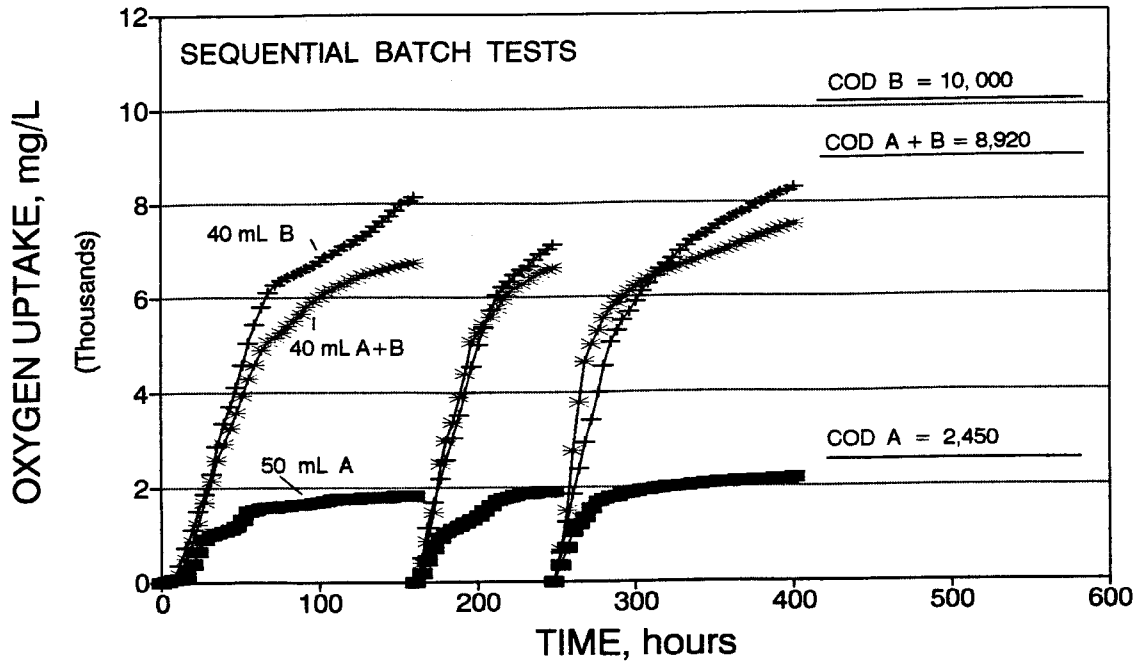
APPLICATION: INDUSTRIAL WASTE TREATABILITY



Waste Type: Industrial Waste

COD: 2,450 mg/L (A); 10,000 mg/L (B); 8,920 mg/L (A+6B)

Objective: To verify aerobic biodegradability of industrial wastes A and B and a combination of A + 6B.

Test Setup: 50 mL of A, 40 mL of B, and 40 mL of a mixture of one part A and six parts B were added respectively to individual respirometer flasks along with nutrients, minerals, and buffers. Twenty five milliliters of seed from a laboratory-scale aerobic reactor were added to each test unit. TCMP was added to eliminate interference from nitrification. Oxygen uptake was measured for 160 hours using a CHALLENGE AER-200 respirometer. A second dose of test waste equal in volume to the first dose was added to each test reactor -- after removing a similar amount of the contents -- and oxygen uptake measurements were continued for an additional 90 hours. A third dose of test waste was added, followed by measurement of oxygen uptake though a total test time of 400 hours.

Analysis: The oxygen used by oxidation of the organic materials in all the test samples averaged 80% of the COD in the first 160 hours. The biodegradation characteristics of the combined waste (A+6B) was essentially the same as for A and B individually. Subsequent tests indicated similar oxygen uptake patterns but with increasingly higher total oxygen uptake caused by the carry-over of residual organic material from previous test sets. These tests verified that the organic constituents in the waste were highly biodegradable. There was no evidence of toxicity, either in the first or subsequent test sets.