

Question 1:

The Chemco Company uses a highly toxic chemical in one of its manufacturing processes. It must have the product delivered by special cargo trucks designed for safe shipment of chemicals. As such, ordering (and delivery) costs are relatively high, at \$3600 per order. The chemical product is packaged in one-gallon plastic containers. The cost of holding the chemical in storage is \$50 per gallon per year. The annual demand for the chemical, which is constant over time, is 7000 gallons per year. The lead time from time of order placement until receipt is 10 days. The company operates 310 working days per year. Compute the optimal order quantity, total minimum inventory cost, and the reorder point.

Co	\$3.600	/order
Ch	\$50	/gallon/year
D	7000	gallons/year
L	10	days
Working days	310	days/year

Optimal order quantity:

EOQ 1.004 gallons

Total minimum inventory cost:

TC \$50.200

Reorder point:

R 226 days