

<u>SUBJECT</u>		<u>DATE</u>
1320. Treated Hazardous Waste Used as Dust Suppressant		FEB 28, 2019
1321. Decharacterized RCRA Waste - Manifesting and LDR Reporting	ENCORE	MAR 7, 2019
1322. Decharacterized Hazardous Waste Listed Solely for Non-Toxic Characteristics	ENCORE	MAR 14, 2019
1323. Decharacterized Wastes, ≤90-Day Accumulation Time Limits and LDR Storage Prohibition	ENCORE	MAR 21, 2019
1324. Decharacterized Wastes and the LDR Dilution Prohibition	ENCORE	MAR 28, 2019
1325. PCB Decontamination Standard with No Decontamination Performed	ENCORE	APR 4, 2019
1326. PCB Manifest Relief a.k.a., When is a PCB Manifest Not Required?	ENCORE	APR 11, 2019
1327. PCB Manifest Relief a.k.a., When is a PCB Manifest Not Required? – The Sequel	ENCORE	APR 18, 2019
1328. PCB Concentrations and Micrograms per Centimeters Squared (µg/cm ²)	ENCORE	APR 25, 2019
1329. Operating Record vs. Operating Log	ENCORE	MAY 2, 2019
1330. Operating Records Not Referenced in the “Operating Record” Regulations	ENCORE	MAY 9, 2019
1331. Washington State Used Oil and Mixtures with Other Materials	ENCORE	MAY 16, 2019
1332. Used Oil Filter Regulation – The Feds vs. Washington State	ENCORE	MAY 23, 2019
1333. Printed Circuit Board Recycling – Shredded vs. Whole	ENCORE	MAY 30, 2019
1334. Universal Waste Alkaline Batteries and Self-Transportation	ENCORE	JUN 6, 2019
1335. Universal Waste Lithium Batteries and Self-Transportation	ENCORE	JUN 13, 2019
1336. RCRA Hazard Labeling – A Random Scenario		JUN 20, 2019
1337. Regulatory Status of Chromated, Copper, Arsenate, (CCA) Wood as Wood Mulch	ENCORE	JUN 27, 2019
1338. Unused Paraformaldehyde - U Listed Hazardous Waste or Not?	ENCORE	JUL 3, 2019
1339. The Hazardous Waste Characteristic of Reactivity (D003)	ENCORE	JUL 11, 2019

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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: THE HAZARDOUS WASTE CHARACTERISTIC OF REACTIVITY (D003)

DATE: JULY 11, 2019

<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 Laura Cusack John Dent Lorna Dittmer Eric Erpenbeck Stuart Hildreth Mike Jennings Stephanie Johansen Sasa Kosjerina Melvin Lakes Richard Lipinski Stuart Mortensen Dave Richards Phil Sheely Connie Simiele Jeff Westcott	Jeff Bramson Bob Bullock Frank Carleo Bill Cox Noah Cruz Jeanne Elkins Jonathan Fullmer Ted Hopkins Tad Karschnia Barry Lawrence Jim Leary Diane Leist Mitch Marrott Stewart McMahan Brian Mitcheltree Anthony Nagel Linda Petersen Fred Ruck Sean Sexton Dave Shea Ray Swenson Kat Thompson Wayne Toebe Eric Trotta Daniel Turlington Dave Watson	Brett Barnes Michael Carlson Mike Demiter Kip George Jerry Cammann Jeff Ehlis Garin Erickson Panfilo Gonzalez Jr. Dashia Huff Mark Kamberg Jon McKibben Saul Martinez Matt Mills Carly Nelson Michelle Oates Eric Pennala Jon Perry Christina Robison Christian Seavoy David Shaw John Skoglie Lana Strickling Greg Sullivan	(TBD) <u>DOE RL, ORP, WIPP</u> Mary Beth Burandt Duane Carter Al Farabee Tony McKarns	Bill Bachmann Dean Baker Scott Baker Lucinda Borneman Paul Crane Tina Crane Ron Del Mar John Dorian Mark Ellefson Darrin Faulk Tom Gilmore Rob Gregory James Hamilton Andy Hobbs Ryan Johnson Megan Lerchen Charles (Mike) Lowery Michael Madison Terri Mars Cary Martin Grant McCalmant Steve Metzger Tony Miskho 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: The Hazardous Waste Characteristic of Reactivity (D003)

Q: A customer generates two separate liquid wastestreams. One wastestream is a potential ignitable characteristic waste and the other is a potential reactive characteristic waste. The customer notes that the ignitable characteristic regulations at [WAC 173-303-090\(5\)](#) [[40 CFR 261.21](#)] include specific testing methods for determining a flash point (a Pensky-Martens Closed Cup Tester using ASTM Standard D-93-79 or D-93-80 or a Setaflash Closed Cup Tester using ASTM Standard D-3278-78). However, the reactive characteristic regulations at [WAC 173-303-090\(7\)](#) [[40 CFR 261.23](#)] include only narrative descriptions and do not include specific testing methods for determining reactivity. Why did EPA promulgate such a subjective narrative regulation for determining if a waste exhibits the characteristic of reactivity?

A: Per the [May 19, 1980, Federal Register](#) on page 33110, it states:

"EPA received a large number of comments which argued that the prose definition of reactivity employed by EPA is too indefinite and vague and give generators inadequate guidance in assisting the reactivity of their waste. These comments advocated replacing the prose definition with a numerically quantified definition accompanied by appropriate testing protocols.

EPA has attempted where possible to define hazardous wastes characteristics in terms of specific numerically quantified properties measurable by standardized testing protocols. The available test methods for reactivity, however, suffer from a number of generic and individual shortcomings, which make a numerically quantified definition with accompanying test protocols inappropriate. First, these tests are too restrictive in scope and confine themselves to measuring how one specific aspect of reactivity correlates with a specific initiating condition or stress. No test is sufficiently general to even begin to measure the variety of different stresses and reactions found within the reactive classification. Second, because the reactivity of a waste sample is a function not just of its intensive properties such as density and composition but also of its extensive properties such as mass and surface area, the reactivity of the sample as measured by the tests will not necessarily reflect the reactivity of the whole waste. Third, most of the available tests are not of the "pass-fail" type and require subjective interpretation of the results.

The unavailability of suitable test methods for measuring reactivity should not cause problems. Most generators of reactive wastes are aware that their wastes possess this property and require special handling. This is because such wastes are dangerous to the generators' own operations and are rarely generated from unreactive feed stocks. Consequently, the prose definition should provide generators with sufficient guidance to enable them to determine whether their wastes are reactive."

Therefore, EPA was aware that the definition of reactivity was vague and subjective. However, EPA promulgated the narrative prose descriptions due to the inadequacies of available test methods for reactivity. Federal Registers subsequent to the May 19, 1980, Federal Register indicate no change in EPA's position that any currently available test methods are appropriate for determining the characteristic of reactivity. Also, in an EPA memo dated April 21, 1998, ([RO 14177](#)), EPA withdrew guidance on determining cyanide and sulfide reactivity based upon a specified test. EPA stated that in the absence of appropriate test methods, the narrative prose of 40 CFR 261.23 in conjunction with generator knowledge should provide enough guidance to determine if a waste is a D003 reactive characteristic waste.

SUMMARY:

- EPA is aware that the narrative prose definition for reactive characteristics is vague.
- Due to a lack of adequate reactive test methods, EPA chose narrative definitions for the reactive criteria.
- EPA maintains that these narrative definitions in combination with generator knowledge should be sufficient in determining if a waste exhibits the characteristic of reactivity.

WAC 173-303-090(7) is attached to the e-mail. 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: 7/11/19

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TWO MINUTE TRAINING – ATTACHMENT

SUBJECT: The Hazardous Waste Characteristic of Reactivity (D003)

WAC 173-303-090 Dangerous waste characteristics.

(7) Characteristic of reactivity.

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

- (i) It is normally unstable and readily undergoes violent change without detonating;
- (ii) It reacts violently with water;
- (iii) It forms potentially explosive mixtures with water;
- (iv) When mixed with water, it generates toxic gases, vapors or fumes in a quantity sufficient to present a danger to human health or the environment;
- (v) It is a cyanide or sulfide bearing waste which, when exposed to pH conditions between 2 and 12.5 can generate toxic gases, vapors or fumes in a quantity sufficient to present a danger to human health or the environment;
- (vi) It is capable of detonation or explosive reaction if it is subjected to a strong initiating source or if heated under confinement;
- (vii) It is readily capable of detonation or explosive decomposition or reaction at standard temperature and pressure;
or
- (viii) It is a forbidden explosive as defined in 49 C.F.R. 173.54, or a Class 1 explosive, Division 1.1, Division 1.2, Division 1.3, and Division 1.5, as defined in 49 C.F.R. 173.50 and 173.53.

(b) A solid waste that exhibits the characteristic of reactivity must be designated DW, and assigned the dangerous waste number of D003.