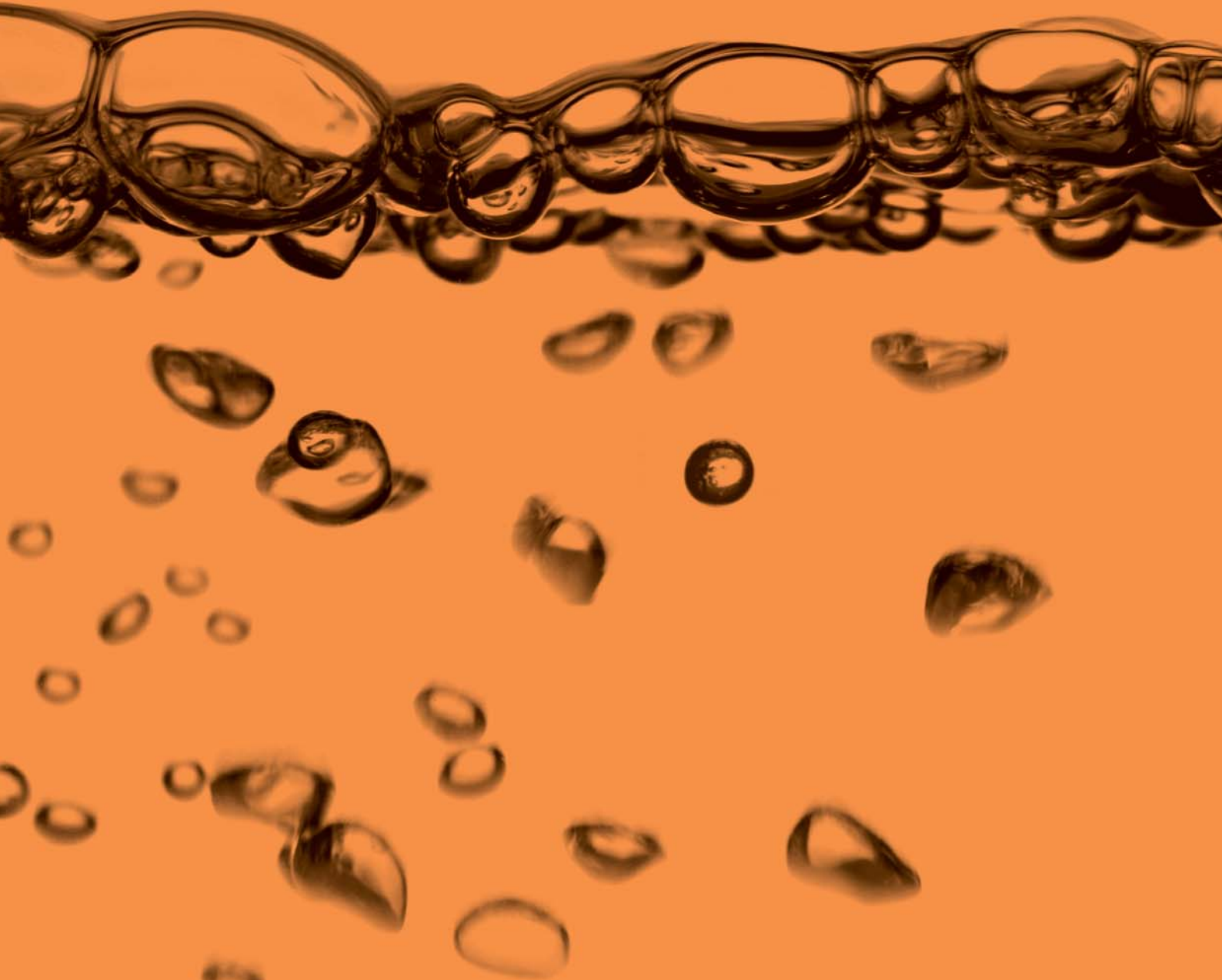


cbio
cleveland biotech
the natural solution



N-series

AMNITE® NS 5000
AMNITE® NB 2500

The natural solution to excess ammonia discharges, a range of nitrifying bacteria - Nitrosomonas (NS) and Nitrobacter (NB). NS converts Ammonia to Nitrite, NB converts Nitrite to Nitrate.

N-series

Installation/application requirements

Installed by:	Direct dosing by the customer
Power requirements:	None
Mains water requirements:	None
Injection point:	The bacteria are added to the inlet of the nitrification zone of the treatment plant, or directly to the fish pond filter

Product availability

Product is delivered in a watertight refrigerated container to ensure the biological activity is maintained

Bio-product description

Biological activity:	100 to 5000 mgN/t/hr
Description:	Brown liquid
Hazard group:	Hazard group 1

Health & Safety statement

Material Safety Data Sheets are available on request

ABATTOIR AMMONIA ISSUES SOLVED

A leading UK waste disposal company operates an aerobic effluent treatment plant that is capable of biologically treating a range of organic wastes from livestock to food. The 2 stage activated sludge plant, with a mean cell residence time of over 30 days, treats an influent waste stream of over 2500 ppm BOD and up to 1600 ppm ammonia at a pH of 7.5 and temperature of 13°C.

When operating at optimal biological efficiency, the plant routinely discharges ammonia at levels less than 1 ppm combined with equally efficient levels of COD removal.

Periodically however, the plant is subject to events which interfere with the resident microbial population, resulting in suboptimal biological performance and failure to meet the imposed Discharge Consent for ammonia and / or BOD. At least two such Discharge Consent breaches were noted by the local regulatory body, resulting in convictions and fines being imposed upon the company.

On one occasion a plant operator was attempting to raise the alkalinity of the oxic zone by adding lime slurry, however an error resulted in some 20 tonnes of slime slurry being pumped into the oxic zone. The net effect was to increase the pH to 13 - quite clearly outside the optimal pH range for microbial activity. To counter this event, heavy sulphuric acid dosing for a period of 48 hours recovered pH to neutrality, but unfortunately, by this time, the resident microbial biomass and, in particular, the sensitive nitrifiers had been inactivated.

CBIO was called upon to provide a biological recovery strategy in order to reinstate biological activity as quickly and as cost effectively as possible. Having considered the organic and ammoniacal nitrogen loadings on the plant, CBIO recommended that a shot dose of organic degraders be added to the aeration basins, and the feed forward rate to the treatment plant be reduced. 8 days after bio-augmentation with specialised CBIO organic degraders, the organic degradation capacity within the plant had been restored.

At this point AMNITE NS5000 - concentrated nitrifying paste - was simply poured into the oxic tank influent stream. 14 days after bio-augmentation with CBIO nitrifiers, the influent ammonia level of 1600 ppm had been reduced to less than 1 ppm at the outlet.

The Waste Disposal Treatment Plant Manager commented: "The plant is now nitrifying down to consent. We are very happy."

For companies that regularly experience problems achieving ammonia discharge consents, CBIO has now launched a 24-hour biological safeguard system to protect organisations operating treatment plants against discharging illegal levels of ammonia.

