

MW-67D PCE												
General Statistics												
Total Number of Observations					6	Number of Distinct Observations					3	
Number of Detects					3	Number of Non-Detects					3	
Number of Distinct Detects					2	Number of Distinct Non-Detects					2	
Minimum Detect					0.3	Minimum Non-Detect					0.3	
Maximum Detect					0.33	Maximum Non-Detect					0.47	
Variance Detects					3.00E-04	Percent Non-Detects					50%	
Mean Detects					0.31	SD Detects					0.0173	
Median Detects					0.3	CV Detects					0.0559	
Skewness Detects					1.732	Kurtosis Detects					N/A	
Mean of Logged Detects					-1.172	SD of Logged Detects					0.055	
Warning: Data set has only 3 Detected Values.												
This is not enough to compute meaningful or reliable statistics and estimates.												
Note: Sample size is small (e.g., <10), if data are collected using incremental sampling methodology (ISM) approach,												
refer also to ITRC Tech Reg Guide on ISM (ITRC 2020 and ITRC 2012) for additional guidance,												
but note that ITRC may recommend the t-UCL or the Chebyshev UCL for small sample sizes (n < 7).												
The Chebyshev UCL often results in gross overestimates of the mean.												
Refer to the ProUCL 5.2 Technical Guide for a discussion of the Chebyshev UCL.												
Normal GOF Test on Detects Only												
Shapiro Wilk Test Statistic					0.75	Shapiro Wilk GOF Test						
1% Shapiro Wilk Critical Value					0.753	Detected Data Not Normal at 1% Significance Level						
Lilliefors Test Statistic					0.385	Lilliefors GOF Test						
1% Lilliefors Critical Value					0.429	Detected Data appear Normal at 1% Significance Level						
Detected Data appear Approximate Normal at 1% Significance Level												
Note GOF tests may be unreliable for small sample sizes												
Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs												
KM Mean					0.306	KM Standard Error of Mean					0.00657	
90KM SD					0.012	95% KM (BCA) UCL					N/A	
95% KM (t) UCL					0.319	95% KM (Percentile Bootstrap) UCL					N/A	
95% KM (z) UCL					0.317	95% KM Bootstrap t UCL					N/A	
90% KM Chebyshev UCL					0.326	95% KM Chebyshev UCL					0.335	
97.5% KM Chebyshev UCL					0.347	99% KM Chebyshev UCL					0.371	
Gamma GOF Tests on Detected Observations Only												

A-D Test Statistic				0.619	Anderson-Darling GOF Test					
5% A-D Critical Value				0.635	Detected data appear Gamma Distributed at 5% Significance Level					
K-S Test Statistic				0.427	Kolmogorov-Smirnov GOF					
5% K-S Critical Value				0.431	Detected data appear Gamma Distributed at 5% Significance Level					
Detected Data Not Gamma Distributed at 5% Significance Level										
Gamma Statistics on Detected Data Only										
k hat (MLE)				490.5	k star (bias corrected MLE)				N/A	
Theta hat (MLE)				6.32E-04	Theta star (bias corrected MLE)				N/A	
nu hat (MLE)				2943	nu star (bias corrected)				N/A	
Mean (detects)				0.31						
Gamma ROS Statistics using Imputed Non-Detects										
GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs										
GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)										
For such situations, GROS method may yield incorrect values of UCLs and BTVs										
This is especially true when the sample size is small.										
For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates										
Minimum				0.254	Mean				0.291	
Maximum				0.33	Median				0.295	
SD				0.0264	CV				0.0906	
k hat (MLE)				145.6	k star (bias corrected MLE)				72.91	
Theta hat (MLE)				0.002	Theta star (bias corrected MLE)				0.00399	
nu hat (MLE)				1747	nu star (bias corrected)				874.9	
Adjusted Level of Significance (β)				0.0122						
Approximate Chi Square Value (874.92, α)				807.3	Adjusted Chi Square Value (874.92, β)				783.5	
95% Gamma Approximate UCL				0.315	95% Gamma Adjusted UCL				N/A	
Estimates of Gamma Parameters using KM Estimates										
Mean (KM)				0.306	SD (KM)				0.012	
Variance (KM)				1.44E-04	SE of Mean (KM)				0.00657	
k hat (KM)				650.2	k star (KM)				325.2	
nu hat (KM)				7803	nu star (KM)				3903	
theta hat (KM)				4.71E-04	theta star (KM)				9.41E-04	
80% gamma percentile (KM)				0.32	90% gamma percentile (KM)				0.328	
95% gamma percentile (KM)				0.334	99% gamma percentile (KM)				0.347	
Gamma Kaplan-Meier (KM) Statistics										
Approximate Chi Square Value (N/A, α)				3759	Adjusted Chi Square Value (N/A, β)				3707	
95% KM Approximate Gamma UCL				0.318	95% KM Adjusted Gamma UCL				0.322	

Lognormal GOF Test on Detected Observations Only												
Shapiro Wilk Test Statistic				0.75	Shapiro Wilk GOF Test							
10% Shapiro Wilk Critical Value				0.789	Detected Data Not Lognormal at 10% Significance Level							
Lilliefors Test Statistic				0.385	Lilliefors GOF Test							
10% Lilliefors Critical Value				0.389	Detected Data appear Lognormal at 10% Significance Level							
Detected Data appear Approximate Lognormal at 10% Significance Level												
Note GOF tests may be unreliable for small sample sizes												
Lognormal ROS Statistics Using Imputed Non-Detects												
Mean in Original Scale				0.292	Mean in Log Scale						-1.234	
SD in Original Scale				0.0249	SD in Log Scale						0.0852	
95% t UCL (assumes normality of ROS data)				0.312	95% Percentile Bootstrap UCL						0.308	
95% BCA Bootstrap UCL				0.307	95% Bootstrap t UCL						0.313	
95% H-UCL (Log ROS)				N/A								
Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution												
KM Mean (logged)				-1.185	KM Geo Mean						0.306	
KM SD (logged)				0.0381	95% Critical H Value (KM-Log)						N/A	
KM Standard Error of Mean (logged)				0.0209	95% H-UCL (KM -Log)						N/A	
KM SD (logged)				0.0381	95% Critical H Value (KM-Log)						N/A	
KM Standard Error of Mean (logged)				0.0209								
DL/2 Statistics												
DL/2 Normal					DL/2 Log-Transformed							
Mean in Original Scale				0.244	Mean in Log Scale						-1.46	
SD in Original Scale				0.0793	SD in Log Scale						0.357	
95% t UCL (Assumes normality)				0.309	95% H-Stat UCL						0.359	
DL/2 is not a recommended method, provided for comparisons and historical reasons												
Nonparametric Distribution Free UCL Statistics												
Detected Data appear Approximate Normal Distributed at 1% Significance Level												
Suggested UCL to Use												
95% KM (t) UCL				0.319								
When a data set follows an approximate distribution passing only one of the GOF tests,												
it is suggested to use a UCL based upon a distribution passing both GOF tests in ProUCL												
Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.												
Recommendations are based upon data size, data distribution, and skewness using results from simulation studies.												
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.												