A Program of ASTM International

Test Monitoring Center

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L-60-1 Information Letter 15-4
Sequence Number 48
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ASTM consensus has not been obtained on this information letter. An appropriate ASTM ballot will be issued in order to achieve such consensus.

TO: L-60-1 Surveillance Panel

SUBJECT: 1. Removal of transformations from reported test parameters
2. Implementation of correction factor for carbon varnish

During its August 12, 2015 meeting, the L-60-1 Surveillance Panel discussed a plan to return test severity, particularly the carbon varnish parameter, to the desired, historic level. In an email ballot that closed September 28, the panel approved the changes to D5704 outlined in the attached revised text. These changes are effective for all tests ending on or after October 1, 2015.

Larry Hamilton
Chairman
L-60-1 Surveillance Panel

Frank M. Farber
Director
ASTM Test Monitoring Center

Attachments

cc: ftp://ftp.astmtmc.cmu.edu/docs/gear/l601/procedure_and_ils/il15-4.pdf

Distribution: Email

(Revises Test Method D 5704-15 as revised by Information Letters 15-1, 15-2, and 15-3)

Replace the text of section 14.3 with the following:

14.3 An industry-wide average carbon varnish severity shift began sometime in the year 2000. No cause for this shift has been determined. To compensate for this shift, correct the average carbon varnish result for all tests by adding 0.6 merits to the rated average carbon varnish.

Replace the text of section 15.8 with the following:

15.8 For tests with viscosity results that are too viscous to measure, report a value of NA for both the test result and the transformed result. For test results where viscosity is too viscous to measure or have a value of zero for viscosity increase, pentane insolubles, or toluene insolubles, do not apply any severity adjustment.

Replace Table 2 with the following:

TABLE 2 Reference Oil Test Precision Data—Transformed Units

NOTE 1—These statistics are based on results obtained on Test Monitoring Center Reference Oils 148, 148-1, 133, 131-3, 131-4, 143, and 151-2 as of September 20, 2015.

where:

$S_{i.p.}$ = intermediate precision standard deviation,

i.p. = intermediate precision,

S_R = reproducibility standard deviation, and

R = reproducibility.

Variable	$S_{i.p.}$	i.p.[A]	S_R	R[A]
Average carbon varnish, (merit)	0.505	1.414	0.532	1.490
Average sludge, (merit)	0.104	0.291	0.106	0.297
Pentane insolubles, (mass fraction, %)	0.383	1.072	0.401	1.123
Toluene insolubles, (mass fraction, %)	0.295	0.826	0.312	0.874
Viscosity increase, (increase, %)	6.178	17.298	6.328	17.718

[A] This value is obtained by multiplying the standard deviation by 2.8.

Replace Annex A9 with the following (including deletion of sections A9.3, A9.4, and A9.5):

A9. CORRECTIONS TO NON-REFERENCE OIL TESTS FOR INDUSTRY SEVERITY

A9.1 Viscosity Increase—Adjust end of test viscosity increase (VISINC) results for industry severity as follows.

A9.1.1 Calculate the transformed viscosity increase (TVISINC) using the equation: TVISINC = ln(VISINC).
A9.1.2 The viscosity increase correction factor (VISINCCF) is -0.1178. Calculate the corrected transformed viscosity increase (VISICCOR) using the equation: VISICCOR = TVISIC + VISINCCF.
A9.1.3 Calculate the corrected original unit viscosity increase (OVISI) using the equation: OVISI = exp(VISICCOR).

A9.2 Pentane Insolubles—Adjust end of test pentane insolubles (PEN) results for industry severity as follows.
A9.2.1 Calculate the transformed pentane insolubles (TPEN) using the equation: TPEN = ln(PEN).
A9.2.2 The pentane insolubles correction factor (PENCF) is -0.4445. Calculate the corrected transformed pentane insolubles (PENCOR) using the equation: PENCOR = TPEN + PENCF.
A9.2.3 Calculate the corrected original unit pentane insolubles (OPEN) using the equation: OPEN = exp(PENCOR).