

COAL TAR PITCH VOLATILES

various organic-soluble compounds

MW: various

CAS: 8007-45-2

RTECS:

METHOD: 5023, Issue 2

CLASS B

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OSHA : 0.2 mg/m³ (benzene-solubles)
NIOSH: 0.1 mg/m³/10 hr
(cyclohexane-solubles) [2,3]
ACGIH: 0.2 mg/m³ (benzene solubles) [4]

PROPERTIES: liquid; d N1.06 g/mL @ 38 °C;
60 to 85% distills @ ≤355 °C [5];
creosote distills @ 270 to 395 °C [2]

SYNONYMS: benzene-solubles, cyclohexane-solubles, coal tar pitch volatiles, creosote from coal tar.

SAMPLING	MEASUREMENT
<p>SAMPLER: FILTER (2-µm, 37-mm PTFE membrane)</p> <p>FLOW RATE: 1 to 4 L/min</p> <p>VOL-MIN: 500 L @ 0.2 mg/m³ -MAX: 2400 L</p> <p>SHIPMENT: routine</p> <p>SAMPLE STABILITY: unknown</p> <p>FIELD BLANKS: 10% (≥2) of samplers</p>	<p>TECHNIQUE: GRAVIMETRIC</p> <p>ANALYTE: organic-solubles (includes anthracene, benzanthracene, benzo(a)pyrene, carbazole, chrysene, phenanthrene, pyrene and others [1,2,3,4])</p> <p>EXTRACTION: benzene, cyclohexane or other appropriate solvent; ultrasonic 20 min</p> <p>CALIBRATION: National Bureau of Standards Class M weights</p> <p>RANGE: 0.1 to 2 mg per sample</p> <p>ESTIMATED LOD: 0.05 mg per sample [6]</p> <p>PRECISION (s_r): 0.02 at 1.35 mg [6]; 0.23 for blanks [6]</p>
<p>ACCURACY</p> <p>RANGE STUDIED: not studied</p> <p>ACCURACY:</p> <p>BIAS: unknown</p> <p>OVERALL PRECISION (s_r): not determined</p>	

APPLICABILITY: The working range is 0.1 to 2 mg/m³ for a 1000-L air sample. The method is useful for air monitoring of coke oven emissions, petroleum combustion products such as diesel emissions, and petroleum asphalt fumes. The method may be applied to bulk samples. The method is non-specific and measures all substances in the sample which are soluble in the solvent selected and which can be desorbed from particulate matter present on the filter.

INTERFERENCES: Changes in temperature or humidity during pre- and post-collection weighing affect accuracy. Losses may occur due to volatilization of collected aerosol during or after sampling.

OTHER METHODS: This method modifies and combines P&CAM 217 [7] and the criteria document method [2].

REAGENTS:

- 1.
- 2.
- 3.
- 4.
- 5.
- 6.

EQUIPMENT:

- 1.
- 2.
- 3.
- 4.
- 5.
- 6.
- 7.
- 8.
- 9.
- 10.

* See SPECIAL PRECAUTIONS.

SPECIAL PRECAUTIONS:

SAMPLING:

1. Calibrate each personal sampling pump with a representative sampler in line.
- 2.
- 3.
- 4.
- 5.
- 6.

SAMPLE PREPARATION:

- 7.
- 8.
- 9.

CALIBRATION AND QUALITY CONTROL:

- 10.

- 11.
- 12.
- 13.

MEASUREMENT:

- 14.
- 15.
- 16.

CALCULATIONS:

- 17.
- 18.

EVALUATION OF METHOD:

REFERENCES:

- [1]

METHOD WRITTEN BY: