

SUBJECT

DATE

1394. RCRA Empty vs. DOT Empty

ENCORE

JUL 30, 2020

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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: RCRA EMPTY VS. DOT EMPTY

DATE: JULY 30, 2020

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TWO MINUTE TRAINING

SUBJECT: RCRA Empty vs. DOT Empty

Q: Last week's "Two Minute Training" (2MT), concerned a RCRA empty tanker. Since the customer's tanker (container) was RCRA empty, can the customer take it for granted that he or she also has a DOT empty container and therefore any residues are not subject to the DOT Hazardous Materials Regulations (HMR)?

A: Sometimes yes, but most times no.

Per [49 CFR 173.29\(b\)](#), a DOT cleaned and purged container (empty for purposes of this 2MT) is basically a container that has been "sufficiently cleaned of residue and purged of vapors to remove any potential hazard". Per [WAC 173-303-160\(2\)](#) [[40 CFR 261.7](#)], a RCRA empty container (non-acute) is basically a container that has had all waste removed that can be removed and no more than 1-inch of residue remains. The dangerous waste regulations do not require purging of vapors to achieve RCRA empty. Thus a RCRA empty container that is not a DOT empty container could still be subject to the DOT HMR since 49 CFR 173.29(a) requires a non-DOT empty container containing a hazardous material residue to be "offered for transportation and transported in the same manner as when it previously contained a greater quantity of that hazardous material".

On the other hand, DOT has stated that in some instances a container can be emptied without undergoing a cleaning process and be considered DOT empty. A March 7, 2002, ([Ref. No. 02-0033](#)) DOT memo states:

"The methods that can be used to clean and purge a packaging are intentionally not defined in the HMR because they vary greatly depending on the nature of the hazardous material and the type of packaging. In some instances, a packaging can be emptied of hazardous material, including residue, without undergoing a cleaning process and be considered cleaned and purged. In other instances, an active cleaning process may be necessary to clean and purge a packaging of hazardous residue."

Thus in some circumstances, a RCRA empty container can meet the DOT empty container requirements and not be subject to the DOT HMR. An example could be a container of acutely dangerous waste that is triple rinsed followed by air-drying. The container is very clean and the vapors are nonexistent once dried. Hence, this container could be RCRA and DOT empty via a single process. However, a container of non-acute waste could meet RCRA empty by simple waste removal but require extensive cleaning and purging to meet DOT empty.

In general the DOT empty requirements (clean and purge) can be more stringent than the RCRA empty requirements (remove all that can be removed; triple rinsing; etc.). Therefore, each situation must be evaluated on a case-by-case basis to ensure compliance with both the RCRA empty and DOT the empty requirements.

SUMMARY:

- A dangerous waste container can be RCRA empty by removing all waste that can be removed, etc.
- A hazardous material container can be DOT empty if sufficiently "cleaned and purged", etc.
- RCRA empty does not guarantee DOT empty or vice-versa, so both standards must be evaluated.

The March 7, 2002, DOT memo and excerpts from 49 CFR 173.29 and WAC 173-303-160 are attached to the e-mail. If you have any questions, contact me at [Paul W. Martin@rl.gov](mailto:Paul.W.Martin@rl.gov) or at (509) 376-6620.

FROM: Paul W. Martin

DATE: 7/30/2020

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TWO MINUTE TRAINING – ATTACHMENT

SUBJECT: RCRA Empty vs. DOT Empty

**U. S. Department
of Transportation
Research and
Special Programs
Administration**

400 Seventh St., S. W.
Washington, D.C. 20590

Mr. Timothy Roberts
1106 Glendora Avenue
Oakland, CA 94602

March 7, 2002
Ref. No. 02-0033

Dear Mr. Roberts:

This is in response to your letter requesting clarification of the Hazardous Materials Regulations (HMR; 49 CFR Parts 171-180) concerning the requirements in §173.29 for empty packagings. Specifically, you ask whether cooking stoves/and empty bottles previously containing white gas are excepted from the HMR. You state the stoves and bottles are drained and dried by exposure to air prior to being offered for transportation and you plan to pack these items in your checked baggage.

Section 173.29(b)(2) excepts an empty packaging that previously contained a hazardous material from all HMR requirements provided it is cleaned of residue and purged of vapors so that no hazard remains. The methods that can be used to clean and purge a packaging are intentionally not defined in the HMR because they vary greatly depending on the nature of the hazardous material and the type of packaging. In some instances, a packaging can be emptied of hazardous material, including residue, without undergoing a cleaning process and be considered cleaned and purged. In other instances, an active cleaning process may be necessary to clean and purge a packaging of hazardous residue. Provided there is no residue or vapor meeting any of the hazard class definitions in Part 173, Subpart D, the cooking stoves and bottles you describe in your letter are not subject to the requirements of the HMR.

I hope this information is helpful. Please contact this office if you need additional assistance.

Sincerely,

John A. Gale
Transportation Regulations Specialist
Office of Hazardous Materials Standards

173.29(b)(2)

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TWO MINUTE TRAINING – ATTACHMENT

SUBJECT: RCRA Empty vs. DOT Empty

49 CFR §173.29 Empty packagings

(a) General. Except as otherwise provided in this section, an empty packaging containing only the residue of a hazardous material shall be offered for transportation and transported in the same manner as when it previously contained a greater quantity of that hazardous material.

(b) Notwithstanding the requirements of paragraph (a) of this section, an empty packaging is not subject to any other requirements of this subchapter if it conforms to the following provisions:

(1) Any hazardous material shipping name and identification number markings, any hazard warning labels or placards, and any other markings indicating that the material is hazardous (e.g., RQ, INHALATION HAZARD) are removed, obliterated, or securely covered in transportation. This provision does not apply to transportation in a transport vehicle or a freight container if the packaging is not visible in transportation and the packaging is loaded by the shipper and unloaded by the shipper or consignee;

(2) The packaging-

(i) Is unused;

(ii) Is sufficiently cleaned of residue and purged of vapors to remove any potential hazard;

(iii) Is refilled with a material which is not hazardous to such an extent that any residue remaining in the packaging no longer poses a hazard; or

(iv) Contains only the residue of-

(A) An ORM-D material; or

(B) A Division 2.2 non-flammable gas, other than ammonia, anhydrous, and with no subsidiary hazard, at a gauge pressure less than 200 kPa (29.0 psig); at 20 °C (68 °F); and

(3) Any material contained in the packaging does not meet the definitions in §171.8 of this subchapter for a hazardous substance, a hazardous waste, or a marine pollutant.

(c) A non-bulk packaging containing only the residue of a hazardous material covered by Table 2 of §172.504 of this subchapter that is not a material poisonous by inhalation or its residue shipped under the subsidiary placarding provisions of §172.505-

(1) Does not have to be included in determining the applicability of the placarding requirements of subpart F of part 172 of this subchapter; and

(2) Is not subject to the shipping paper requirements of this subchapter when collected and transported by a contract or private carrier for reconditioning, remanufacture or reuse.

(d) Notwithstanding the stowage requirements in Column 10a of the §172.101 table for transportation by vessel, an empty drum or cylinder may be stowed on deck or under deck.

TWO MINUTE TRAINING – ATTACHMENT

SUBJECT: RCRA Empty vs. DOT Empty

WAC 173-303-160 Containers.

(2) A container or inner liner is "empty" when:

(a) All wastes in it have been taken out that can be removed using practices commonly employed to remove materials from that type of container or inner liner (for example, pouring, pumping, aspirating, etc.) and:

- (i) No more than one inch of waste remains at the bottom of the container or inner liner; or
- (ii) No more than 3 percent by weight of the total capacity of the container remains in the container or inner liner if the container is less than or equal to 119 gallons in size;
- (iii) No more than 0.3 percent by weight of the total capacity of the container remains in the container or inner liner if the container is greater than 119 gallons in size.

A container that held compressed gas is empty when the pressure inside the container equals or nearly equals atmospheric pressure; and

(b) If the container or inner liner held acutely hazardous waste, as defined in WAC 173-303-040, toxic EHW as defined in WAC 173-303-100 or pesticides bearing the danger or warning label, the container or inner liner has been rinsed at least three times with an appropriate cleaner or solvent. The volume of cleaner or solvent used for each rinsing must be ten percent or more of the container's or inner liner's capacity or of sufficient quantity to thoroughly decontaminate the container. In lieu of rinsing for containers that might be damaged or made unusable by rinsing with liquids (for example, fiber or cardboard containers without inner liners), an empty container may be vacuum cleaned, struck, with the open end of the container up, three times (for example, on the ground, with a hammer or hand) to remove or loosen particles from the inner walls and corners, and vacuum cleaned again. Equipment used for the vacuum cleaning of residues from containers or inner liners must be decontaminated before discarding, in accordance with procedures approved by the department. A container or inner liner is also considered "empty" if the container or inner liner has been cleaned by another method that has been shown in the scientific literature, or by tests conducted by the generator, to achieve equivalent removal.

Any rinsate or vacuumed residue that results from the cleaning of containers or inner liners must, whenever possible, be reused in a manner consistent with the original intended purpose of the substance in the container or inner liner. In the case of a farmer, if the rinsate is a pesticide residue then the rinsate must be managed or reused in a manner consistent with the application instructions on the pesticide label. On-site disposal or burial of pesticide residues is prohibited. Otherwise, the rinsate must be checked against the designation requirements (WAC 173-303-070 through 173-303-100) and, if designated, managed according to the requirements of this chapter.

(c) In the case of a container, the inner liner, that prevented the container from contact with the commercial chemical product or manufacturing chemical, has been removed.

(3)

(a) Any residues remaining in containers or inner liners that are "empty" as described in subsection (2) of this section will not be subject to the requirements of this chapter, and will not be considered as accumulated wastes for the purposes of calculating waste quantities.

(b) Any dangerous waste in either: A container that is not empty, or an inner liner removed from a container that is not empty (as defined in subsection (2) of this section) is subject to the requirements of this chapter.

FROM: Paul W. Martin

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