



Technical Note

SKC 575-001 and 575-001MC Passive Samplers Methylene Chloride Method Summary (25 ppm PEL) Validation To NIOSH Protocol*

PROCEDURE:	Adsorption on Passive Samplers Cat. Nos. 575-001 and 575-001MC containing 350 mg Lot 120 coconut-base charcoal with desorption (in situ) with 2 ml carbon disulfide and analysis by gas chromatography with flame ionization detection.		
SAMPLING RATE:	14.7 ml/min valid for PEL samples greater than four hours duration. 16.0 ml/min valid for STEL samples up to four hours.		
BIAS AND PRECISION:	The Pooled % RSD** for all samplers was 6.3%. 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	% RSD	Validation Range (μg) (8-hour TWA ppm)
	96.0	4.5	53 to 1270 2.5 to 50
STORAGE:	Samples, which were collected for 8 hours at the PEL at 80% RH (25 C), can be stored for 21 days at ambient (25 C), refrigerator (3 C), or freezer (-8 C) temperatures with no loss in recovery.		
HUMIDITY EFFECTS:	High humidity conditions (80% RH at 25 C) did not affect the uptake rate or recovery.		
REVERSE DIFFUSION:	Not significant (< 10%) when samplers exposed to 50 ppm Methylene Chloride for four hours then 3.5 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 interaction of these factors at the 95% confidence level.		
VALIDATION DATE:	May 1992		

* Sampler passed all criteria of Full Validation to NIOSH Protocol at PEL of 25 ppm.

**Relative Standard Deviation

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