



Test Monitoring Center

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Sequence IIIH Information Letter 20-1
Sequence Number 14
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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: Sequence III Surveillance Panel

SUBJECT: Clarifications to Appendix X2

During the December 17, 2019 Sequence III Surveillance Panel conference call, the panel discussed and approved several clarifications to the phosphorus retention calculation shown in Appendix X2 Sections X2.5.1.1 and X2.5.1.2 have been revised to better identify the results to be used in the phosphorus retention calculation.

Test Method D8111-19a has been revised to incorporate these changes. The text of the revisions are shown in red in the attachment and are effective with the issuance of this letter.

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Attachment

c: http://www.astmtmc.cmu.edu/ftp/docs/gas/sequenceiii/procedure_and_ils/IIIH/il20-1_IIIH.pdf

Distribution: Email

(Revises D8111-19a as amended by Information Letter 19-4)

X2.5.1 *Phosphorus Retention Calculation:*

X2.5.1.1 Using the element concentrations reported in X2.4.3.3 for the initial oil sample, determine which of the following metals, sodium (Na), calcium (Ca), or magnesium (Mg) has the highest concentration and report this element as the detergent metal on Form 7.

X2.5.1.2 Determine the phosphorus retention, P_{ret} , using Eq X2.1:

$$P_{ret} = (M_i/M_{eot}) \times (P_{eot}/P_i) \times 100 \quad (X2.1)$$

Where:

- P_{ret} = the phosphorus retention expressed as %
- M = the metal (Ca, Na, or Mg) with the highest initial oil concentration
- M_i = initial oil sample mass fraction of M, mg/kg,
- M_{eot} = end of test mass fraction of M, mg/kg,
- P_i = initial oil sample mass fraction of phosphorus (P), mg/kg,
- P_{eot} = end of test mass fraction of phosphorus (P), mg/kg.