



Chemical Injection Technologies

Application Bulletin

Cost Comparison Chlorine Gas vs. Hypochlorite

Cost per pound of *AVAILABLE CHLORINE*:

Gas Chlorine - is 100% pure, elemental chlorine which maintains its strength indefinitely.
Average cost per pound is \$0.45[†]. Since it is pure chlorine, the cost per pound of AVAILABLE CHLORINE = \$0.45/lb.

Powder Chlorine (Calcium Hypochlorite) - contains a maximum of 70% available chlorine.
Strength is rapidly lost in storage. Average cost per pound of powder chlorine is \$1.23[†]. Therefore, the cost per pound of AVAILABLE CHLORINE = **\$1.76/lb.**

Liquid Bleach (Sodium Hypochlorite) - contains approximately 10%[†] available chlorine.
Strength is rapidly lost in storage. Average cost per gallon is \$1.29[†]. One gallon weighs approximately 9 lbs. The cost of 1 lb. of bleach is calculated at $\$1.29 / 9 = \0.143 . At 10% strength the average cost per pound of AVAILABLE CHLORINE is determined as $\$0.143 \times 10 \text{ lbs. bleach} = \mathbf{\$1.43/lb}$

[†] Costs are average quotes from suppliers in Ft. Pierce, Florida metropolitan area, Nov. 1993. Costs may vary in your area, but the relative differences in costs of the three types of chlorine tend to remain constant.

[†] (Note: Most manufacturers of Sodium Hypochlorite will only guarantee a 10% chlorine strength in 16% solution, due to loss of strength in shipment and storage.)

COST COMPARISON OF \$ SPENT PER YEAR USING CHLORINE GAS VS. LIQUID BLEACH OR POWDERED CHLORINE

Operating Days Per Year	Type of Chlorine	POUNDS OF AVAILABLE CHLORINE USED EACH DAY						
		1 lb.	2 lbs.	4 lbs.	10 lbs.	25 lbs.	50 lbs.	100 lbs.
100 Days	Bleach	\$143	\$286	\$572	\$1,430	\$3,575	\$7,150	\$14,300
	Powder	176	352	704	1,760	4,400	8,800	17,600
	Gas	45	90	180	450	1,125	2,250	4,500
150 Days	Bleach	215	429	858	2,145	5,363	10,725	21,450
	Powder	264	528	1,056	2,640	6,600	13,200	26,400
	Gas	68	135	270	675	1,688	3,375	6,750
200 Days	Bleach	286	572	1,144	2,860	7,150	14,300	28,600
	Powder	352	704	1,408	3,520	8,800	17,600	35,200
	Gas	90	180	360	900	2,250	4,500	9,000
250 Days	Bleach	358	715	1,430	3,575	8,938	17,875	35,750
	Powder	440	880	1,760	4,400	11,000	22,000	44,000
	Gas	113	225	450	1,125	2,813	5,625	11,250
300 Days	Bleach	429	858	1,716	4,290	10,725	21,450	42,900
	Powder	528	1,056	2,112	5,280	13,200	26,400	52,800
	Gas	135	270	540	1,350	3,375	6,750	13,500
350 Days	Bleach	501	1,001	2,002	5,005	12,513	25,025	50,050
	Powder	616	1,232	2,464	6,160	15,400	30,800	61,600
	Gas	158	315	630	1,575	3,938	7,875	15,750