Safety Stock

In this tutorial, we will examine how to calculate a safety stock problem.

The Hardware Warehouse is evaluating the safety stock policy for all of its items. For SKU M4389, the company always orders 80 units each time an order is placed. The daily demand is constant at 5 units per day; the lead time is normally distributed, with a mean of 3 days and a standard deviation of two days. Holding costs are $3 per unit per year and the company desires to maintain a 95% service level.

To calculate our safety stock, you will open Excel QM, click on the Excel QM tab → Alphabetical → Inventory → Reorder point/Safety Stock (Normal Distribution).
The Spreadsheet Information window will appear.

![Spreadsheet Initialization window](image)

Click **OK**. A spreadsheet will appear with tables for three models.
In this example, our demand is constant, but our lead time varies, with a standard deviation of 2. Be sure you enter the data where the model notes that either daily demand, lead time, or both are variable.

Our average daily demand is 5, our standard deviation of daily demand is 0, our average lead time is 3 days, our standard deviation of lead time is 2 days and our service level is 95%. When you enter this information into the data table, the results are automatically calculated.

![Excel QM Safety Stock Spreadsheet](image)

We can see from the results that we need to maintain a safety stock of 16.45 units (rounded up to 17) and our reorder point is 31.45 units (rounded up to 32). Click here to download the completed sample spreadsheet so you can compare it to yours.

This concludes the tutorial on calculating a safety stock problem using Excel QM.