



Other CRC Ethanol/Gasoline Studies Planned or Under Consideration

South Coast Air Quality Management District
Ethanol Forum & Roundtable
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Key Factors Driving CRC Ethanol Studies

- State of Minnesota legislation requiring E20 statewide in 2013
 - Other states expressing interest
 - Requires EPA waiver to be implemented
 - CRC Board directed committees to incorporate E20 fuels in ongoing programs where feasible, and to propose new programs to fill information gaps
- Increasing state and federal interest in E85
 - Minimal data available on tailpipe emissions from in-use FFVs over the range of ethanol blends possible (E0-E85)
 - Minimal data available on FFV evap/permeation emissions
 - Minimal data available on in-use E85 fuels



E20 – Key Issues of Concern

- Vehicle emissions impacts
 - Tailpipe
 - Evaporative/permeation
- Vehicle performance impacts
 - Driveability
 - Fuel economy
- Materials compatibility
 - Elastomers
 - Metal corrosion

An EPA waiver would need to be supported with comprehensive data on all of these issues, as well as health effects studies



CRC E20 Program Plans

Performance Committee

- The 2006 Hot Fuel Handling Program currently underway in Mesa, AZ will include E20 fuels
 - 12 test fuels: E0, E5, E10 and E20 blends at three volatility levels each
 - 25 test vehicles: 20 late model, 5 10-year old model

AVFL Committee

- Developing proposal for materials compatibility test program
 - Program expected to be costly; co-sponsors sought from motorcycle, small engine, marine industries



CRC E20 Program Plans, cont.

Emissions Committee

- Two additional programs under consideration:
 - Conduct additional E20 permeation work
 - ▶ Use remaining eight rigs from original E-65 study to better characterize in-use fleet
 - Conduct E20 exhaust emissions study
 - ▶ Add fuels to E-74b program (Effects of Vapor Pressure and Temperature Parameters on CO Exhaust Emissions) about to be commissioned
- Committee will decide soon which program to pursue first



E85 Studies Under Consideration

- Commercial E85 fuel quality survey
- Tailpipe emissions study of FFVs as a function of ethanol concentration (E0-E85)
- Permeation study of FFVs (E0-E??)
 - Current CRC study only looking at one vehicle
- Cold-start and driveaway performance study of FFVs as a function of "E85" composition
 - Current ASTM Fuel Ethanol spec permits gasoline fraction range of 15-25%
 - Spec developed for early FFV technology; is it still relevant?