



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

Jack Cochran
LECO Corporation
815 Pilot Road, Suite C
Las Vegas, NV 89119

FEB - 9 2005

OFFICE OF
WATER

Dear Mr. Cochran:

The Statistics and Analytical Support Branch (SASB) and the Office of Ground Water and Drinking Water's Technical Support Center (OGWDW/TSC) have completed a technical review of your request for acceptance of the alternate ion abundance criteria for bis(perfluorophenyl)phenylphosphine (decafluorotriphenylphosphine, DFTPP) listed in the table below when tuning GC/MS instrumentation prior to performing initial calibration as specified in EPA methods approved for drinking water compliance monitoring under National Primary Drinking Water Regulations (NPDWR) and wastewater compliance monitoring under the National Pollutant Discharge Elimination System (NPDES).

Mass (m/z)	Relative Abundance Criteria	Purpose of Criteria
51	10-85% of the base peak	Low-mass sensitivity
68	<2% of m/z 69	Low-mass resolution
70	<2% of m/z 69	Low-mass resolution
127	10-80% of base peak	Low- to mid-mass resolution
197	<2% of m/z 198	Mid-mass resolution
198	Base peak or >50% of m/z 442	Mid-mass resolution and sensitivity
199	5-9% of m/z 198	Mid-mass resolution and isotope ratio
275	10-60% of base peak	Mid- to high-mass sensitivity
365	>0.5 of m/z 198	Baseline threshold
441	<150% of m/z 443	High-mass resolution
442	Base peak or >30% of m/z 198	High-mass resolution and sensitivity
443	15-24% of m/z 442	High-mass resolution and isotope ratio

We are pleased to inform you that in the judgement of our technical staff, these alternate tuning criteria are acceptable and may be used in place of the DFTPP tuning criteria specified in EPA Methods 525.2, 625, 1625, and 1653. The alternate test procedure (ATP) case numbers that were assigned to this application are D04-0002 and N04-0002. Please refer to these case numbers when submitting any future inquiries regarding this request.

With regard to the relative abundance criteria for the mass (m/z) of 441, it should be noted that mass 441 is an artifact. Donnelly, *et al.* 1988 [J. Assoc. Off. Anal. Chem. 71(2)] indicating that 441 cannot be a good resolution check because it has no natural abundance. It is an (M-H)⁺ ion and its formation/intensity is subject to the environment in the source of the mass spectrometer. The LECO source is more aggressive than most and results in the formation of a greater amount of 441. The LECO can meet the 443 specification, which is a fair test of resolution because it is based on C13 abundance. The change made in the DFTPP criteria will permit the use of this instrumentation while not adversely impacting the quality of measurements made using LECO or other types of mass spectrometer.

With regard to the DFTPP tuning criteria listed in EPA Method 8270, that method falls under the purview of EPA's Office of Solid Waste (OSW). As noted on the web site at:

<http://www.epa.gov/epaoswer/hazwaste/test/sw846.htm>

"SW-846 functions primarily as a guidance document setting forth acceptable, although not required, methods for the regulated and regulatory communities to use in responding to RCRA-related sampling and analysis requirements."

This differs from the approach taken by the Office of Water in promulgating methods for use in NPDWR and NPDES compliance monitoring, in which the DFTPP tuning specifications are formal requirements in EPA Methods such as 525.2, 625, 1625, and 1653.

Although the Office of Water cannot determine the acceptability of your suggested tuning criteria on behalf of OSW, we note that Section 7.3.1.2 of Method 8270D (the most recent version) states:

"Use the DFTPP mass intensity criteria in Table 3 as tuning acceptance criteria. Alternatively, other documented tuning criteria may be used (e.g. CLP, Method 525, or manufacturer's instructions), provided that method performance is not adversely affected."

Therefore, while we encourage you to consult with OSW directly, we believe that the existing language in Method 8270D already permits the use of your "instructions," regardless of our acceptance of the criteria in place of the existing requirements in Methods 525.2, 625, 1625, and 1653.

We appreciate LECO Separation Science's continued interest in the development of environmental compliance monitoring methods. If you have any questions regarding these determinations or review of these ATP applications, please contact William Telliard of SASB (202/566-1061) or Herb Brass of OGWDW/TSC (513/569-7936) at your convenience.

Sincerely,



William A. Telliard
Director of Analytical Methods
Engineering and Analysis Division (4303 T)



Herb Brass, Ph.D.
Technical Support Center (MS-140)
Office of Ground Water and Drinking Water

cc:

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