TBC-BRINADD

A DIVISION OF TEXAS UNITED CHEMICAL COMPANY, LLC

ENGINEERING CALCULATIONS

Mass Balance

Calculations provide initial liquid fractions and concentrations of inert weighting materials (in pounds per final barrel) to achieve a final barrel of a predetermined density.

$$[(350 - X) \bullet (W_1 \div 8.33)] + (sg \bullet X) = 350 \bullet (W_2 \div 8.33)$$

Where: W_1 = initial weight (lb/gal)
W_2 = desired weight (lb/gal)
sg = specific gravity of weighting agent
X = volume gain (ml/350 ml lab bbl)

Solve for X, then:

a) (350 – X) ÷ 350 = initial liquid fraction
b) sg • X = required concentration of weighting material in lb/bbl