewater Treatment Systems –
Nitrogen Reduction

8 Performance testing and evaluation

8.2 Testing conditions, hydraulic loading and schedules

8.2.1 Influent wastewater characteristics

Except as required by NSF/ANSI 40 for systems seeking concurrent NSF/ANSI 40 and nitrogen reduction certification, the average wastewater characteristics delivered to the system over the course of the testing shall fall within:

— BOD$_5$: 100 to 300 mg/L;
— TSS: 100 to 350 mg/L;
— TKN: 35 to 70 mg/L (as N);
— Alkalinity: $> 175$ mg/L ratio of no less than 5:1 alkalinity (as CaCO$_3$):TKN (alkalinity may be adjusted if inadequate);
— temperature: 10 to 30 °C (50 to 86 °F); and
— pH: 6.5 to 9 SU.

Unless requested by the manufacturer, the raw influent shall be supplemented with sodium bicarbonate if the wastewater is found to be deficient in alkalinity. In addition, the influent shall be supplemented with urea to meet the required influent TKN concentration. The influent may also be supplemented with methanol to maintain a carbon:nitrogen ratio of no less than 5:1. Adjustments shall be made based on the 30-day rolling averages of TKN, BOD, and alkalinity.

NOTE — For this testing, minimum alkalinity may be calculated as described in Annex I-1.

If the influent temperature drops below 10 °C (50 °F), impacting the nitrification process, sample collection may be suspended until the influent temperature returns to 10 °C (50 °F).