

Summary of Ethanol Impacts on Permeation

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Estimating Ethanol's Impact

- Ethanol impact on permeation is real and significant
- ARB is commended for leading effort to develop estimate based on sound science
- New CRC data provides improved estimate, especially for the future fleet

ARB's On-Road Estimates Are Too High

	Increase in Permeation Due to Ethanol (South Coast, 2010)
ARB	8.7 tons/day
AIR	5.6 tons/day

- Differences have major impact on fuel properties
- Differences due to:
 - Inclusion of new CRC data not yet in ARB estimates
 - ARB use of ambient temperature to model permeation, not fuel tank temperature

Recommendations

- Two options for improving estimates
 - Option 1 – Additive approach (AIR)
 - Use updated CRC data
 - Base estimate on actual vehicle data
 - Advantage: Straightforward
 - Option 2 – Multiplicative approach (ARB)
 - Use updated CRC data
 - Base estimate on fuel tank temperature, not ambient temperature
 - Advantage: Meshes with EMFAC
- Option 1 preferred, but both should agree