

2,4,5-T
See 2,4-D (Method 5001) for Procedure

$C_8H_5Cl_3O_3$

MW: 255.49

CAS: 93-76-5

RTECS: AJ8400000

METHOD: 5001, Issue 1

EVALUATION: FULL

Issue 1: 15 February 1984

Issue 2: 15 August 1994

OSHA : 10 mg/m³ (2,4-D or 2,4,5-T)
NIOSH: 10 mg/m³; Group I Pesticide
ACGIH: 10 mg/m³

PROPERTIES: solid; MP 153 °C (2,4,5-T); VP not significant

SYNONYMS: 2,4,5-T: (2,4,5-trichlorophenoxy)acetic acid; Esterone 245; Trioxone; Weedone

SAMPLING		MEASUREMENT	
SAMPLER:	FILTER (glass fiber, binderless)	TECHNIQUE:	HPLC, UV DETECTION
FLOW RATE:	1 to 3 L/min	ANALYTE:	2,4,5-T anion
VOL-MIN:	15 L @ 10 mg/m ³	DESORPTION:	15 mL CH ₃ OH; stand 30 min
-MAX:	200 L	INJECTION VOLUME:	50 µL
SHIPMENT:	routine	ELUENT:	0.003 M NaClO ₄ -0.001 M Na ₂ B ₄ O ₇
SAMPLE STABILITY:	at least 1 week @ 25 °C	FLOW RATE:	1.7 mL/min
BLANKS:	2 to 10 field blanks per set	DETECTOR:	UV @ 289 nm
ACCURACY		COLUMN:	stainless steel, 50 cm x 2-mm ID, packed with Zipax SAX (DuPont) ambient temperature; 6900 kPa (1000 psi)
RANGE STUDIED:	5 to 20 mg/m ³ [1,2] (100-L samples)	CALIBRATION:	solutions of analyte in method
BIAS:	4.78%	RANGE:	0.15 to 2 mg per filter
OVERALL PRECISION ($\hat{S}_{r,r}$):	0.053 (2,4,5-T) [2]	ESTIMATED LOD:	0.030 mg per filter [2]
ACCURACY:	± 14.2%	PRECISION ($\hat{S}_{r,r}$):	0.025 [2]

APPLICABILITY: This method determines 2,4-D, 2,4,5-T, and their salts, but not their esters. The working range is 1.5 to 20 mg/m³ of either compound for a 100-L air sample.

INTERFERENCES: High concentrations of esters of either compound do not interfere but require the use of a pre-column to prevent degradation of the HPLC column.

OTHER METHODS: This method combines and replaces Methods S279 [3] and S303 [3] which are the same except for eluent composition and UV detector wavelength.