

Evaluation of Sorbent Sampling and Analysis Procedures for Acetone in Workplace Air: Variations of Concentration and Relative Humidity

JHY-CHARM SOO^{1*}, RYAN F. LEBOUF², WILLIAM P. CHISHOLM¹, JOHN NELSON¹,
JENNIFER ROBERTS³, MICHAEL L. KASHON¹, EUN GYUNG LEE¹, AND MARTIN HARPER^{4,5}

¹ *Health Effects Laboratory Division, National Institute for Occupational Safety and Health (NIOSH),
Centers for Disease Control and Prevention (CDC), Morgantown, WV, USA*

² *Respiratory Health Division, NIOSH, CDC, Morgantown, WV, USA*

³ *Division of Applied Research and Technology, NIOSH, CDC, Cincinnati, OH, USA.*

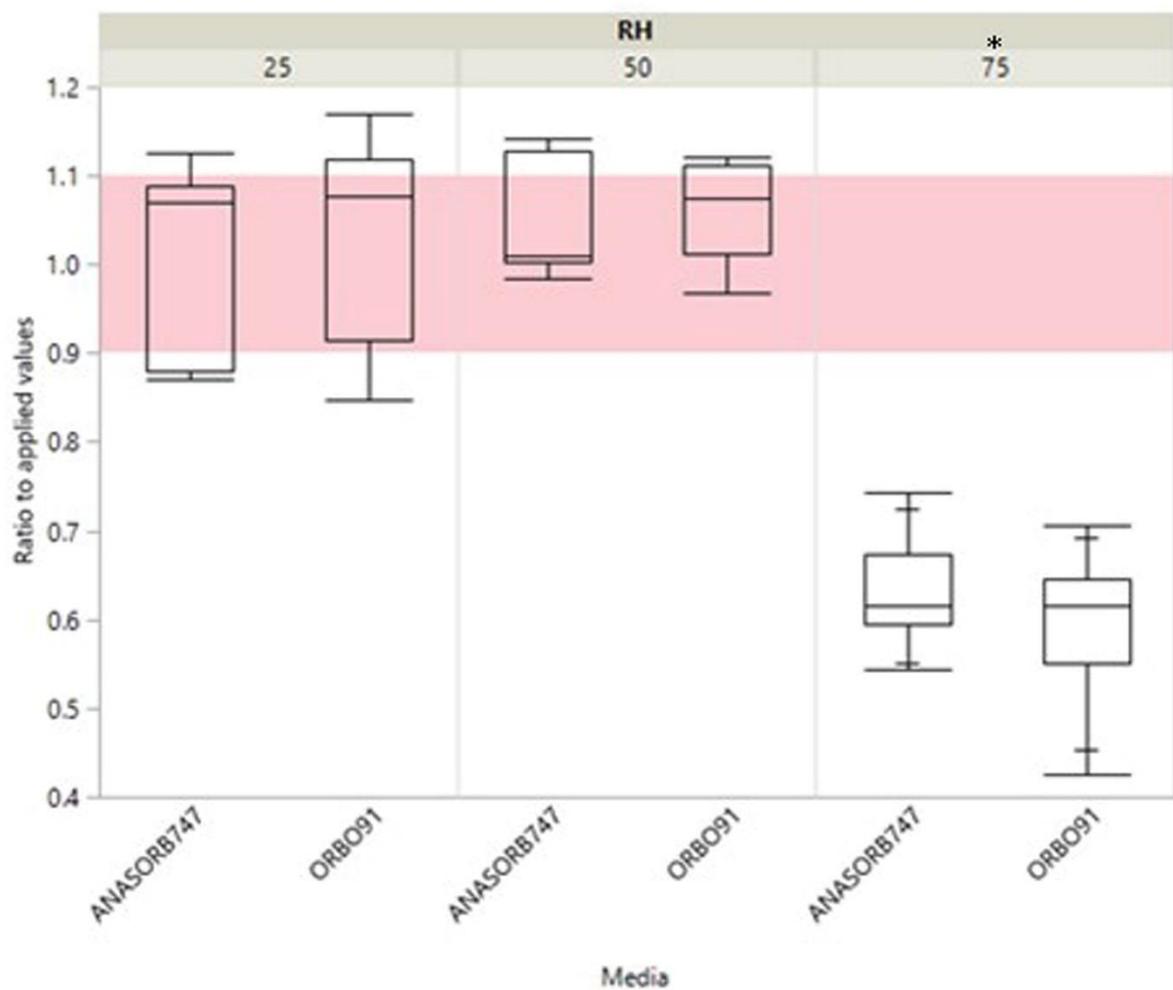
⁴ *Zefon International, Inc., 5350 SW 1st Lane, Ocala, FL, USA*

⁵ *Department of Environmental Engineering Sciences, University of Florida, Gainesville, FL, USA*

*Corresponding author: Jhy-Charm Soo, Ph.D.
Exposure Assessment Branch,
Health Effects Laboratory Division,
National Institute for Occupational Safety and Health
1095 Willowdale Road, MS 3030
Morgantown, West Virginia 26505
E-mail address: jssoo@cdc.gov
Phone: (304) 285-5859

Supplementary Table S1. Sample extraction procedures for each sorbent tube and method

Sorbent tube	With (W) or without (W/o) anhydrous magnesium sulfate powder (100 mg)	With (W) or without (W/o) 1% DMF	Method
Anasorb 747	W	W	Modified NMAM 1501
Anasorb 747	W/o	W/o	Modified NMAM 1501
ORBO-91 (Carbosieve SIII)	W	W	OSHA method 69
Silica gel	W/o	W/o	NMAM 2027



SUPPLEMENTARY FIGURE 1 Concentration comparison of acetone against various combinations of (a) sampling sorbent tubes: acetone along with other chemical interferences. Conditions: a ~10 ppm acetone concentration (=73 μ g loading of acetone) with 1-hour sample at 50 ml/min (3L). The applied value is calculated from its concentration in the standard and the dilution factor. * Statistically significant difference ($p < 0.05$).