

Final Update V

The RCRA Organic and Inorganic Work Groups have been meeting regularly since November 2010 to update the draft new and revised methods that were posted on the RCRA Methods website since 2002 to reflect the most current and scientifically sound approach for environmental measurement.

The final methods to be formally included, by the end of 2011, as the Update V to the 3rd Edition of SW-846 are:

Method Number	Method Title
3200	Mercury Species Fractionation and Quantification by Microwave-assisted Extraction, Selective Solvent Extraction and/or Solid Phase Extraction
3572	Extraction of Wipe Samples for Chemical Agents
4025	Screening for Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans (PCDD/Fs) by Immunoassay
4430	Screening For Polychlorinated Dibenzo-p-Dioxins And Furans (PCDD/Fs) By Aryl Hydrocarbon-Receptor PCR Assay
4435	Method For Toxic Equivalents (TEQS) Determinations For Dioxin-Like Chemical Activity with the CALUX® Bioassay
5021	Volatile Organic Compounds in Various Sample Matrices Using Equilibrium Headspace Analysis
6010	Inductively Coupled Plasma-Atomic Emission Spectrometry
6020	Inductively Coupled Plasma-Mass Spectrometry
6800	Elemental and Speciated Isotope Dilution Mass Spectrometry
8000	Determinative Chromatographic Separations
9013	Cyanide Extraction Procedure for Solids and Oils
9014	Titrimetric and Manual Spectrophotometric Determinative Methods for Cyanide
9015	Metal Cyanide Complexes by Anion Exchange Chromatography and UV Detection
9016	Free Cyanide in Water, Soils and Solid Wastes by Microdiffusion

Three Important New and Revised Features

Included in Sections 9 (Quality Control) and 11 (Procedure) in Update V Methods:

IDP (Initial Demonstration of Proficiency) - Revised
LLOQ (Lower Level of Quantitation) - New
RSE (Relative Standard Error) - New

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News Flash!

New Method 8276: Toxaphene and Toxaphene Congeners

Toxaphene has been historically analyzed with other organochloride pesticides by Method 8081, using gas chromatography with fused-silica, open tubular, capillary columns and electron capture detectors (ECD) or electrolytic conductivity detectors (ELCD). Several limitations were found: unable to measure congeners or breakdown products; interference from other organochloride pesticides; and the method not sufficiently sensitive.

A new method was developed for better detection and quantification of technical toxaphene and 8 environmentally significant toxaphene congeners in groundwater, soil, and sediment using gas chromatography negative ion chemical ionization mass spectrometry (GC-NICI/MS). The new Method 8276 was posted online in March 2010.
(<http://www.epa.gov/osw/hazard/testmethods/pdfs/8276.pdf>)

A multi-lab validation study for fish will start in September 2011 and Method 8276 will be expanded to include fish in Spring of 2012.



Policy Statements for SW-846

- SW-846 methods are available online and are considered guidance for RCRA compliance. Their use is not required to comply with RCRA, except that method-defined parameters (MDPs, e.g., Method 1311 for TCLP) need to be strictly followed.
<http://www.epa.gov/epawaste/hazard/testmethods/index.htm>.
- Since the publication of the Methods Innovation Rule (MIR), EPA no longer uses a formal rulemaking process for publication of method updates to SW-846. Instead, a Notice of Data Availability (NODA) is published in the Federal Register announcing new and updated methods and soliciting comments.
- Using the performance approach, SW-846 methods, or any scientifically appropriate method, can be used for required regulatory monitoring. Alternative methods should be selected based on measurement objectives, rather than measurement technologies. The user must demonstrate that the method generates data that are appropriate for the intended use. PBMS is flexible for analyzing complex wastes and allows for the use of cost-effective approaches.

Method Naming Convention

- Method number** - designates a unique analytical technology. If a new or significant change in technology is introduced, a new method number will be assigned.
- Method letter** - follows the method number and designates that a significant change has been made to the precision and/or bias of the method. If only minor changes are made to a method, the revision date will be changed but not the method letter.
- Revision date** - is included in all published methods.

EPA may publish new methods, revise existing methods, or withdraw methods from SW-846 whenever it deems appropriate. Terms associated with a method's status are denied as follows:

Method Development Status

- Final Method** – a method formally incorporated in the SW-846 compendium following public review and comment solicited in a NODA
- Draft Method** – a method that has undergone technical review by EPA and work group approval, but has not been adopted into the SW-846 compendium
- Revised Method** – a method that has been updated to reflect changes that may be editorial in nature and do not impact data or performance
- Superseded** (or deleted) **Method** – a method that is no longer included in the SW-846 compendium.
- Revised** versions of **superseded methods** are preferred, but superseded methods are not precluded from use.
- Withdrawn Method** – a method that EPA strongly recommends should not be used (e.g., cyanide and sulfide reactivity guidance withdrawn June 14, 2005) because EPA determined that such methods are technically inadequate and/or no longer meet the technical objectives for which the methods were published.

SW-846 is available online at: <http://www.epa.gov/epawaste/hazard/testmethods/index.htm>

*EPA strongly recommends using the latest version of SW-846 methods, but does not require it, except for MDPs. EPA also recommends seeking approval from the regulatory agency for the selected method or method modification.

Leaching Environmental Assessment Framework (LEAF)

LEAF represents a shift in leaching techniques from current single-point pH tests, such as TCLP and SPLP, to a suite of leaching tests that may be interpreted individually or integrated to provide characteristic leaching behavior of a solid material over a range of potential release scenarios. It is a collaboration between: Vanderbilt University, Energy Research Centre of the Netherlands, DHI (Denmark), EPA Office of Research and Development and EPA Office of Resource Conservation and Recovery.

EPA is considering the following four leaching tests for inclusion into SW-846:

Method 1313: Liquid-Solid Partitioning as a Function of Extract pH for Constituents in Solid Materials using a Parallel Batch Extraction Procedure

Method 1314: Liquid-Solid Partitioning as a Function of Liquid-Solid Ratio for Constituents in Solid Materials using an Up-Flow Percolation Column Procedure

Method 1315: Mass Transfer Rates of Constituents in Monolithic or Compacted Granular Materials using a Semi-Dynamic Tank Leaching Procedure

Method 1316: Liquid-Solid Partitioning as a Function of Liquid-Solid Ratio for Constituents in Solid Materials using a Parallel Batch Extraction Procedure

Future work includes:

- Inter-laboratory validation of the LEAF test methods
- Comparison of LEAF testing results with field leaching observations
- Applying the LEAF testing approach to coal combustion residues for evaluating use and disposal options

For more information, view the EPA's report Background information for the Leaching environmental Assessment Framework (LEAF) test methods
<http://www.epa.gov/nrmrl/pubs/600r10170/600r10170.pdf>

MICE Service- NEW Contact Information

The Methods Information Communication Exchange (MICE) Service provides a valuable service to the public by answering questions and taking comments regarding "Test Methods for Evaluating Solid Waste: Physical/Chemical Methods (SW-846)." The MICE Service is maintained by the EPA Office of Resource Conservation and Recovery and operated by TechLaw, Inc., utilizing chemists, sampling experts and environmental scientists knowledgeable in SW-846 procedures.

Here's how to reach the MICE Service:

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