

LDEOC/EOEC SURVEILLANCE PANEL

A LDEOC/EOEC conference call was held on 3-26-19, at 9 am Central Standard Time. The following esteemed members were on the call:

Mike Lopez - Intertek
Kimberly Hernandez - Intertek
Mike Birke – SwRI
Jason Bowden – OHT
Doyle Boese – Infineum
Conika Own-Robinson – Savant
Vince Donndelinger - Lubrizol
Maggie Smerdon - Savant
Mike Kasimirsky – TMC
Robert Stockwell – Oronite
Laura Birnbaumer - Oronite
Gefei Wu - Valvoline
Becky Grinfield – SwRI
Michael Johnscher - ISP

The purpose of the call was to discuss/approve the LDEOC batch 23 ACM-1 Volume Change Industry Correction Factor. Doyle presented the statistical data (attached). Based on the statistical analysis, the recommendation is to apply an industry correction factor of -2.72%. Doyle made a few clarifications on his presentation.

- 1) Slide 4 – the data shows batches 19 – 22 with the industry correction factor applied, while batch 23 is uncorrected. Mike Kasimirsky pointed out that a portion of the batch 19 data was also uncorrected, as batch 19 is where the first correction factor was applied.
- 2) Slide 7 - the ICF for Batch 23 should be -2.72%, not -1.65%.

Despite the minor errors in the presentation, the task force hung on Doyle's every word as he continued to present the other slides. Doyle commented Batch 23 hardness and tensile are lower than previous batches, but still within limits. He also noted that the number of samples used to generate the industry correction factor is appropriate. Jason Bowden made a motion to accept -2.72% as the Volume Change Industry Correction Factor for LDEOC Batch 23 ACM-1. The motion was unanimously approved and the motion carried. Mike Kasimirsky noted the information letter is already being generated and should be sent to Mike Birke for signature shortly. Mike Birke will then distribute the letter to the task force.

There was no other business and the call adjourned at 9:17 am.

LDEOC ACM-1 Batch 23 Industry Correction Factor

D. Boese

March 15, 2019

Performance you can rely on.



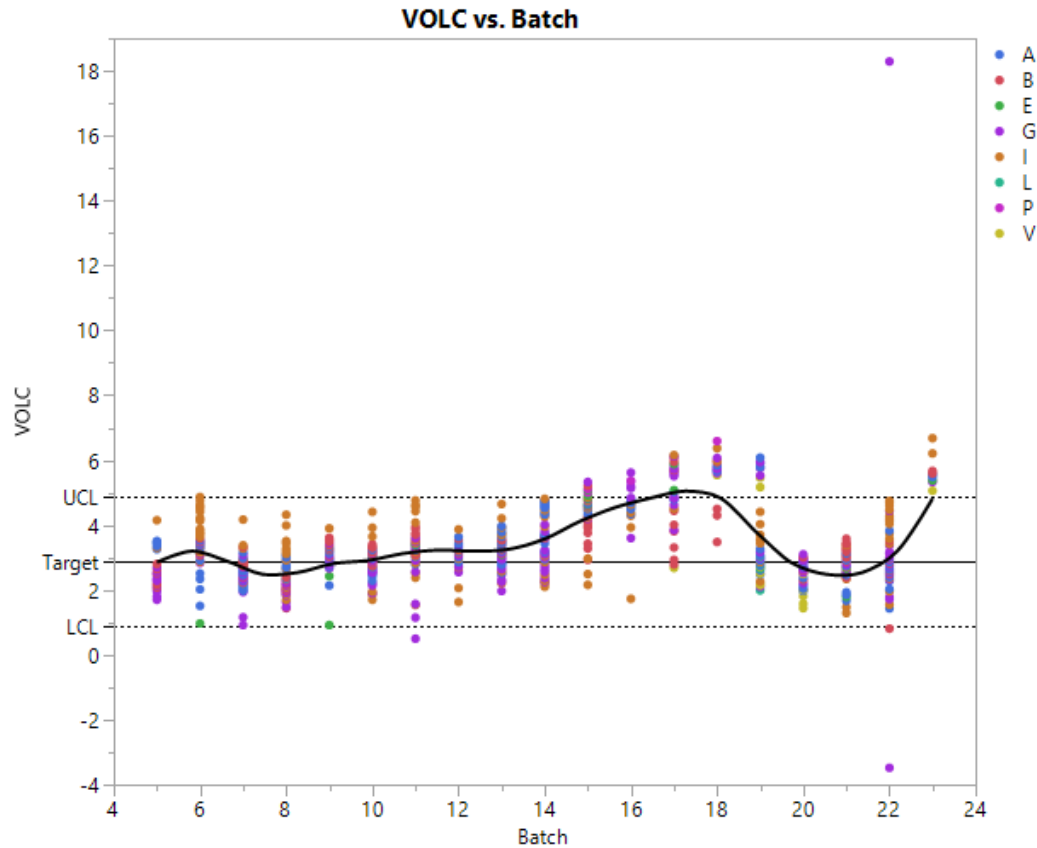
Summary

- Recommend a Volume Change Industry Correction Factor (ICF) of -2.72% for Batch 23 ACM-1.
- Batch 23 ACM-1 sample averages for HARD and TENS are within 1.5 and 1 standard deviation of target, respectively.

Data

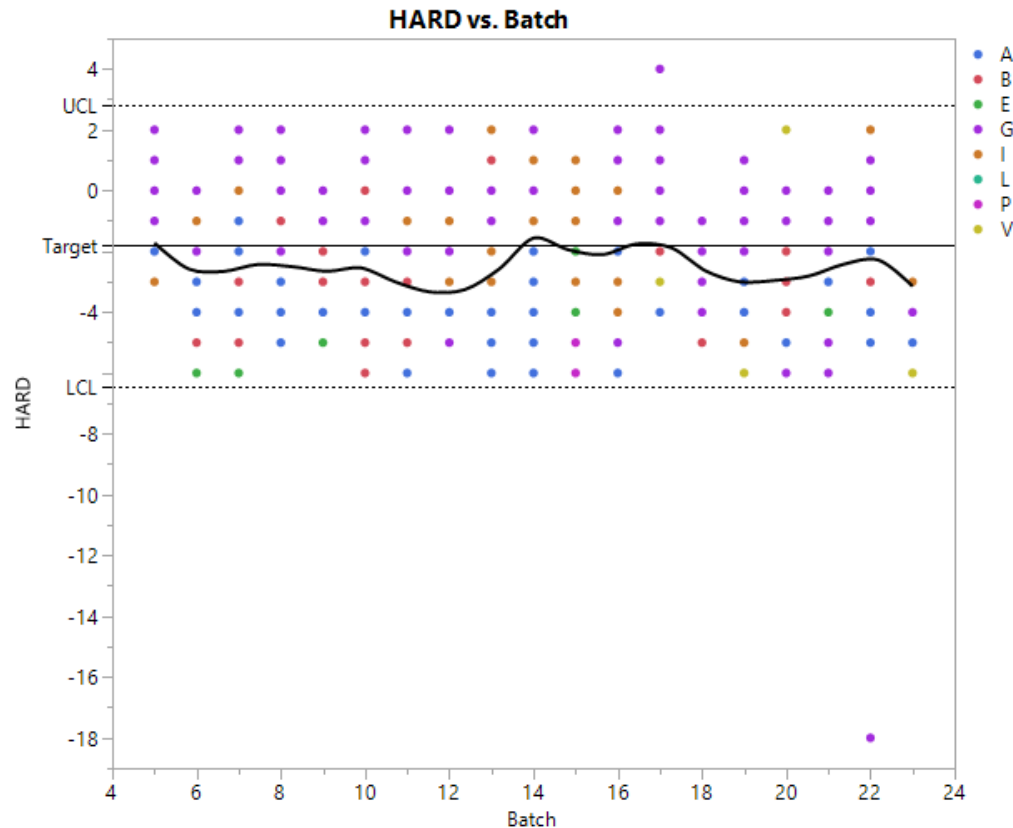
- The data is as of March 13, 2019.
- Six labs (A, B, E, G, I and V) each ran in separate baths 2 tests of Batch 23 ACM-1.

Unadjusted Volume Change



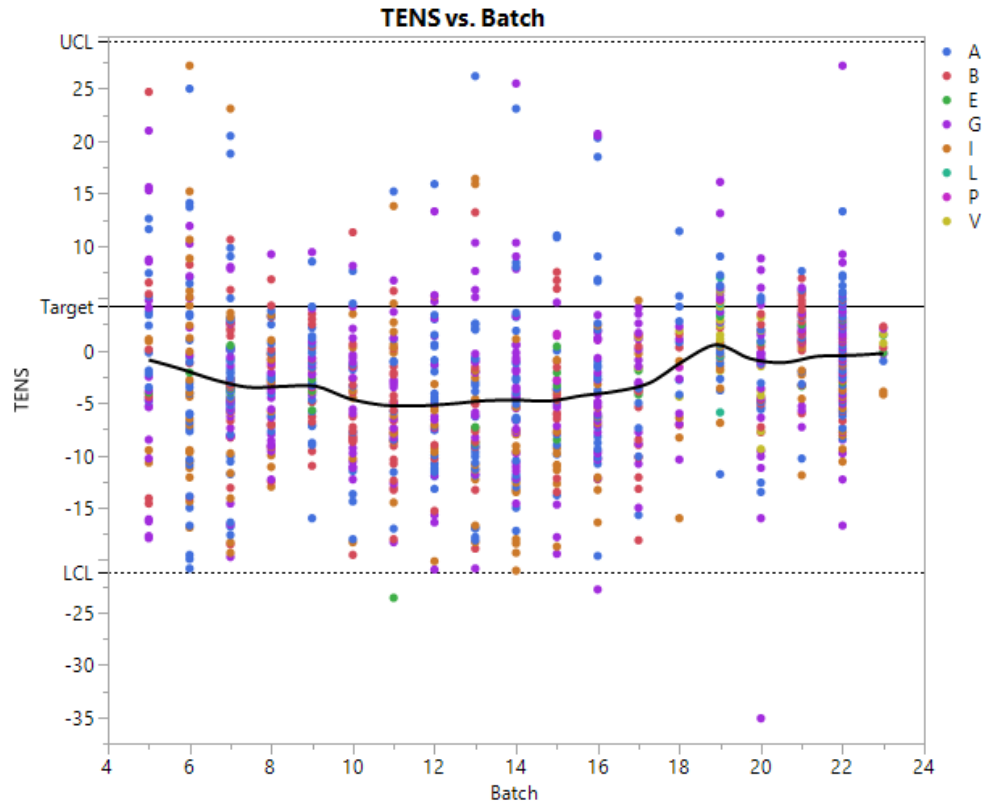
- Plotted is Volume Change without ICF for batches at the current target.
 - Except for current batch, only chartable (valid calibration) data are plotted.
- Batch 23 VOLC appears higher than previous batches.
- All 12 unadjusted Batch 23 VOLC results are higher than the upper calibration limits.

Hardness Change



- Plotted is Hardness Change for batches at the current target.
 - Except for current batch, only chartable (valid calibration) data are plotted.
- Batch 23 HARD appears lower than previous batches.
- All 12 unadjusted Batch 23 HARD results are within the calibration limits but below target.

Tensile Strength Change



- Plotted is Tensile Strength Change for batches at the current target.
 - Except for current batch, only chartable (valid calibration) data are plotted.
- Batch 23 TENS appears similar to recent batches.
- Each of the batches have averaged below target with the last 6 batches averaging within a standard deviation.

Industry Correction Factor

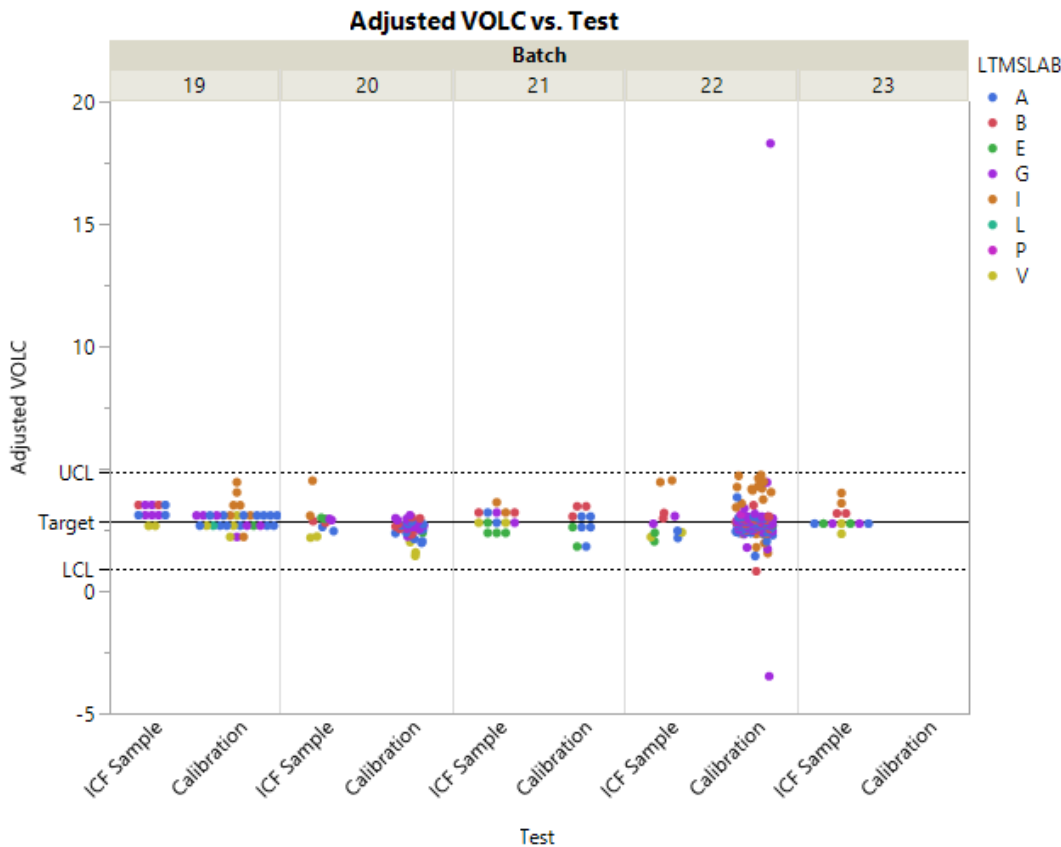
- The ICF (Target – Batch 23 Average) for VOLC is -1.65% and is statistically significant.
- ICFs are not calculated for HARD and TENS.

Statistic	VOLC	HARD	TENS
Batch 23 Average	5.60	-4.00	-0.12
Target	2.88	-1.82	4.19
Batch 23 ICF	-2.72		
p-Value	< 0.0001		

Unadjusted Batch 23 Lab Averages

Lab	VOLC	HARD	TENS
A	5.52	-5	-0.7
B	5.63	-3	1.3
E	5.38	-4	0.7
G	5.42	-4	0.9
I	6.45	-3	-4.1
V	5.21	-6	1.2

Volume Change with ICF Applied



Batch	ICF
19	-2.65
20	-3.14
21	-2.53
22	-1.65
23	-2.72

- ICFs were applied to each Batch including the proposed ICF for Batch 23.
- ICFs are adjusting VOLC within Calibration Limits.
- Calibration VOLC results generally being within Calibration Limits indicates the sample size of the ICF Calculation Sample is sufficient.

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