

REFERENCES USED IN ETHANOL FATE AND TRANSPORT ANALYSIS

(UPDATED ON JULY 28, 1999)

EXPERIENCE IN REGIONS OUTSIDE OF CALIFORNIA

1. Grosjean E., D. Grosjean, R. Gunawardena, and R.A. Rasmussen (1998) "Ambient Concentrations of Ethanol and Methyl *tert*-Butyl Ether in Porto Alegre, Brazil, March 1996-April 1997," *Environmental Science & Technology*, **32**, 736-742.
2. Zielinska B., E. Fujita, J. Sagebiel, G. Harshfield, E. Uberna, T. Hayes, and F. Keene (1998) "Arizona hazardous Air Pollutants Monitoring Program," *Journal of the Air Waste Management Association*, **48**: 1038-1050.
3. Gaffney J.S., N.A. Marley, R.S. Martin, R.W. Dixon, L.G. Reyes, and C.J. Popp (1997) "Potential Air Quality Effects of Using Ethanol-Gasoline Fuel Blends: A Field Study in Albuquerque, New Mexico," *Environmental Science & Technology*, **31**, 3053-3061.
4. Lotfi C.F.P., M.M. Brentani, and G.M. Böhm (1990) "Assessment of the Mutagenic Potential of Ethanol Auto Engine Exhaust Gases by the Salmonella typhimurium Microsomal Mutagenesis Assay, using a Direct Exposure Method," *Environmental Research*, **52**, 225-230.
5. Massad E., P.H.N. Saldiva, C.D. Saldiva, M.P. R. Caldeira, L.M.N. Cardoso, A.M.S. De Moraes, D. F. Calheiros, R. Da Silva, and G.M. Böhm (1986) "Toxicity of Prolonged Exposure to Ethanol and Gasoline Autoengine Exhaust Gases," *Environmental Research*, **40**, 479-486.
6. Tanner R.L., A.H. Miguel, J.B. de Andrade, J.S. Gaffney, and G.E. Streit (1988) "Atmospheric Chemistry of Aldehydes: Enhanced peroxyacetyl Nitrate Formation from Ethanol-Fueled Vehicular Emissions," *Environmental Science & Technology*, **22**, 1026-1034.
7. Grosjean D., Miguel A.H., and T.M. Tavares (1990) "Urban Air Pollution in Brazil: Acetaldehyde and Other Carbonyls," *Atmospheric Environment*, **24B**: 101-106.
8. Anderson L.G., J.A. Lanning, E. Wilkes, P. Wolfe, and R.H. Jones (1997) "Effects of Using Oxygenated Fuels on Carbon Monoxide, Formaldehyde and Acetaldehyde Concentrations in Denver," Paper 97-RP139.05, Air & Waste Management Association 90th Annual Meeting & Exhibition, June 8-13, 1997, Toronto, Ontario, Canada.
9. Anderson L.G., J.A. Lanning, R. Barrell, J. Miyagishima, R.H. Jones, and P. Wolfe (1996) "Sources and Sinks of Formaldehyde and Acetaldehyde: An Analysis of Denver's Ambient Concentration Data," *Atmospheric Environment*, **30**: 2113-2123.
10. Anderson L.G., P. Wolfe, R.A. Barrell, and J.A. Lanning (1995) "The Effects of Oxygenated Fuels on the Atmospheric Concentrations of Carbon Monoxide and Aldehydes in Colorado," In *Alternative Fuels and the Environment*, Lewis Publishers, Boca Raton, Florida, 75-103.
11. Fujita, E. M. and B. E. Croes (1990) "Formaldehyde emissions in the South Coast Air Basin derived from ambient measurements," *Transactions: Tropospheric Ozone and the Environment* edited by Berglund, Lawson and McKee, pp. 717-739. International Specialty Conference, March 19-22, Los Angeles, CA.

SOURCES OF INFORMATION USED IN THE ARB ANALYSIS

12. Gertler A.W., J.C. Sagebiel, W.A. Dippel, J.A. Gillies, F. Gofa, and C.M. O'Connor (1997) "Comparison of 1995 and 1996 Emissions at the Los Angeles Sepulveda Tunnel Including the Impact of California phase 2 RFG," Final Report, Contract No. E-27, Coordinating Research Council, Inc. and South Coast Air Quality management District, October.
13. Kirchstetter T.W., B.C. Singer, R.A. Harley, G.R. Kendall, and M. Traverse (1999) "Impact of California Reformulated Gasoline on Motor Vehicle Emissions. 1. Mass Emission Rates," *Environmental Science & Technology*, **33**, 318-328.
14. Zielinska B., J. Shire, G. Harshfield, and R. Pasek (1997) "The Concentration of Oxygenated Compounds in the Los Angeles, CA, Area Following the Introduction of Reformulated Gasoline," Paper 97-RP139.06, Air & Waste Management Association 90th Annual Meeting & Exhibition, June 8-13, 1997, Toronto, Ontario, Canada.
15. Air Resources Board (1999) "California Ambient Air Quality Data 1980-1997," CD Number: PTSD-98-009-CD, Air Resources Board, December.
16. Air Resources Board (1993) "Guidance for Using Air Quality-related Indicators in Reporting Progress in Attaining the State Ambient Quality Standards," Resolution 93-49, Air Resources Board, July.

INFORMATION ON PEROXYACETYL NITRATE (PAN) AND PEROXYLPROPIONYL NITRATE (PPN)

17. Grosjean, E., D. Grosjean, M.P. Fraser, and G.R. Cass (1996) "Air Quality Model Evaluation Data for organics. 3. Peroxyacetyl Nitrate and Peroxypropionyl Nitrate in Los Angeles Air," *Environmental Science & Technology*, **30**, 2704-2714.
18. Williams E.L. and D. Grosjean (1989) "Peroxyacetyl Nitrate Measurements during SCAQS," Paper 89-139.6, Air & Waste Management Association 82nd Annual Meeting & Exhibition, June 25-30, 1989, Anaheim, CA.
19. Grosjean D. and E.L. Williams II (1992) "Photochemical Pollution at Two Southern California Smog Receptor Sites," *Journal of the Air Waste Management Association*, **42**: 805-809.
20. Grosjean D. (1990) "Formic Acid and Acetic Acid Measurements During the Southern California Air Quality Study," *Atmospheric Environment*, **24A**: 2699-2702.
21. Grosjean D. (1997) "Atmospheric Chemistry Alcohols," *Journal of Brazilian Chemical Society*, **8**, 433-442.
22. Drummond J., H. Schiff, D. Karecki, and G. Mackay (1989) "Measurements of NO₂, O₃, PAN, HNO₃ and H₂CO During the Southern California Air Quality Study," Paper 89-139.6, Air & Waste Management Association 82nd Annual Meeting & Exhibition, June 25-30, 1989, Anaheim, CA.
23. Williams E.L. II and D. Grosjean (1990) "Southern California Air Quality Study: Peroxyacetyl Nitrate," *Atmospheric Environment*, **24A**: 2369-2377.
24. Grosjean E., R.A. Rasmussen, and D. Grosjean (1998) "Ambient Levels of Gas phase Pollutants in Porto Alegre, Brazil," *Atmospheric Environment*, **32**: 3371-3379.
25. Grosjean E., D. Grosjean, R. Gunawardena, and R.A. Rasmussen (1998) "Ambient Concentrations of Ethanol and Methyl tert-Butyl Ether in Porto Alegre, Brazil, March 1996-April 1997," *Environmental Science & Technology*, **32**, 736-742.
26. Williams E.L. II, E. Grosjean, and D. Grosjean (1993) "Ambient Levels of the Peroxyacetyl Nitrates PAN, PPN and MPAN in Atlanta, Georgia," *Journal of the Air Waste Management Association*, **42**: 805-809.

27. Williams E.L. II and D. Grosjean (1991) "Peroxyacetyl Nitrate at a Southern California Mountain Forest Site," *Environmental Science & Technology*, **25**, 653-659.

AIR CHEMISTRY AND MODELING

28. Carter, W.P.L., D.M. Luo, and I.L. Malkina (1997a): "Environmental Chamber Studies for Development of an Updated! Photochemical Mechanism for VOC Reactivity Assessment," final report to California Air Resources Board Contract 92-345, Coordinating Research Council Project M-9, and National Renewable Energy Laboratory Contract ZF-2-12252-07, November 26.
29. Carter, W.P.L., D.M. Luo, I.L. Malkina, and J.A. Pierce (1993): "An Experimental and Modeling Study of the Photochemical Ozone Reactivity of Acetone," Final Report to Chemical Manufacturers Association Contract No. ET-ACE-CRC-2.0, December 10.
30. Carter, W.P.L. (1995): "Computer Modeling of Environmental Chamber Studies of Maximum Incremental Reactivities of Volatile Organic Compounds," *Atmospheric Environment*, **29**, 2513-2527.
31. South Coast Air Quality Management District (1996) "Air Quality Management Plan, Appendix V, Modeling and Attainment Demonstrations", SCAQMD, November.

ESTIMATES OF EMISSIONS FROM ALTERNATIVE FUELS

Refer to Emissions Profile Report