# **Exercise 8.4**

Consider the filtration data of Data Set G. Open the Excel workbook **Exe8.4G.xlsx** which contains these data from the Exercises folder.

Assuming the data to be suitably distributed, complete a two-tailed test of whether the population mean impurity differs between the two filtration agents, and interpret your findings.

## **Results**

|  |  |  |
| --- | --- | --- |
|  | **Agent 1** | **Agent 2** |
| Mean | 8.25 | 8.683333333 |
| Variance | 1.059090909 | 1.077878788 |
| Pearson Correlation | 0.901055812 |  |
| Hypothesized Mean Difference | 0 |  |
| P(T<=t) two-tail | 0.007545995 |  |
| P(T<=t) one-tail | 0.003772997 |  |
| Diff | 0.433333333 |  |

## A brief interpretation of the findings:

The sample mean numbers of impurity for Agents 1 and 2 were 8.25 and 8.68. Therefore, the data constitute significant evidence that the underlying mean number of impurities was greater for Design 2, by an estimated 8.68-8.25 = 0.43.

More impurities mean “bad”; therefore, Agent 2 is not ideal.