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Version 1

Definition of Solid Waste Compendium



Volume J: By-Products

Hazardous Waste Identification Division
Office of Solid Waste
U.S. Environmental Protection Agency



Navigation Tips

To improve document navigation:

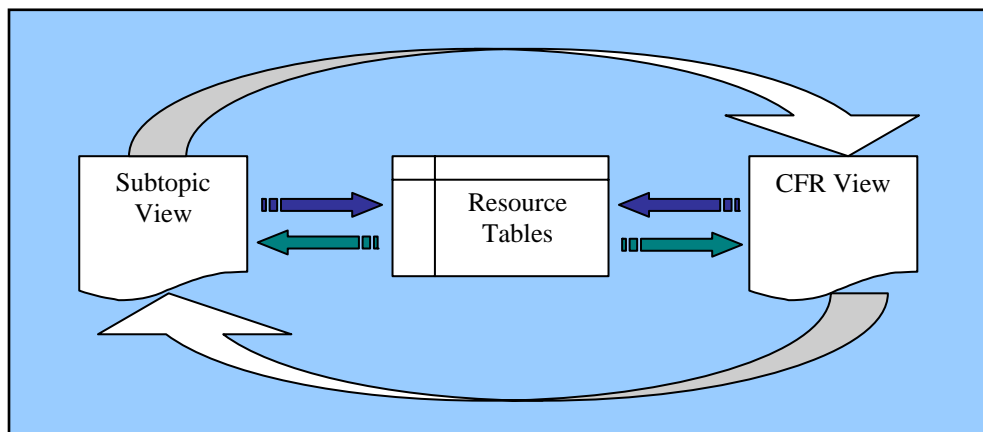
Using Microsoft Word

1. Use the  (back) and  (forward) buttons to navigate between document locations accessed via hyperlinks. These buttons can be accessed from the Navigation toolbar (View > Toolbars > Navigation). Alternatively, use ALT + Left (back) and ALT + Right (forward).
2. Use the Document Map. To show the Document Map, go to View > Document Map.

Using Adobe Reader (PDF)

1. Use the  (back) and  (forward) buttons to navigate between document locations accessed via hyperlinks. These buttons are found on the Navigation bar at the bottom of the document window.
2. Use the Bookmarks listed in the Bookmarks tab (located on the left-hand side of the document window).

Document Layout (arrows represent hyperlinks):



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D	Use Constituting Disposal (UCD)
E	Burning for Energy Recovery
F	Reclamation
G	Speculative Accumulation
H	Spent Materials
I	Sludges
J	By-Products
K	Commercial Chemical Products
L	Inherently Waste-Like Materials
M	Use/Reuse
N	Legitimate Recycling
O	Recyclable Materials
P	Precious Metals Reclamation
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R	Universal Waste
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Introduction

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About the Compendium

The Definition of Solid Waste Compendium serves as a user-friendly reference to assist Environmental Protection Agency (EPA) and state staff, industrial facilities generating and managing solid and hazardous wastes, as well as the general public, in locating resources addressing specific regulatory issues within the federal Definition of Solid Waste regulations. Please note that this reference is designed to be web-based; therefore, the usefulness of the document is maximized when it is viewed on a computer that is connected to the internet.

A frequently mentioned comment from stakeholders is the need for EPA to improve the user-friendliness of the existing regulations. Commenters note that the applicable Definition of Solid Waste regulations and relevant guidance materials are difficult to locate and use. As a result, stakeholders have difficulty in understanding the regulations and identifying solid waste. The objective of this document is to address some of the commenters' concerns by consolidating and streamlining the Definition of Solid Waste into a helpful reference tool that features a user-friendly format, including references to EPA FAQs (Frequently Asked Questions), letters, memoranda, and guidance documents that EPA has provided to the public through the years to help stakeholders interpret the Definition of Solid Waste. This document does not change any of the existing solid or hazardous waste requirements.

The resources referenced in the Compendium may include Federal Register (FR) notices, documents from [Resource Conservation and Recovery Act \(RCRA\) Online](#) (e.g., RCRA Hotline Q&A's, letters, and memoranda issued by EPA), and other resources, as well as relevant Code of Federal Regulations (CFR) language. We have attempted to identify the relevant resources for each Compendium volume topic. However, please note that EPA could have inadvertently overlooked a relevant document and did not reference it. Certain available resources, such as superseded RCRA Online documents and items that were judged to be not pertinent, have not been referenced. Most of the referenced resources are not included or reproduced in the Compendium; instead, hyperlinks to the resources are provided. As an exception, we have included a version of relevant sections of the most current CFR language (as of the date on the cover of the Compendium) that we have reformatted to make it easier to read and find citations of interest. In addition, we also provide links to the [Government Printing Office's Electronic Code of Federal Regulations Web site](#) (e-CFR), which is updated almost daily.

Please note that this document is also not a rulemaking in any way. As well, the included reformatted CFR language is not a substitute for the CFR itself or the requirements in the CFR. The Government Printing Office frequently updates the e-CFR

Web site; where appropriate, hyperlinks to the respective CFR section at the e-CFR Web site are provided.

This reference document presents only the federal Definition of Solid Waste. Most states are authorized to manage their own solid and hazardous waste generator regulatory program. Therefore, states may have their own set of regulations that apply in lieu of federal regulations, and while most state solid and hazardous waste regulations are based on the federal requirements, some states have developed regulations more stringent than the federal program. We direct you to the following Web site to determine if the state regulatory program is different from the federal program:
<http://www.epa.gov/epawaste/wyl/stateprograms.htm>.

The Definition of Solid Waste includes multiple subtopics, and is codified under 40 CFR. To help users of the Compendium more quickly identify the information they need, and to make the Compendium more user-friendly in an electronic environment, the Compendium has been divided into multiple volumes. These volumes are available through EPA's Definition of Solid Waste Web site at <http://www.epa.gov/epawaste/hazard/dsw/index.htm>. Because regulations are promulgated throughout the year, EPA intends to update the Compendium volumes periodically to remain up-to-date with regulations relating to the Definition of Solid Waste.

About the By-Products Volume

This volume of the Compendium references resources pertaining to by-products, a group of materials that appears as included in the Definition of Solid Waste regulations at 40 CFR 261.2(c), Table 1. The definition of "by-product" appears at 40 CFR 261.1(c)(3).

This document is organized into three main sections:

- *Subtopic View* – lists subtopics for resources
- *Resources* – lists resources for each subtopic
- *CFR View* – CFR language we've reformatted for easy reading

The *Subtopic View* section lists the subtopics among the resources pertaining to the regulation of by-products under the Definition of Solid Waste regulations. The *Resources* section is comprised of a table, arranged by subtopic, that provides basic details about and a hyperlink to each resource. The *CFR View* section provides reformatted versions of the relevant CFR language. As noted previously, this reproduced language is not a substitute for the CFR itself or the requirements in the CFR. Additionally, the Government Printing Office frequently updates the e-CFR Web site to which the document is linked; where appropriate, hyperlinks to the respective CFR section at the e-CFR Web site are provided. These three main sections are cross-referenced, where each section includes hyperlinks to the other sections. Please see the "Navigation Tips" section for document navigation guidance.

This reference document does not provide guidance on solid waste or hazardous waste regulations beyond issues concerning the regulation of by-products under the Definition of Solid Waste regulations. For more information regarding the various regulations applied to facilities generating or managing hazardous waste, see [Hazardous Waste Generators: A User Friendly Reference Document](#).

The Compendium volumes are also available in Microsoft Word format from EPA upon request. For more information on these versions and any other questions or comments concerning this document, please contact EPA's Office of Solid Waste:

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Subtopic View

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By-Products [§§261.1(c)(3), 261.2(c)]

Resource Index:

- [Resources applicable to all subtopics](#)
- Resources specific to subtopic:
 - [Circuit boards](#)
 - [Co-product](#)
 - [Definition](#)
 - [Dross/skimmings](#)
 - [Scrap metal](#)
 - [Spent material](#)

Resources by Subtopic

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Subtopic	Resource	Document Date	Type	Topic is Focus?	Link to EPA Summary	Link to Resource
Resources applicable to all subtopics	1. 48 FR 14472 - Amendments to Definition of Solid Waste (Proposed) [pp. 14476]	4/4/1983	Federal Register	Yes	N/A	PDF
	2. 50 FR 614 - Amendments to Definition of Solid Waste (Final) [pp. 618, 625, 630]	1/4/1985	Federal Register	Yes	N/A	PDF
	3. §261.1(c)(3) - Purpose and Scope: For the purposes of §§261.2 and 261.6: Definition of "by-product".	N/A	Code of Federal Regulations	Yes	N/A	e-CFR
	4. §261.2(c) - Definition of solid waste: Materials are solid wastes if they are recycled —or accumulated, stored, or treated before recycling.	N/A	Code of Federal Regulations	Yes	N/A	e-CFR

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Circuit board	1. SOLDER DROSS GENERATED IN MANUFACTURING PRINTED CIRCUIT BOARDS	12/9/1991	Letter	Yes	Summary	PDF
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Co-product	1. REGULATORY STATUS OF HYDROCHLORIC ACID CO-PRODUCT FROM PENTACHLOROPHENOL PRODUCTION	6/25/1987	Letter	Yes	Summary	PDF
	2. THERMAL OXIDIZER AND HYDRODECHLORINATION PROCESS BY-PRODUCT K-WASTES	10/16/1987	Letter	Yes	Summary	PDF
	3. REGULATORY STATUS OF COAL TAR DISTILLATES	7/9/1992	Letter	Yes	Summary	PDF
	4. REGULATORY STATUS OF DISULFIDE OIL WHICH IS BURNED IN A SULFURIC ACID FURNACE	6/2/1993	Letter	Yes	Summary	PDF
	5. REGULATORY STATUS OF HAZARDOUS WASTE FUELS CONTAINING RECOVERED LIGHT HYDROCARBON	11/4/1993	Letter	Yes	Summary	PDF

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Subtopic	Resource	Document Date	Type	Topic is Focus?	Link to EPA Summary	Link to Resource
	6. CLARIFICATION OF RCRA HAZARDOUS WASTE REGULATIONS AS THEY APPLY TO CERTAIN SECONDARY MATERIALS	5/19/1994	Letter	Yes	Summary	PDF
	7. THE REGULATORY STATUS OF A DISTILLATE MATERIAL KNOWN AS "LX-830" THAT IS DERIVED FROM PETROLEUM AND COAL TAR NAPHTHA FEEDSTOCKS	1/31/1995	Letter	Yes	Summary	PDF
	8. REGULATORY DETERMINATION ON PURGE MONOMER GENERATED FROM POLYSTYRENE MANUFACTURING	2/19/2002	Letter	Yes	Summary	PDF
	Return to: Subtopic View CFR View (CFR text) Main Index					
Definition	1. REGULATORY STATUS OF SOLDER DROSS WHEN SMELTED FOR LEAD RECOVERY	8/13/1985	Letter	Yes	Summary	PDF
	2. REGULATORY STATUS OF PLASTIC CHIPS FROM RECLAMATION OF LEAD-ACID BATTERIES	8/4/1993	Memo	No	Summary	PDF
	3. REGULATORY STATUS OF HAZARDOUS WASTE FUELS CONTAINING RECOVERED LIGHT HYDROCARBON	11/4/1993	Letter	Yes	Summary	PDF
	4. CLARIFICATION OF RCRA HAZARDOUS WASTE REGULATIONS AS THEY APPLY TO CERTAIN SECONDARY MATERIALS	5/19/1994	Letter	Yes	Summary	PDF
	Return to: Subtopic View CFR View (CFR text) Main Index					
Dross/skimmings	1. REGULATORY STATUS OF SOLDER DROSS WHEN SMELTED FOR LEAD RECOVERY	8/13/1985	Letter	Yes	Summary	PDF
	2. REGULATORY STATUS OF SOLDER SKIMMINGS THAT ARE RECLAIMED	7/20/1989	Letter	No	Summary	PDF
	3. SOLDER DROSS GENERATED IN MANUFACTURING PRINTED CIRCUIT BOARDS	12/9/1991	Letter	Yes	Summary	PDF
	4. REGULATORY STATUS OF SOLDER SKIMMINGS	8/28/1992	Memo	Yes	Summary	PDF
	Return to: Subtopic View CFR View (CFR text) Main Index					

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Subtopic	Resource	Document Date	Type	Topic is Focus?	Link to EPA Summary	Link to Resource
Scrap metal	1. DROVE RECLAMATION IN BRASS INDUSTRY, BY-PRODUCT DESIGNATION	4/5/1989	Letter	Yes	Summary	PDF
	2. REGULATORY STATUS OF SOLDER SKIMMINGS THAT ARE RECLAIMED	7/20/1989	Letter	No	Summary	PDF
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Spent materials	1. REGULATORY STATUS OF SOLDER DROSS WHEN SMELTED FOR LEAD RECOVERY	8/13/1985	Letter	Yes	Summary	PDF
	2. SOLDER DROSS GENERATED IN MANUFACTURING PRINTED CIRCUIT BOARDS	12/9/1991	Letter	Yes	Summary	PDF
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CFR View Index

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NOTE: The CFR links in the below index are internal to this document.

CFR Location	Title/Topic
261.1	Purpose and scope.
261.1(c)	Definitions for the purposes of §§261.2 and 261.6.
261.2	Definition of solid waste.
261.2(c)	Materials are solid wastes if they are <i>recycled</i> .

CFR View

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NOTE: The CFR language outline has been formatted

§261.1: Purpose and scope.

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[****Preceding section text omitted****]

(c) For the purposes of §§261.2 and 261.6:

[****Preceding part text omitted****]

(3) A “by-product” is a material that is not one of the primary products of a production process and is not solely or separately produced by the production process. Examples are process residues such as slags or distillation column bottoms. The term does not include a co-product that is produced for the general public's use and is ordinarily used in the form it is produced by the process.

[****Remaining section text omitted****]

§261.2: Definition of solid waste.

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[****Preceding section text omitted****]

(c) Materials are solid wastes if they are *recycled*—or accumulated, stored, or treated before recycling—as specified in paragraphs (c)(1) through (4) of this section.

(1) *Used in a manner constituting disposal.*

(i) Materials noted with a “*” in Column 1 of Table 1 are solid wastes when they are:

(A) Applied to or placed on the land in a manner that constitutes disposal;
or

(B) Used to produce products that are applied to or placed on the land or are otherwise contained in products that are applied to or placed on the land (in which cases the product itself remains a solid waste).

(ii) However, commercial chemical products listed in §261.33 are not solid wastes if they are applied to the land and that is their ordinary manner of use.

§261.2: Definition of solid waste (cont.).

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(2) *Burning for energy recovery.*

(i) Materials noted with a “*” in column 2 of Table 1 are solid wastes when they are:

(A) Burned to recover energy;

(B) Used to produce a fuel or are otherwise contained in fuels (in which cases the fuel itself remains a solid waste).

(ii) However, commercial chemical products listed in §261.33 are not solid wastes if they are themselves fuels.

(3) *Reclaimed.* Materials noted with a “*” in column 3 of Table 1 are solid wastes when reclaimed (except as provided under §261.4(a)(17)). Materials noted with a “—” in column 3 of Table 1 are not solid wastes when reclaimed. (4) *Accumulated speculatively.* Materials noted with a “*” in column 4 of Table 1 are solid wastes when accumulated speculatively.

(4) *Accumulated speculatively.* Materials noted with a “*” in column 4 of Table 1 are solid wastes when accumulated speculatively.

§261.2: Definition of solid waste (cont.).

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Table 1

	Use constituting disposal (§261.2(c)(1))	Energy recovery/ fuel (§261.2(c)(2))	Reclamation (§261.2(c)(3)) (except as provided in 261.4(a)(17) for mineral processing secondary materials)	Speculative accumulation (§261.2(c)(4))
	1	2	3	4
Spent Materials	(*)	(*)	(*)	(*)
Sludges (listed in 40 CFR Part 261.31 or 261.32)	(*)	(*)	(*)	(*)
Sludges exhibiting a characteristic of hazardous waste	(*)	(*)	—	(*)
By-products (listed in 40 CFR 261.31 or 261.32)	(*)	(*)	(*)	(*)
By-products exhibiting a characteristic of hazardous waste	(*)	(*)	—	(*)
Commercial chemical products listed in 40 CFR 261.33	(*)	(*)	—	—
Scrap metal other than excluded scrap metal (see 261.1(c)(9))	(*)	(*)	(*)	(*)

Note: The terms “spent materials,” “sludges,” “by-products,” and “scrap metal” and “processed scrap metal” are defined in §261.1.

[***Remaining section text omitted***]

*****End of By-Products CFR Excerpts*****

Glossary of Acronyms

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Acronym	Meaning
CFR	Code of Federal Regulations
e-CFR	electronic Code of Federal Regulations
EPA	Environmental Protection Agency
FR	Federal Register
RCRA	Resource Conservation and Recovery Act