CODE BULLETIN C-49
Correction

American Chemistry Council
Product Approval Code of Practice
December 2010 Edition

To: **Practitioners of the American Chemistry Council Product Approval Code of Practice Interested Parties**

Correction Date: **August 23, 2016**

Original Issue date: **April 1, 2016**

Effective Date: **May 1, 2016**

Re: **Correction to Code Bulletin C-49: Appendix F Revision- Defining MTEP for the Caterpillar engine Oil Aeration Test (COAT), Mack T-12, and Volvo T-13 Product Approval Code of Practice – December 2010 Edition**

Code Bulletin C-49, issued on April 1, 2016 and effective on May 1, 2016, contained a formatting error. All technical information in Code Bulletin C-49 was accurate and remains unchanged. The corrected information is contained in this document.

The American Chemistry Council's (ACC) Product Approval Protocol Task Group (PAPTG) reached consensus to revise Appendix F for the purpose of defining Multiple Test Evaluation Procedures (MTEP) for the Caterpillar engine Oil Aeration Test (COAT), Mack T-12, and Volvo T-13 engine tests. Existing text and proposed edits to Appendix F are provided below. Please note: The full table of MTEP Methods for Rated Parameters is not listed in this bulletin as it contains 21 entries and spans several pages. The tables used below include the last two existing entries and the entries for added or modified tests.

Existing Text on Page F-6 through F-7

Test	Type of MTEP	Parameter (Units) (note1)
Mack T-8E	TLM	Viscosity Increase at 3.8% soot (cSt)

	TLM	Relative Viscosity at 4.8% soot (unitless number)
Mack T-11	TLM	TGA % Soot @ 4.0 cSt increase @ 100° C TGA % Soot @ 12.0 cSt increase @ 100° C TGA % Soot @ 15.0 cSt increase @ 100° C

Notes:
1) Units for parameters in italics are transformed. See next section for specific transformations.
2) The majority of retained tests must not have ring sticking (hot stuck).
3) The majority of retained tests must not have compression ring sticking (hot stuck).
4) None of the retained tests may have piston ring sticking.
5) If three or more operationally valid tests have been run, the majority of these tests must not have scuffing. Any scuffed tests are considered non-interpretable, and no data from these tests are to be used in MTEP calculations.
6) Two methods of calculating WTD are used, one for API Category CF and a different one for API Category CF-2. Both methods use MTAC for handling test results.
7) None of the retained tests may have piston, ring or liner scuffing.
8) The parameters used in calculating the Merit Rating value are shown.

List of Transformations of Rated Parameters

Test	Parameter	Transformation
Sequence IIIF	Viscosity, % Increase	1/square root of the % increase at 80 hours
Sequence IIIFHD	Viscosity, % Increase	LN (PVISH060)
Sequence IIIG	Viscosity, % Increase Avg. cam plus lifter wear	LN (PVISH100) LN (ACLW)
Sequence VG	Oil Screen Clogging	LN (oil screen clogging +1)
Caterpillar 1K	Top Land Heavy Carbon	LN (TLHC + 1)
Caterpillar 1N	Top Land Heavy Carbon	LN (TLHC + 1)
Caterpillar 1P	Average Oil Consumption Final Oil Consumption	LN (AOC) LN (FOC)
Caterpillar C13	Delta Oil Consumption (g/h) Second Ring Top Carbon	Square root (Delta OC) LN(R2TC)
Mack T-12	Delta Pb @ EOT Delta Pb 250 to 300 hours Oil Consumption	LN (DPbEOT) LN (DPb250300) LN (OC)
Cummins ISM	Oil Filter Pressure Delta	LN (OFDP)

Proposed Text on Page F-6 through F-7

Test	Type of MTEP	Parameter (Units) (note1)
Mack T-8E	TLM TLM	Viscosity Increase at 3.8% soot (cSt) Relative Viscosity at 4.8% soot (unitless number)
Mack T-11	TLM	TGA % Soot @ 4.0 cSt increase @ 100° C TGA % Soot @ 12.0 cSt increase @ 100° C TGA % Soot @ 15.0 cSt increase @ 100° C
Mack T-12 (note 9)	TLM	Liner Wear, µm Top Ring Mass Loss, mg Lead Content at EOT, mg/kg
Mack T-12 (note 10)	MRS	Cylinder Liner Wear, µm Top Ring Mass Loss, mg Delta Lead, Final, mg/kg Delta Lead (250-300h), mg/kg Oil Consumption, g/h
Mack T-12 (note 11)	MTAC (note 12)	Top Ring Mass Loss, mg Cylinder Liner Wear, µm
Volvo T-13	TLM	IR Peak at EOT, Abs., cm^{-1} Kinematic Viscosity Increase at 40°C, %
COAT	MTAC (note 12)	Average Aeration, 40h to 50h, %

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4) None of the retained tests may have piston ring sticking.
5) If three or more operationally valid tests have been run, the majority of these tests must not have scuffing. Any scuffed tests are considered non-interpretable, and no data from these tests are to be used in MTEP calculations.
6) Two methods of calculating WTD are used, one for API Category CF and a different one for API Category CF-2. Both methods use MTAC for handling test results.
7) None of the retained tests may have piston, ring or liner scuffing.
8) The parameters used in calculating the Merit Rating value are shown.
9) This TLM applies to Mack T-12 used in API Category CH-4.
10) This MRS applies to Mack T-12 used in API Category CI-4 and CJ-4.
11) This MTAC applies to Mack T-12 used in API Category CK-4 and FA-4.
12) The MTAC provision to discard any valid test result is not applicable (See Appendix F, pg. F-3, Three or More Tests, Number 2).

List of Transformations of Rated Parameters

Test	Parameter	Transformation
Sequence IIIF	Viscosity, % Increase	1/square root of the % increase at 80 hours
Sequence IIIFHD	Viscosity, % Increase	LN (PVISH060)
Sequence IIIG	Viscosity, % Increase Avg. cam plus lifter wear	LN (PVISH100) LN (ACLW)
Sequence VG	Oil Screen Clogging	LN (oil screen clogging +1)
Caterpillar 1K	Top Land Heavy Carbon	LN (TLHC + 1)
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Caterpillar 1P	Average Oil Consumption Final Oil Consumption	LN (AOC) LN (FOC)
Caterpillar C13	Delta Oil Consumption (g/h) Second Ring Top Carbon	Square root (Delta OC) LN(R2TC)
Mack T-12	Delta Pb @ EOT Delta Pb 250 to 300 hours Oil Consumption	LN (DPbEOT) LN (DPb250300) LN (OC)
Cummins ISM	Oil Filter Pressure Delta	LN (OFDP)
Volvo T-13	Kinematic Viscosity Increase at 40°C	Square root (KV40)

The Code is available online at http://www.americanchemistry.com/paptg.