

Calculate Liquid Chemical Dose

From Calibration Cylinder Drawdown

Feed Solution Strength Using Liquid Chemical

Product specific gravity

From product data sheet.
For hypochlorite use 1.00—SG included in product strength.

Product strength

In decimal form. Example: for 23.5% use 0.235.
For aluminum sulfate (alum), use dry alum equivalent, usually about 48.5% as aluminum sulfate or 0.485

Feed solution strength

Gallons of product ÷ gallons of final solution. Use 1.00 if fed full strength.
Tip: 128 fl oz = 16 cups = 1 gal

lb/gal

8.34

Chemical Concentration (lb/gal)

OR

Feed Solution Strength Using Dry Chemical

Chemical Name:

lbs of product added to solution tank.

Product purity (% active ingredient)

In decimal form. For soda ash, lime use 1.00

Gallons of final solution

Chemical Concentration (lb/gal)

Using This Poster

Start by entering the details of the dry or liquid chemical you're using (left). Next, using a timer and calibration cylinder, measure the chemical feed pump rate (right). Then fill in the numbers and use a calculator to find the current values for each of the colored boxes. Finally, plug those values into the equation at the bottom and calculate current dose.

Abbreviations

gpm: gallons per minute
fl oz: fluid ounces
lb: pounds
L: liters
mg: milligrams
MG: million gallons
MGD: million gallons per day
mL: milliliters (1/1000 liter)
SG: specific gravity

Plant Flow (gpm)

Convert to MGD **.00144**

1,440 min/day ÷ 1,000,000 = .00144

Plant Flow Rate (MGD)

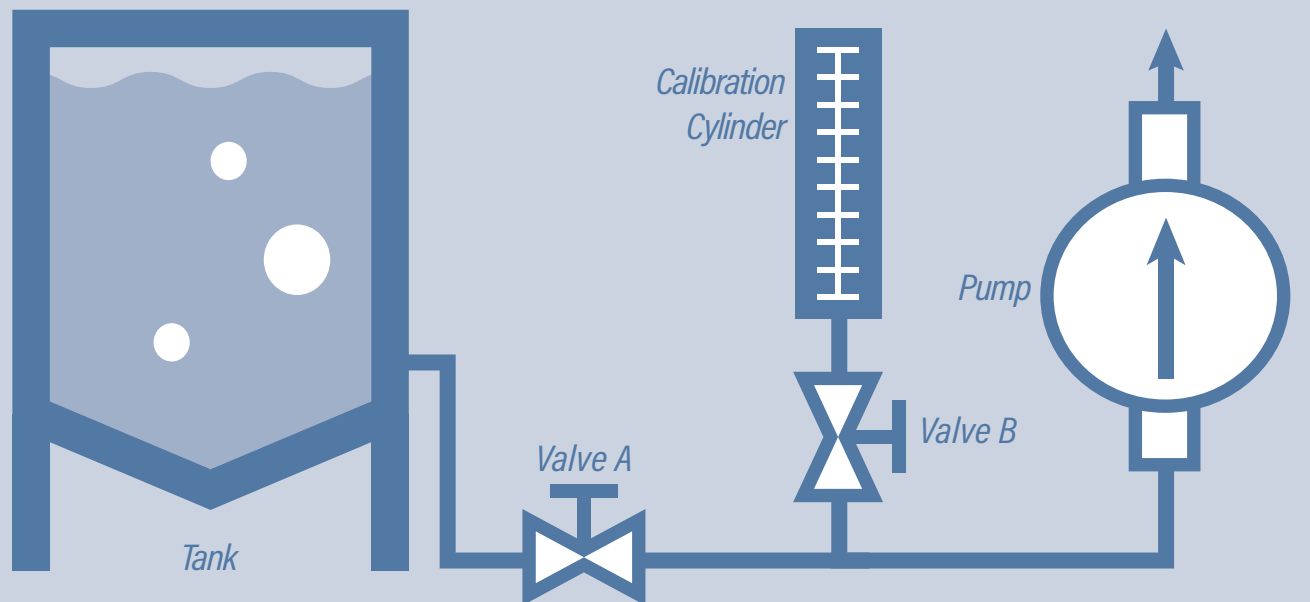
Drawdown from Calibration Cylinder (mL/min)

e.g., 50 mL drawdown ÷ 3.7 min = 13.5 mL/min

Convert to gal/day **0.38**

1,440 min/day ÷ 3,785 mL/gal ≈ .38

Chemical Feed Rate (gal/day)



$$\text{Dose} \left(\frac{\text{mg}}{\text{L}} \right) = \frac{\text{Chemical Feed Rate} \left(\frac{\text{gal}}{\text{day}} \right) \times \text{Chemical Concentration} \left(\frac{\text{lb}}{\text{gal}} \right)}{\text{Plant Flow Rate (MGD)} \times 8.34 \text{ (Conversion Factor)}}$$

Dose (mg/L)

Chemical Feed Rate (gal/day)

Chemical Concentration (lb/gal)

Plant Flow Rate (MGD)

8.34

Conversion Factor

Updated on (date): _____