

Earlier, you explored the White Polymer crisis team data (**CrisisTeamData.jmp**). Remember that these are historical data, collected by a previous team.

Let's say that you learned that there are problems with the measurement system for one of the primary characteristics, **MFI**, and that the data were collected in a haphazard manner.

You address the issues with the measurement system and you collect new data. These data are stored in **VSSNewData.jmp**.

In this practice, you use **Columns Viewer** to calculate measures of centering and spread for these new data.

Remember that **Yield** is the KPI and the two primary output characteristics of the polymer are **MFI** (specs are 192-198, and the target is 195), and **CI** (the lower spec is 80).

1. Open the file **VSSNewData.jmp** from the course data folder.
2. Select **Columns Viewer** from the **Cols** menu. Select **Yield**, **MFI**, and **CI**, select the **Show Quartiles** box, and select **Show Summary**.
3. What is the interquartile range (IQR) of **Yield**?

**Solution:**

The IQR for **Yield** is 14.55%.

4. Interpret the IQR for **Yield**.

**Solution:**

The width of the middle 50% of the **Yield** values is 14.55%. Or 50% of the **Yield** values fall between 82.275% and 96.825%.

5. What is the standard deviation for **MFI**?

**Solution:**

The standard deviation for **MFI** is 2.83.

6. What is the range of **MFI**?

**Solution:**

The range of **MFI** is  $209.35 - 193.75 = 15.6$ .

7. What is the first quartile for **CI**?

**Solution:**

The first quartile for **CI** is 79.5.

8. Compare the first quartile for **CI** to the lower specification (80). How do you interpret this from a practical perspective?

**Solution:**

The first quartile is 79.5, and the lower spec for **CI** is 80. Approximately 25% of the batches failed to meet the lower spec for **CI**.

Hide Solution