


EXIT CRITERIA BALLOT

ASTM-HDEOCP BALLOT FOR VOTING MEMBERS ONLY Reference: Jim Mc Geehan, Chairman	Issue Date: March 2th , 2005 Receipt Deadline: <b style="color: red;">March 24th , 2005
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RETURN BALLOT TO: Pat Connelly via email (preferred): patconnelly@chevrontexaco.com or via Fax: 510-242-3758	Name: <u>William Kleiser</u> Organization: <u>Chevron Oronite LLC</u> Date: <u>March 21, 2005</u> Phone No.: <u>510 242 3027</u>
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Motion	Affirmative	Negative
<p>The following motion was made at the HDEOCP and passed unanimously.</p> <p style="text-align: center;">MOTION</p> <p>Acceptance of the proposed Mack T-10 limits to qualify an oil as passing the Mack T- 9 test. (Reference limits below)</p> <div style="text-align: center;">  Microsoft PowerPoint Presentation </div>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Comments:

Chevron Oronite supports the approach of using a variety lubricants run in both the Mack T9 and T10 tests to establish equivalent pass limits. However, we feel that the limits proposed for API CH-4 based on the T10 require some revision for the following two reasons:

- 1) According to the data presented there appears to be a linear relationship between T9 and T10 lead described by the following equation: $T9Pb=0.5089(T10Pb)-5.486$. Using this equation we can calculate that based on the CH-4 Pb increase limit of 25ppm, the equivalent T10 limit is 60ppm. The current proposed one run limit of 40ppm corresponds to a T9 limit of 15ppm, which is significantly different from the CH-4 pass limit and would represent a change in the performance standard.
- 2) Based on the average difference in Top Ring Weight Loss (TRWL), there is a 30mg off set in severity. The T-9 CH-4 one run limit is 120mg, this would translate to 150mg in the T10, based on this data.

Based on the above issues, Chevron Oronite would be willing to accept limits similar to those listed below which we feel represent a direct conversion from the T9 to T10 based on the data presented.

T10 Top Ring Weight Loss, mg: 150
T10 Liner Wear Step, um: 30
T10 EOT Lead Increase, ppm: 60