

<u>SUBJECT</u>		<u>DATE</u>
1253. Used Oil Filter Regulation – The Feds vs. Washington State	ENCORE	NOV 16, 2017
1254. PCB Radioactive Wastes and Exception Reporting	ENCORE	NOV 21, 2017
1255. Satellite Accumulation Requirements and Container Inspections	ENCORE	NOV 30, 2017
1256. Disposing of PCB Ballasts with PCB Potting Material	ENCORE	DEC 7, 2017
1257. Fluorescent Light Ballasts and PCB Annual Reporting		DEC 14, 2017
1258. 'Twas the Night Before Christmas – The Twenty-Fifth Annual Edition		DEC 21, 2017
1259. The Purpose of Keeping Containers Closed Except When Adding or Removing Wastes	ENCORE	DEC 28, 2017
1260. Satellite Accumulation and Product Vessel Cleanouts	ENCORE	JAN 4, 2018
1261. Conservative Declaration that Material is a Hazardous Waste	ENCORE	JAN 11, 2018
1262. Defining Criteria for Household Waste Exclusion	ENCORE	JAN 18, 2018
1263. The Household Waste Exclusion and Renovation Debris	ENCORE	JAN 25, 2018
1264. The Household Waste Exclusion and Renovation Debris – Part II	ENCORE	FEB 1, 2018
1265. The Mixtures Rule – Washington State vs. The Feds	ENCORE	FEB 8, 2018
1266. Spent Lead-Acid Batteries and Secondary Containment	ENCORE	FEB 15, 2018
1267. Spent Lead-Acid Batteries and Accumulation Time Limits	ENCORE	FEB 23, 2018
1268. CERCLA Hazardous Substances – A Brief Definition	ENCORE	MAR 1, 2018
1269. Radioactively Contaminated Lead-Acid Batteries and Hazardous Debris	ENCORE	MAR 8, 2018
1270. RCRA Treatment and the Two-Part Definition	ENCORE	MAR 15, 2018
1271. Who Wants to be a Generator!!!	ENCORE	MAR 22, 2018
1272. Who Wants to be a Generator Part 2!!!	ENCORE	MAR 29, 2018
1273. “No Smoking” Signs and Tobacco-Free Facilities		APR 5, 2018
1274. Aqueous Solutions and the Characteristic of Corrosivity	ENCORE	APR 12, 2018
1275. Aqueous Solutions and the Characteristic of Ignitability	ENCORE	APR 19, 2018

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TWO MINUTE TRAINING

TO: CH2M HILL PLATEAU REMEDIATION COMPANY

FROM: PAUL W. MARTIN, RCRA Subject Matter Expert
CHPRC Environmental Protection, Hanford, WA

SUBJECT: AQUEOUS SOLUTIONS AND THE CHARACTERISTIC OF IGNITABILITY

DATE: APRIL 19, 2018

<u>CHPRC Projects</u>	<u>CH PRC - Env. Protection</u>	<u>MSA</u>	<u>Hanford Laboratories</u>	<u>Other Hanford Contractors</u>	<u>Other Hanford Contractors</u>
Richard Austin Tania Bates Rene Catlow Richard Clinton Larry Cole John Dent Lorna Dittmer Brian Dixon Eric Erpenbeck Stuart Hildreth Mike Jennings Stephanie Johansen Melvin Lakes Richard Lipinski Jim McGrogan Stuart Mortensen Dave Richards Phil Sheely Connie Simiele Jennie Stults Jeff Westcott Jeff Widney	Bob Bullock Bill Cox Laura Cusack Sasa Kosjerina Jim Leary Anthony Nagel Robert Nielson Linda Petersen Fred Ruck Ray Swenson Wayne Toebe Daniel Turlington Dave Watson	Brett Barnes Jerry Cammann Jeff Ehlis Garin Erickson Panfilo Gonzalez Jr. Dashia Huff Mark Kamberg Jon McKibben Saul Martinez Jon Perry Christina Robison Lana Strickling Lou Upton	(TBD) <u>DOE RL, ORP, WIPP</u> Mary Beth Burandt Duane Carter Cliff Clark Tony McKarns Ellen Mattlin Scott Stubblebine	Bill Bachmann Dean Baker Scott Baker Lucinda Borneman Paul Crane Tina Crane Ron Del Mar John Dorian Mark Ellefson Tom Gilmore Rob Gregory Gene Grohs James Hamilton Andy Hobbs Ryan Johnson Megan Lerchen Charles (Mike) Lowery Michael Madison Terri Mars Cary Martin Grant McCalmant Steve Metzger Tony Miskho Matt Mills Tom Moon Chuck Mulkey Kirk Peterson	Jean Quigley Dan Saueressig Merrie Schilperoort Joelle Moss Glen Triner Greg Varljen Julie Waddoups Jay Warwick Ted Wooley

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TWO MINUTE TRAINING

SUBJECT: Aqueous Solutions and the Characteristic of Ignitability

Q: Concerning the characteristic of ignitability at [WAC 173-303-090\(5\)\(a\)\(i\)](#), [[40 CFR 261.21\(a\)\(1\)](#)], the regulation basically states that one of the criteria for a material being an ignitable hazardous waste is that the material is a liquid and has a flash point less than 140°F. However, an exception is made for aqueous solutions containing <24 percent alcohol by volume.

The term aqueous is not defined or quantified as to a percentage as was the alcohol. Does this mean that if a solution contains any amount of water and less than 24 percent alcohol, then it is not regulated as an ignitable hazardous waste? Also, what if the solution is a mixture of water, alcohols, and ignitable solvents, does the exclusion still apply?

A: The term "aqueous" is defined by Webster's Dictionary as being made from, with, or by water. Yet like the regulation, no percentages are given to determine when an ignitable material becomes an aqueous solution. However, in a USEPA memo dated February 26, 1985 ([RO 11060](#)), EPA stated:

"With respect to what constitutes an 'aqueous solution,' such a solution is one in which water is the primary component. This means that water constitutes at least 50% by weight of the sample".

Therefore, if an ignitable waste is at least 50% water and contains less than 24% alcohol, it is not regulated as a D001 ignitable waste. This is true even if the flash point is below 140°F. EPA does clarify that this exclusion was intended to apply only to aqueous wastes which are ignitable only because they contain alcohols, i.e., alcoholic beverages; however, EPA used the term "alcohol" instead of "ethanol" so any aqueous waste with any alcohol waste could be eligible for the exemption. If the material was a mixture of alcohols and solvents and exhibited a flash point below 140°F, the characteristic of ignitability would in those cases apply.

SUMMARY:

- An aqueous solution containing less than 24% alcohol is excluded as a D001 ignitable waste.
- An aqueous solution is defined as containing at least 50% water per the EPA guidance memo.
- A mixture of aqueous waste, alcohols and other ignitable wastes, with a flash point <140°F is not eligible for the exclusion and are defined as D001 ignitable wastes.

The February 26, 1985, EPA memo and an excerpt from WAC 173-303-090(5) are attached. If you have any questions, please contact me at [Paul W Martin@rl.gov](mailto:Paul_W_Martin@rl.gov) or at (509) 376-6620.

FROM: Paul W. Martin

DATE: 4/19/18

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TWO MINUTE TRAINING – ATTACHMENT

SUBJECT: Aqueous Solutions and the Characteristic of Ignitability

WAC 173-303-090 Dangerous waste characteristics.

(5) Characteristic of ignitability.

(a) A solid waste exhibits the characteristic of ignitability if a representative sample of the waste has any of the following properties:

(i) It is a liquid, other than an aqueous solution containing less than 24 percent alcohol by volume, and has a flash point less than 60 degrees C (140 degrees F), as determined by a Pensky-Martens Closed Cup Tester, using the test method specified in ASTM Standard D93-06, or a Setaflash Closed Cup Tester, using the test method specified in ASTM Standard D3278-96 (2004)e1 as incorporated by reference at WAC 173-303-110 (3)(h)(v) and (vi);

(ii) It is not a liquid and is capable, under standard temperature and pressure, of causing fire through friction, absorption of moisture or spontaneous chemical changes and, when ignited, burns so vigorously and persistently that it creates a hazard;

(iii) It is an ignitable compressed gas.

(A) The term "compressed gas" applies to any material or mixture having in the container an absolute pressure exceeding 40 p.s.i. at 70 degrees F or, regardless of the pressure at 70 degrees F, having an absolute pressure exceeding 104 p.s.i. at 130 degrees F; or any liquid flammable material having a vapor pressure exceeding 40 p.s.i. absolute at 100 degrees F as determined by ASTM Test D-323.

(B) A compressed gas must be characterized as ignitable if any one of the following occurs:

(I) Either a mixture of 13 percent or less (by volume) with air forms a flammable mixture or the flammable range with air is wider than 12 percent regardless of the lower limit. These limits must be determined at atmospheric temperature and pressure. The method of sampling and test procedure must be acceptable to the Bureau of Explosives and approved by the director, Pipeline and Hazardous Materials Technology, U.S. Department of Transportation (see Note 2).

(II)

TWO MINUTE TRAINING – ATTACHMENT

SUBJECT: Aqueous Solutions and the Characteristic of Ignitability

9443.1985(02)

RO 11060

FEB 26 1985

Mr. Kevin J. Walter
Bureau of Technical Services
Division of Environmental Enforcement Department of Environmental Conservation State of New York
50 Wolf Road
Albany, New York 12233-0001

Dear Mr. Walter:

I am writing in response to your recent letter requesting clarification of the definition of the characteristics of ignitability for hazardous wastes.

Your understanding that the words "it is a liquid, other than an aqueous solution containing less than 24 percent alcohol by volume" were intended to exclude alcoholic beverages, such as wine, and non-liquid materials is correct. However, while the Agency's intent was that this exemption apply to potable beverages only, because the term "alcohol" was used instead of "ethanol," all aqueous wastes which are ignitable only because they contain alcohols (here using the term alcohol to mean any chemical containing the hydroxyl [-OH] functional group) are excluded from regulation.

While the Agency completes the process of officially adopting a method for identifying "free liquids," for use in the land disposal regulations, it is our current practice to employ Method 9095 (see "Test Methods for Evaluating Solid Waste, SW-946") for such purposes. Any material passing through the paint filter is deemed to be a liquid.

With respect to what constitutes an "aqueous solution," such a solution is one in which water is the primary component. This means that water constitutes at least 50 percent by weight of the sample. Although, we have not officially approved any test methods for determining a waste's water content, any competent laboratory should be able to make such a determination using standard techniques (e.g., Karl Fisher titration, GC).

We share your concern over the ambiguities in the current ignitability definition and have a program underway to correct the characteristic's shortcomings. Specifically, changes are under development to replace the alcoholic solution exclusion with a generic exclusion for those wastes which, while possessing a flash point below 60°C, neither continue to burn nor, if they do burn, release enough energy to cause a major fire. In addition, steps are being taken to expand the ignitability characteristic to include wastes which are physical solids. Both of these changes will involve proposal and promulgation of specific definitional test methods and thresholds.

FROM: Paul W. Martin

DATE: 4/19/18

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TWO MINUTE TRAINING – ATTACHMENT

SUBJECT: Aqueous Solutions and the Characteristic of Ignitability

- 2 -

I hope this information clears up any questions you may have about the ignitability characteristic. If you have any further questions concerning any of the hazardous waste characteristics, please contact David Friedman, of my staff, at 202-382-4770.

Sincerely yours,

Original Document signed

John H. Skinner
Director
Office of Solid Waste

bcc: G.A. Lucero WH-527
A. Corson
David Friedman
Regional Solid Waste Branch Chiefs
Hotline

FROM: Paul W. Martin

DATE: 4/19/18

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