



Technical Note

SKC 575-002 Passive Sampler Acetone Method Summary (750 ppm PEL) Validation To NIOSH Protocol*

PROCEDURE:	Adsorption on the Passive Sampler Cat. No. 575-002 containing 500 mg Anasorb® 747 with desorption (in situ) with 2 ml carbon disulfide and analysis by gas chromatography with flame ionization detection.					
SAMPLING RATE:	15.2 ml/min valid for PEL samples greater than four hours duration. 20.3 ml/min valid for STEL samples up to four hours.					
BIAS AND PRECISION:	The pooled % RSD** for all samplers was 3.1%. Since the uptake of the sampler has been calibrated against standard atmospheres, the method can be considered free from bias. Meets NIOSH accuracy criteria of $\leq 25\%$					
ANALYTICAL RECOVERY:	% Recovery (pre-humidified samples)	% RSD 3.4	% Recovery 94.1	%RSD (dry conditions) 8.6	Validation Range (mg) (8-hour TWA ppm) 1.4 to 28 75 to 1500	
STORAGE:	Samples, which were collected for eight hours at the PEL at 80% RH and stored for 14 days, met NIOSH criteria ($\pm 10\%$) at refrigerator temperatures (3 C) and freezer temperatures (-8 C) with no loss in recovery, but not at ambient temperatures (25 C). Refrigerated storage of samples is recommended.					
HUMIDITY EFFECTS:	Use 94.1% recovery for humidity below 50% RH and 90.2% above 50% RH.					
REVERSE DIFFUSION:	Not significant ($\leq 10\%$) when samplers exposed to 1500 ppm Acetone for four hours then four hours of clean air at 80% RH (25 C).					
LIMIT OF DETECTION:	0.1 PEL eight-hour TWA concentration was easily determined. No studies were made to determine the absolute detection limit.					
FACTOR EFFECTS:	A 16-run six-factor factorial test indicated no statistically significant effects of concentration, exposure time, relative humidity, face velocity, orientation, or the presence of 100 ppm toluene or any interactions of these factors at the 95% confidence level.					
VALIDATION DATE:	November 1992					

* Sampler passed all criteria of Full Validation to NIOSH Protocol at PEL of 750 ppm.

** Relative Standard Deviation

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