530-Z-92-019

federal register

Wednesday
November 18, 1992

Part II

Environmental Protection Agency

40 CFR Parts 260 et al.

Hazardous Waste Management; Liquids in Landfills; Rule

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Parts 260, 264, 265, and 271

[FRL-4506-3]

RIN 2050-AA34

Hazardous Waste Management; Liquids in Landfills

AGENCY: Environmental Protection Agency.

ACTION: Final rule.

SUMMARY: Under authority of the Resource Conservation and Recovery Act (RCRA) as amended by the Hazardous and Solid Waste Amendments of 1984 (HSWA), EPA is promulgating this final rule regarding the landfill disposal of containerized liquids mixed with sorbents. This rule satisfies the statutory requirement that EPA issue a rule that prohibits the disposals in hazardous waste landfills of liquids that have been sorbed in materials that biodegrade or that release liquids when compressed as might occur during routine landfill operations. This rule will help assure the stability of materials in hazardous waste landfills.

EFFECTIVE DATE: May 18, 1993.

ADDRESSES: The public docket for this final rule is docket reference code F-92-CLIF-FFFFF, and the public dockets for the four proposals and supplemental notices are docket reference codes F-86-CLIP-FFFFF, F-87-CLLN-FFFFF, F-91-CLLA-FFFFF, and F-92-CCLA-FFFFF. These dockets are in room M2427, U.S. EPA, 401 M St. SW, Washington, DC 20460, and are open from 9 am to 4 pm, Monday through Friday, excluding holidays. Call 202-260-9327 for an appointment to review docket materials. Up to 100 pages may be copied free of charge from any one regulatory docket. Additional copies are $0.15 per page.

FOR FURTHER INFORMATION CONTACT: The RCRA/Superfund Hotline at 1-800-424-9346 (toll free), or 703-920-9810 in the Washington, DC area. For information on technical aspects of this rule, contact Ken Shuster, Office of Solid Waste (OS-340), U.S. EPA, 401 M St. SW, Washington, DC 20460, 202-260-2214.

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I. Authority

These rules are being issued under authority of section 3004(c) of the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act of 1976 and the Hazardous and Solid Waste Amendments of 1984; 42 U.S.C. 6924(c).

II. Background

A. Regulatory Background

Section 3004(c)(2) of HSWA requires EPA to issue final rules, by February 8, 1986, that "minimize the disposal of containerized liquid hazardous waste in landfills," that "minimize the presence of free liquids in containerized hazardous waste to be disposed of in landfills," and that "prohibit the disposal in landfills of liquids that have been absorbed in materials that biodegrade or that release liquids when compressed as might occur during routine landfill operations."

On April 30, 1985 (50 FR 18370) EPA issued a final rule requiring the use of the Paint Filter Liquids Test (PFT), Method 9095, to determine the presence of free liquids in either bulk or containerized waste. Wastes that fail the PFT—i.e., that contain free liquids—cannot be disposed of in landfills. This satisfied the requirement that EPA issue regulations minimizing the disposal of containerized liquid hazardous waste in landfills and minimizing the presence of free liquids in containerized hazardous waste to be disposed of in landfills.[1]

[1] Section 3004(c)(1) of HSWA prohibits the placement of bulk or noncontainerized liquid hazardous waste in landfills, and section 3004(c)(3) prohibits the placement of liquids which are not hazardous wastes in Subtitle C landfills unless certain demonstrations are made. The PFT is required to determine the presence of liquids or free liquids to comply with these prohibitions, 40 CFR 264.314(c) and 40 CFR 265.314(d).

On December 24, 1986 (51 FR 46824) EPA proposed a rule that would prohibit disposal of containerized liquids treated with sorbents that had more than one percent total organic carbon or TOC (as a measure of biodegradability). In the preamble, EPA recommended that the modified Mebius procedure (Page, A.L., ed., 1982, Methods of Soil Analysis) be used to determine the organic carbon content. EPA also proposed a Liquids Release Test (LRT), a confined compression type test, to simulate the release of liquids from sorbed wastes when compressed during landfill operations. The test relied on a device known as the Zero-Headspace Extractor (ZHE), which was developed in conjunction with the new Toxicity Characteristic Leaching Procedure (TCLP). Containerized sorbed wastes that failed these tests could not be disposed of in landfills. The proposal was intended to satisfy the section 3004(c)(2) requirement that EPA "prohibit the disposal in landfills of liquids that have been absorbed in materials that biodegrade or that release liquids when compressed as might occur during routine landfill operations."

On June 24, 1987 (52 FR 23695) EPA issued a supplemental proposal regarding the definition of biodegradable in response to comments received on the one percent TOC requirement and on the recommended modified Mebius procedure. In this notice, EPA recommended two additional tests to determine biodegradability: ASTM Method G21-70 (1984a)—Standard Practice for Determining Resistance of Synthetic Polymer Materials to Fungi, and ASTM Method G22-76 (1984b)—Standard Practice for Determining Resistance of Plastics to Bacteria. The Agency also proposed to regulate sorbent pillows in a manner similar to lab packs.

On October 29, 1991 (56 FR 55646) EPA issued another supplemental notice, seeking comments on single and multi-laboratory test results on a revised Liquids Release Test device (also a confined compression type test). Finally, in response to further comments, EPA on May 1, 1992 (57 FR 18853) issued a notice of supplemental information seeking comment on use of the PFT versus the LRT for containerized sorbents.

In today's rule, EPA is taking final action on these proposals and notices of additional information, and is completing EPA's regulatory responsibilities under RCRA section 3004(c)(2).

B. Role of Sorbents in Liquid Hazardous Waste Disposal

Dozens of sorbents are on the market today. These sorbents are used to sorb free liquids in wastes before land disposal, thereby reducing the amount of leachate likely to be generated after disposal, or to sorb free liquids from a spill before they migrate. Some sorbents are by-products of other production processes which are typically discarded, such as fly ash from coal-burning, cement kiln dust from cement production, shredded and ground rubber from tires, shredded paper and sawdust, and corn cobs, peanut shells, and rice hulls from crop harvesting. They tend to be relatively cheap and are often readily available. Other sorbents are derived from mined natural minerals, such as bentonite or montmorillonite clays, diatomaceous earth, volcanic ash, lime and limestone, silicates, and vermiculite. Other common sorbents are synthetic organic polymers such as polyethylene, polypropylene, polyurethane, and polystyrene. Many commercial sorbents are mixtures of sorbent materials. Often these materials, especially the natural minerals, are treated by heat, grinding, sifting, or use of additives to enhance their sorptive capacities.

Sorption can be viewed in two ways: First, as the soaking up of liquid or fluid material so that the material no longer flows, and second, as the rendering of hazardous constituents immobile or less mobile, via attenuation, chemical reactions or fixation, ion exchange, precipitation, neutralization, or encapsulation (also referred to as chemisorption). Some sorbents act in both ways to one degree or another. The focus of today's rule is on the first view of sorbents. Even so, the ultimate selection of a sorbent is usually based on both aspects, as well as on a number of other factors discussed below.

Two very important, interrelated considerations in the selection of a sorbent are: (1) Stability (in terms of both maintaining liquids in an immobile matrix and immobilizing hazardous constituents), and (2) ultimate use or disposal of the sorbed material. If the sorbed material is to be disposed of in a landfill, the first consideration, long-term stability, is of paramount importance. Thus, nonbiodegradable sorbents able to hold up under pressure are desirable. If the sorbed material is to go to an incinerator, then such factors as energy content (Btu's), heavy metal content, and products of combustion are important; long-term stability is not. Thus, for incineration, organic sorbents, whether biodegradable or not, are generally desirable, depending on potential by-products of combustion (e.g., polyvinyl chloride which produces HC1 upon incineration or materials with heavy metals may be less desirable despite their Btu content, but peanut shells, shredded paper, or corn cobs may be desirable). Or, if the sorbed material is to go to a recycling facility (where it will be squeezed out and the oil, gasoline, solvent, or other material recovered), then squeezeability/releasability, without the sorbent breaking down, is desirable.

Some sorbents are more effective, i.e., have greater capacity and retention efficiencies and are faster, than others in soaking up liquids (some soak up considerably larger amounts of liquids per volume or weight of sorbent; some are structurally more stable and retain more liquids under pressure; and some actually react chemically with liquids, sometimes irreversibly, to form a nonliquid mass that further ensures stabilization). The effectiveness of a given sorbent often depends on the properties of the liquid to be sorbed. This liquid is referred to as the sorbate. Some sorbents are considerably more effective with some sorbates than with others. For example, sorbents that are both hydrophobic and less dense than water can be very effective in sorbing oils on water (oil spills) where they can be readily skimmed off the surface, whereas other sorbents would soak up more water and less oil, and would sink where they are not readily recoverable. Some sorbents substantially raise the flash points of solvents, decreasing flammability concerns. Some sorbents are ineffective because they are broken down or dissolved by certain sorbates (e.g., hydrofluoric acid breaks down silicates or glass). That is, chemical degradation of the sorbent can occur as well as biodegradation. Sorbent/sorbate properties that affect sorbency include: pH, porosity, surface area, potential capillarity and surface tension or affinity for a sorbate, polarity, and viscosity. Thus, there are technical factors affecting sorbent selection as well as economic and other practical factors, such as availability (especially timeliness in the case of a spill or emergency), cost, sorbent capacity (sorbate to sorbent ratio or percent, by volume and by weight, which affects total volume and weight and therefore cost to transport and use or dispose), and distance to site of use or disposal.

EPA considered these factors in developing today's rule, which is designed to facilitate technological advances and to allow flexibility for the treaters of liquids to select the most effective and practical solutions. The rule sets minimum standards regarding biodegradation and release of liquids that containerized wastes mixed with sorbents must meet before they can be landfilled. EPA did not attempt to evaluate the effectiveness of various sorbents beyond these minimums, nor did EPA attempt to identify efficient sorbate/sorbent combinations. Instead, today's rule allows the selection of the most effective sorbent for a specific situation, as long as it meets the rule's minimum standards.

III. Summary of Today's Rule

Today's rule adopts the Paint Filter Liquids Test, Method 9095, for the testing of containerized liquids to which sorbents have been added before land disposal; lists classes of nonbiodegradable sorbents, and gives examples in each class; and identifies two tests, either of which may be used to determine the nonbiodegradability of sorbents not within a class on the list. It also requires the use of nonbiodegradable sorbents in lab packs.

IV. Detailed Discussion of the Final Rule

A. Definition of "Sorbents"

In RCRA section 3004(c)(2), Congress requires EPA to establish special standards for "liquids that have been *absorbed* in materials that biodegrade or that release liquids * * *" (emphasis added). Several commenters on EPA's proposals stated that Congress misused the term *ab*sorbed, and should have used the term *ad*sorbed, or perhaps both terms. "Adsorbents" are materials that retain liquids on the surface of their particles by capillary action and surface tension. "Absorbents" retain liquids within the void spaces between particles and within the inner structure of the sorbing material. Discussion of the issue in the legislative history of HSWA clearly indicates that Congress meant *ad*sorbents, as defined above, as well as *ab*sorbents. To reflect this clear Congressional intent, EPA uses the terms "sorbent" and "sorb" in today's rule, instead of the terms "absorbent" and "absorb." These terms are defined in § 260.10. "Sorbent" means a material that is used to soak up free liquids by either adsorption, or both. "Sorb" means to either adsorb or absorb, or both.

B. Paint Filter Liquids Test (PFT) Versus Liquids Release Test (LRT)

In its December 24, 1986, October 29, 1991, and May 1, 1992 **Federal Register** notices, EPA proposed and solicited comment on a Liquids Release Test (LRT) specifically designed to simulate the behavior or sorbed materials under compression that might occur during

routine landfill operations. In December 1986, EPA proposed use of the Zero Head-Space Extractor (ZHE) device, which EPA was developing in conjunction with the new Toxicity Characteristic Leaching Procedure (TCLP). Because of technical concerns raised by commenters on the ZHE, EPA subsequently developed and tested a different compression type device. In the October 1991 proposal, EPA published the results of single and multi-laboratory tests using the new LRT device at 50 psi to simulate worst-case landfill pressures. The 50 psi was based on a 100 ft landfill depth and an overlying material bulk density of 70 lbs/cu ft. A survey conducted by EPA before the December 1986 proposal showed that most landfill depths were less than 60 ft, and the maximum depth was 100 ft.

Commenters continued to raise concerns about the practicality of the revised LRT noticed in October 1991, about perceived technical flaws with the test, and about the test's performance relative to the Painter Filter Liquids Test (PFT). In response, EPA published a supplemental notice in May 1992 soliciting comment on whether the PFT should be used in lieu of the LRT to satisfy the statutory requirements of section 3004(c)(2).

The overwhelming majority of commenters on EPA's May 1, 1992 notice as well as on earlier notices supported use of the PFT over the LRT for all landfilled hazardous wastes, including containerized sorbed liquid wastes. The major reasons commenters gave for preferring the PFT were:

(1) Although the PFT does not involve compression of the sorbed waste, it nonetheless reasonably simulates whether liquids will be released under pressure. In fact, EPA's test data show that in the case of sorbed water-based wastes the PFT gave results that were more conservative than the LRT "pressure" test (i.e., samples failed the PFT at lower moisture contents than in samples that failed the LRT at 50 psi).

(2) The LRT does not work well for testing samples sorbed with Imbiber Beads ® and similar sorbents. Such materials, which are compressible and elastic, tend to be extruded through the small openings in the LRT device, indicating failure. Such extrusions, however, are not releases of liquids and should not be so interpreted. This "false positive" problem does not exist with the PFT.

(3) The PFT has been required and used since June 1985, whereas commenters raised a number of technical questions with the LRT (e.g., reproducibility, sample size, sample preparation and placement, pressure amount, pressure application rate, test duration, temperature, and lack of test data on a number of sorbent/sorbate combinations).

(4) The PFT is a simpler test, more easily conducted, and simpler to clean up after (the LRT device is especially difficult and time consuming to clean after testing materials like Imbiber Beads ®, whereas the PFT device is not); it involves a significantly cheaper testing process (equipment and labor); its use eliminates the need for facilities to stock two types of test apparatus for similar purposes and to train personnel in the use of the LRT; and its use avoids potentially significant delays in safe disposal of wastes, since the PFT set-up, test, and clean-up time (10–15 minutes/sample) is significantly less than the LRT (25–75 minutes/sample).

(5) Use of the PFT for containerized sorbed waste would result in consistent environmental performance testing of all materials going into a landfill (whether containerized or not, whether treated with sorbents or not) in terms of the potential for releasing liquids.

(6) The major source of liquids in landfills is precipitation; relative to this, the environmental significance of any difference between the PFT and the LRT is very small (even without consideration of the additional protection afforded by the land disposal restrictions and double liners/leachate collection requirements for landfills).

Except for the technical questions raised in point (3) above, EPA agrees with these comments, concluding that the PFT is generally a more appropriate test than the LRT for the statutory purpose. By comparing the LRT test results to the PFT test results, EPA has been able to use the LRT to show that the PFT reasonably simulates and serves as a surrogate for a 50 psi pressure test for water-based wastes. Therefore, the additional cost, difficulty, and time for the LRT are unjustified.

At the same time, EPA disagrees that the LRT reproducibility/technical issues raised by the commenters (see 3 above) pose major problems, since sufficient test data exist either to justify the current specification or a modified specification. Further, in developing test methods, EPA need not test every possible matrix at every concentration/saturation level to demonstrate that the method is reproducible and valid. For the LRT, developmental and validation tests were performed on a set of sorbent/sorbate combinations spanning the array of materials expected to be subject to the test method. This is consistent with the approach EPA has taken in developing and validating other RCRA hazardous waste test methods.

The only concern with the PFT is its performance where oily-based wastes are the sorbates. Test data on oily-based sorbates show that the LRT is more conservative than the PFT for this category. EPA, however, notes that this issue is not particular to sorbed wastes. For all oily wastes—not merely sorbed oily wastes—there are wastes that may flow as a liquid but that do not filter within the 5 minute test and, therefore, are not defined as "liquids" under the PFT. Thus, this issue is beyond the scope of today's rulemaking. EPA recognizes that testing procedures for oily waste that can flow in the environment, whether sorbents have been added or not, may need to be improved. EPA is now studying this issue and is considering possible revisions of test procedures, which may be as simple as extending the duration of the PFT and/or using a pressure plate in the PFT for oily wastes. At the same time, EPA recognizes that such improvements may be unnecessary or of low priority, given that land disposal of oily hazardous wastes is or will soon be strictly controlled by the land disposal restrictions.

For these reasons, EPA is today retaining the PFT, or Method 9095, as the test to be used to determine if liquids will be released from containerized sorbed wastes. This will simplify the proposed testing requirements since the PFT is already required for all treated and nontreated, sorbed and nonsorbed, containerized and bulk wastes. That is, no wastes disposed in hazardous waste landfills can contain free liquids, as determined by the PFT. This approach provides equal treatment for all landfilled wastes. Also, by adopting the PFT instead of the LRT, the Agency does not have to address the special situation of various sorbent materials that cause problem s in the LRT device (e.g., Imbiber Beads®). Since the PFT is already required, no changes to the existing regulations are needed for this requirement.

Chemical Fixation/Stabilization. Several commenters argued that chemically stabilized wastes should be exempted from the LRT, primarily because the device either is ruined or does not work well with these materials. Commenters also argued that chemically fixed wastes should not be classified as sorbed wastes, even though some sorption might take place. Since EPA is not adopting the LRT, this issue is moot.

C. Biodegradability

Many commenters discussed EPA's proposals regarding how to define biodegradable sorbents, and suggested

that EPA provide a combination of (1) lists or categories of acceptable and unacceptable sorbents, (2) tests that can be used to determine biodegradability, and (3) other criteria (e.g., environmental stability data). Commenters argued that a combination of options is needed because no one test or definition would be universally applicable (e.g., for inorganic materials with no carbon, the ASTM tests are not necessary), and a list alone would not be all inclusive. Commenters in particular discussed what tests and/or criteria EPA should establish, which sorbents EPA should list, when and by whom the different tests should be performed, and the number of tests that would be necessary.

"Biodegradation" is the process by which bacteria and fungi (microorganisms) consume (metabolize or decompose) an organic material. Generally, materials that do not contain carbon, and inorganic materials that contain carbon, such as calcium carbonate ($CaCO_3$), are considered to be nonbiodegradable for the purposes of this rule. Commenters pointed out that biodegradation potential exists where a material contains organic carbon, but not all organic carbon is readily available to microorganisms. In fact, very little biodegradation, if any, occurs over periods of many years with some materials containing organic carbon. For example, commenters presented information demonstrating that high-molecular weight synthetic organic polymers such as high density polyethylene and polypropylene are nonbiodegradable. In addition, as EPA noted in its June 24, 1987 proposal, several laboratory tests have been used successfully to determine whether a material is biodegradable.

In response to public comments, today's rule allows two options, in §§ 264.314(e) and 265.314(f), for defining nonbiodegradability. The rule (1) provides descriptions of classes of sorbent materials, and lists of sorbent materials as examples in each class, that are nonbiodegradable and therefore acceptable without further testing; and (2) provides two tests for sorbents not listed or not falling within one of the classes listed. A sorbent that passes either of these tests is nonbiodegradable and is therefore acceptable for landfill disposal in containers (providing, of course, that the sorbed waste passes the PFT).

Lists of Nonbiodegradable Material. In the first option, EPA has listed three classes of nonbiodegradable sorbent materials.

The first class consists of three types of materials: (1) Naturally occurring inorganic minerals (e.g., clay, diatomaceous earth), (2) man-made inorganic materials, which are often modified natural minerals (e.g., calcined montmorillonite, cement kiln dust, fly ash), and (3) elemental carbon (e.g., activated charcoal).

The second class comprises high molecular-weight synthetic organic polymers (e.g., high density polyethylene).

The third class is made up of mixtures of the nonbiodegradable sorbent materials within the first or second classes.

EPA has concluded that these materials are nonbiodegradable because (1) the inorganic minerals and other inorganic materials do not contain carbon, they contain only inorganic or elemental carbon, or they contain insignificant amounts of organic carbon, and (2) the high-molecular weight synthetic organic materials (i.e., polymers) have proved to be highly resistant to biodegradation.

EPA received numerous comments that synthetic polymeric materials, or specific polymers, should be excluded from the definition of biodegradable. While sorbents derived from natural polymeric materials such as cellulose and starch are generally readily biodegradable, by comparison, high molecular weight synthetic organic polymers generally resist biodegradation. Biodegradability of synthetic polymers decreases as molecular weight increases. This is partly because the long chains of high molecular weight synthetic polymers tend to provide relatively few places for degradation to occur since microorganisms are generally only able to effectively attack at the ends of the chains. That is, the microbial enzymes are unable to break the backbone linkage of the long polymer chains into smaller molecules, attacking, instead, only the terminal ends and any amorphous parts of the polymer chains. Other characteristics of synthetic polymers thought to contribute to their resistance to biodegradation include: Many are hydrophobic or water repellant (microorganisms need water); they resist enzymatic attack because of their density, orientation, degree of crystallization, and bonding characteristics; and some contain antioxidants or biocidal additives. Whatever the mechanisms, test data and environmental experience show these synthetic polymers to be resistant to biodegradation. Even where there is evidence that plasticizers and other additives to polymer products are degraded, the synthetic polymeric materials themselves generally are not degraded. EPA is aware of research efforts to develop biodegradable polymers and to enhance biodegradation of synthetic polymers. In most cases, this effort has been based on biopolymers, or materials of biological origin, e.g., cellophane. These materials are explicitly excluded from the definition of nonbiodegradable in today's rule. Also included in the final rule is a restriction that the synthetic polymers not be specifically designed to biodegrade, since plastics can be designed to be relatively biodegradable by adding prooxidants, biodegradable additives (e.g., starch), and other additives that help initiate chemical degradation which make the polymers more susceptible to biological attack.

EPA has also included in today's rule the stipulation that only "high molecular weight" polymers be classified automatically as nonbiodegradable. Low molecular weight polymers—e.g., with average molecular weights of less than a few thousand—may in certain circumstances be biodegradable. While such materials are generally not suitable as sorbents because of their physical properties, EPA nonetheless believes that they should be excluded from the classification in today's rule. At the same time, EPA does not believe it is necessary or appropriate to draw a specific line defining "high" molecular weight. Effective polymeric sorbents currently in use today generally have molecular weights in the 10's or 100's of thousands, or even in the millions. These are clearly high molecular weights. Below these levels, as polymers approach the low 1000's in molecular weight, professional judgment must come into play in assessing a substance's degradability.

For each category of acceptable sorbents, EPA has listed specific examples in the rule. The materials listed as examples in the rule are not intended to be all-inclusive, but merely to exemplify and help clarify the classes of acceptable sorbents. EPA recognizes that some of the examples are generic (e.g., clays, smectites) that include a number of materials, some of which are also listed separately; that some of the terms are to a certain extent redundant or overlapping; and that some are very specific chemicals. The materials cited are types of nonbiodegradable materials most commonly used as sorbents and most frequently referred to in the public comments and literature. This use of lists, the examples listed, and the classes described, are consistent with the legislative history, which states: "Examples of absorbents that are likely to be found to be acceptable (for both

nonbiodegradation and pressure stability reasons) are the chemical reagents discussed above (cement- or lime-based materials, pozzolanic materials, and thermoplastic or organic binders) and fine-grained earthen materials (e.g., bentonite, montmorillionite (sic), kaolinite, and Fuller's earth)" (July 25, 1984, *Congressional Record—Senate*, S9177).

EPA has not attempted to define or list biodegradable, or unacceptable, sorbent materials in the rule. Since the Agency has defined nonbiodegradable material, it believes that defining biodegradable materials would be redundant. However, EPA notes that certain materials are well known to be biodegradable and would not be acceptable under today's rule. For example, cellulosic or biosynthesized materials are clearly biodegradable (e.g., sawdust, wood fiber or pulp, shredded paper, straw, ground corncobs, ground peanut hulls, municipal waste). These materials do not fall into any of the acceptable categories of sorbents, and they would clearly fail any test of nonbiodegradability. Consequently, they may not be used to sorb liquids in wastes which are subsequently disposed of in a landfill (except as noted below). This is consistent with the legislative history of section 3004(c), which listed sawdust, municipal waste, and shredded paper as examples of biodegradable sorbents, and therefore unacceptable (ibid). These biodegradable sorbents may, however, be used to sorb liquids in wastes which are then treated in accordance with RCRA treatment standards. In this case, the residual may be landfilled, provided it meets all applicable requirements, e.g., it is no longer a liquid. For example, wastes mixed with biodegradable sorbents may be incinerated and then the residual or ash, which is no longer liquid, no longer sorbed waste, and no longer biodegradable, may be landfilled.

EPA recognizes that some inorganic materials or elemental carbon could contain some level of organic carbon. EPA does not intend that these materials necessarily be classified as biodegradable or necessarily be required to be tested for biodegradability. At the same time, EPA wants to make it clear that inorganic materials are considered to be biodegradable if they have been mixed with significant amounts of biodegradable materials (e.g., with sawdust or ground corncobs), or if they are significantly "contaminated" with organic soils or materials.

In today's rule, EPA has not attempted specifically to define the degree of "contamination" or mixing that would render an inorganic, carbon, or synthetic organic polymeric material ineligible. Commenters, however, provided a significant amount of information on total organic carbon content of materials generally recognized as nonbiodegradable. For example, rice hull ash generally contains 2–6% total organic carbon; fly ash suitable as a sorbent or stabilizer may contain 2–8%. EPA, therefore, concludes that sorbents otherwise meeting the criteria of today's rule should not be excluded or require testing because of organic carbon content within these ranges. For mixtures above these ranges (i.e., above 8%), the mixture sorbent would have to be tested or demonstrated that it is nonbiodegradable.

Tests of Biodegradable Material. In the second option, if a sorbent is not in a class listed in the regulations, then a test must be conducted or a demonstration made. The tests/demonstrations are: (1) The sorbent material is shown to be nonbiodegradable using ASTM Method G21–70 (1984a)—Standard Practice for Determining Resistance of Synthetic Polymer Materials to Fungi; or (2) the sorbent material is shown to be nonbiodegradable using ASTM Method G22–76 (1984b)—Standard Practice for Determining Resistance of Plastics to Bacteria.

The ASTM tests, identified in EPA's June 24, 1987 proposal, are already required by the U.S. Nuclear Regulatory Commission for radioactive wastes to prove their resistance to biodegradation. The ASTM tests are 21-day tests, using specific bacteria and fungi cultures. After the 21-day incubation period, the test material is inspected for growth, which is evidence of biological activity and an indication of biodegradation. Although commenters supported use of these tests, at least one commenter warned of the possibility of false positives (i.e., a nonbiodegradable material might show up in the test as biodegradation). EPA agrees that this is possible. In these cases, the additional ASTM chemical, electrical, and physical tests regarding structural changes listed in the bacterial and fungal test methods can be used to determine whether there is indeed biodegradation or not; or the tests can be rerun.

In the December 24, 1986 notice, EPA proposed to define biodegradability on the basis of total organic carbon content, and the Agency suggested that use of the modified Mebius procedure to determine that content (Page, A.L., ed., 1982, Methods of Soil Analysis, Part 2, Chemical and Microbial Properties, Second Edition, No. 9, Part 2, American Society of Agronomy, Inc. Madison). Commenters were generally opposed to this approach, in part because EPA's proposed TOC level (1%) would eliminate many high-performing sorbents (e.g., pozzolanic materials and synthetic polymers), and in part because of technical issues related to the appropriateness of the test (e.g., it does not distinguish between elemental carbon and organic carbon). Therefore, EPA has not included in today's rule a TOC criterion. Nevertheless, EPA notes that the modified Mebius test might be used to demonstrate that a material fits on the list as an inorganic with less than 8% TOC i.e., that it is acceptable as a sorbent under §§ 264.314(e)(1)(i) and 265.314(f)(1)(i).

Alternative Demonstrations/Tests of Biodegradability. A number of commenters encouraged EPA to accept alternative tests, or engineering judgment in addition to the identified tests. EPA agrees that other tests exist, but has decided to limit the final rule to those tests EPA proposed since specific alternatives were not discussed. Also, some flexibility for engineering judgment has been provided in the lists and descriptions in §§ 264.314(e)(1) and 265.314(f)(1). Therefore, EPA has not gathered and reviewed data on other tests and proposed them for inclusion in today's rule. Instead, EPA decided to require that such demonstrations be made under the already established Part 260 petition process.

D. Spill Cleanups

Numerous commenters recommended that EPA exempt (from the biodegradability and liquids release requirements in the proposed rule) sorbents used in emergency spill cleanups. One commenter, however, suggested exempting only sorbents used for true emergency spills, as contrasted to routine spills at locations where sorbents are (or should be) routinely stockpiled. The basis of this commenter's suggestions was that sorbents that meet the proposed LRT and nonbiodegration criteria are readily available on this market and therefore should be used where a spill can be expected. The commenter, however, also suggested exempting from the LRT the hydrophobic sorbents that are used to clean up oil spills on water, because sorbents currently available for oil spills on water do not meet the proposed criteria.

In today's rule EPA has not provided an exemption for either routine spills or emergencies. Most of the commenters supporting an exemption for emergencies argued that the LRT

duration could cause delays and disrupt proper cleanups. Also, commenters were concerned that many sorbents commonly used in cleanups (e.g., Imbiber Beads® and sorbent pillows) cannot be effectively tested in the LRT, and might not meet EPA's definition of nonbiodegradability (as originally proposed). Today's rule, however, requires the simpler and faster PFT, which is already required and should not cause such delays. Furthermore, Imbiber Beads® and similar materials would generally qualify as nonbiodegradable under today's rule, as they are made of high-molecular-weight synthetic polymers. EPA, therefore, agrees with the commenter that an exemption should not be provided for routine spill situations, where sorbents are stockpiled, since response teams can stockpile and use nonbiodegradable sorbents. Furthermore, EPA believes that a special exemption for "emergency" spill cleanups is inappropriate. In the first place, EPA notes that a wide range of sorbents acceptable under today's rules—including most now commonly in use—are available for emergency spill cleanups. In the second place, it is not clear that the statute provides EPA the authority to exempt certain sorbents from the requirements of § 3004(c)(2), and in any case an exemption for certain (but not all) cleanup situations would be difficult to implement and enforce.

EPA, however, emphasizes that today's rule does not prohibit the use of biodegradable sorbents (e.g., sawdust, corn cobs, etc.) in spill cleanups. In fact, many commenters pointed out that such materials have an important role in cleanups, particularly where sorbed wastes will be recycled or incinerated. The rule, instead, merely prohibits landfilling of such wastes after the cleanup; incineration, recycling, or other treatment, would remain as options. In fact, direct landfilling of these wastes would already be prohibited, in most cases, by the land disposal restrictions. Therefore, today's rule is unlikely to have significant effect on cleanups.

One commenter asked EPA to clarify that contaminated soils cleaned up during a spill response would not be subject to today's rule affecting sorbents. EPA agrees that contaminated soils are not subject to today's rule. The rule covers sorbents added to liquid hazardous wastes for the purpose of solidifying or stabilizing the wastes. For contaminated soils, the situation is different. The soils are not added to wastes to eliminate liquids; rather, the contaminated soil is, in effect, the waste as it was generated. Thus, the soil is not a sorbent, and the question of its biodegradability does not arise. Landfilling of the soil, however, would of course remain subject to the land disposal restrictions.

E. Sorbent Pillows

Commenters on the December 24, 1986 proposal argued that EPA should exempt sorbent pillows used to control spills and leaks, primarily so that LRT testing would not impede such efforts because of the difficulties in getting representative samples and time delays to do the testing. In the June 24, 1987 supplemental notice, EPA proposed to exempt sorbent pillows used to control spills or leaks, including socks, wipes, and rags, in a manner similar to lab packs. Under this proposal, the sorbent pillows would have to be nonbiodegradable, be surrounded by enough additional unused nonbiodegradable sorbent material to sorb any releases, and be placed in certain specified containers of 110 gallon capacity or less. Further, the sorbent pillows would still need to pass the PFT and only sorbent pillows could be placed in the same container.

Since the PFT rather than the LRT is required in today's rule, the exemption for sorbent pillows from the LRT is no longer needed. In fact, the proposed exemption, imposing the lab pack requirements in lieu of the LRT, would not be more restrictive than the approach in today's rule. Imposing the lab pack requirements would now treat sorbent pillows more stringently than other sorbed wastes, would complicate remediations, would add to the waste volume to be disposed, would be vague (how much additional sorbent is enough) and difficult to enforce, and would be generally unnecessary, given the land disposal restrictions requirements. Therefore, the Agency is not providing an exemption for sorbent pillows in today's rule.

Commenters also raised questions about the status of rags and wipes. After reviewing the descriptions and examples given in the legislative history, EPA has concluded that rags and wipes are not the types of materials Congress had in mind and should not be considered to be sorbents in the context of today's rule. In discussing sorbent materials Congress did not include rags and wipes nor materials that rags or wipes are made from in the lists of sorbent materials Congress anticipates EPA will find to be acceptable and unacceptable. The legislative history lists sawdust, municipal waste, shredded paper, and certain vermiculites as unacceptable sorbents, and chemical reagents (cement- or lime-based materials, pozzolanic materials, and thermoplastic or organic binders) and fine-grained materials (e.g., bentonite, montmorillonite, kaolinite, and Fuller's Earth). All of these materials are used to treat large quantities of liquids or to soak up relatively large quantities of spills. Rags and wipes on the other hand are used to clean off soiled or wet surfaces. Thus, today's rule does not change the regulatory treatment under Subtitle C of rags and wipes used in the traditional manner; however, if rags and wipes are used like sorbents, e.g., by putting them in a drum to soak up free-standing liquids, then they need to comply with the nonbiodegradability requirements.

F. Lab Packs and Other Exemptions

The current rules exempt lab packs, very small containers such as ampules, and products that contain liquids for uses other than storage (e.g., batteries) from the liquids in landfills prohibition. These exemptions are consistent with the "minimize liquids in containers" language in the statute, and they are supported by the legislative history. Lab packs are small containers of liquids (typically of one gallon or less), most commonly used for laboratory wastes, that are placed in a drum and surrounded by sufficient sorbent material to sorb the liquids should the containers fail. EPA agrees with the commenters who said the rules should continue to allow the lab pack, ampule, and product container exemptions, with the exception that the rules should be revised to require that lab pack sorbents be nonbiodegradable, for the same reasons that liquids in containers should be sorbed with nonbiodegradable sorbents. Nonbiodegradable sorbents will not degrade, and therefore will not help to produce subsidence and release of liquids when the drums fail. Lab packs are planned management activities in which it is practical to use nonbiodegradable sorbents, and a wide variety of such sorbents are readily available.

G. Waste Analysis and Recordkeeping

In its December 24, 1986 notice, EPA proposed to amend the waste analysis section (§§ 264.13(b)(6) and 265.13(b)(6)) and the recordkeeping sections (§§ 264.73(b)(3) and 265.73(b)(3)) to add references to the specific paragraphs within §§ 264.314 or 265.314 that contain the PFT and the proposed LRT and TOC test requirements. EPA also proposed that a landfill facility's waste analysis plan include procedures that the owner/operator of an offsite landfill will use to

determine whether a generator added a biodegradable sorbent to containerized hazardous waste (§§ 264.13(c)(3) and 265.13(c)(3)).

EPA received numerous comments on these requirements, many addressing the broader issue of who is responsible for waste analysis. In particular, commenters expressed concern that EPA was requiring duplicative testing on the part of landfill owner/operators, and that the responsibility for testing should fall on the generator, the treater, or the sorbent manufacturer rather than the landfill owner/operator. A number of commenters, for example, recommended that EPA require sorbent manufacturers to certify that a sorbent is nonbiodegradable, and that the manifest should be amended to require that the certification be attached.

EPA understands the concerns of the commenters, but it believes that the rule as proposed is sufficiently flexible to accommodate them. Therefore, in today's rule EPA has made only limited changes to the proposal.

First, EPA has eliminated the proposed language added to §§ 264.13(b)(6), 265.13(b)(6), 264.73(b)(3), and 265.73(b)(3) because these already refer to §§ 264.314 or 265.314. It is not necessary to identify the specific paragraphs in these sections that refer to the PFT and the biodegradation standards.

Second, EPA has retained the proposed requirements of §§ 264.13(c)(3) and 265.13(c)(3) for off-site landfills, with slight rewording to clarify that off-site treaters as well as generators may be adding sorbents. These sections ensure that commercial off-site landfill owner/operators specify in their Waste Analysis Plans the procedures they plan to use to assure compliance.

In response to the commenters described above, EPA emphasizes the flexibility of its approach toward biodegradability in today's rule. The rule does not prescribe how a landfill owner/operator must verify that sorbents are nonbiodegradable—only that the Waste Analysis Plan describe the procedures the landfill owner/operator will use to determine compliance. For on-site disposal, this requirement will be easy to meet. For off-site disposal, EPA expects that the landfill operator will generally rely on information provided by the generator or treater. For example, a landfill operator might require generator notification where sorbents have been used, and certifications that the specific sorbent used meets the criteria of §§ 264.314(e) or 265.314(f), along with confirmatory data. EPA generally believes such an approach would be appropriate and sufficient. Consistent with today's rule, however, EPA believes that the specific procedures are best addressed on a site-by-site basis. Today's rule provides the flexibility for such an approach.

H. Free-Standing Liquids

Section 264.314(d) states: "*Containers* holding *free liquids* must not be placed in a landfill unless: (1) All free-standing liquid: (i) Has been removed by decanting, or other methods; (ii) has been mixed with absorbent or solidified so that free-standing liquid is no longer observed; or (iii) has been otherwise eliminated" (emphasis added). The same requirement appears in § 265.314(c). Sections 264.314(c) and 265.314(d) state that "To demonstrate the absence or presence of *free liquids* in either a *containerized* or a bulk waste, the following test must be used: Method 9095 (Paint Filter Liquids Test)" (emphasis added).

In the December 24, 1986, proposal, EPA stated that it saw an inconsistency between these two requirements—on the one hand, containerized wastes containing free liquids could be placed in a landfill, if the liquids were removed (e.g., decanted, § 264.314(d)), and on the other hand, containerized wastes containing free liquids (as defined by the Paint Filter Test) were prohibited from placement in a landfill (§ 264.314(c)). Consequently, EPA proposed to delete §§ 264.314(d)(1) and 265.314(c)(1), making it clear that wastes placed in landfills cannot contain free liquids, as defined by the PFT.

No comments were received on this proposal. However, after reexamining the regulations, EPA has reached the conclusion that they are not inconsistent. Instead, the regulations spell out two different requirements: (1) That landfilled wastes meet the PFT, and (2) that free-standing liquids in containerized wastes be decanted or otherwise eliminated before land disposal. Containerized wastes must meet both requirements. EPA sees no reason to modify or eliminate the independent prohibition on free-standing liquids, on the grounds that it is inconsistent or redundant. In fact, EPA has found the requirement a useful enforcement tool, and has no evidence that the regulated community has been confused by it. Therefore, EPA has decided not to finalize the proposed change.

I. Implementation

As discussed in Section V.A. of this preamble, today's rule is promulgated under the authority of the Hazardous and Solid Waste Amendments (HSWA). Therefore, it will become effective in RCRA-authorized and nonauthorized States six months from the publication of this notice.

Interim status facilities will be subject to today's rule on its effective date. Therefore, these facilities should modify their waste analysis plans and procedures appropriately by that date. On the other hand, under EPA's regulations, RCRA permits generally provide a shield against new regulatory requirements (§ 270.4). Therefore, permitted facilities may continue to operate under their existing permits (and their waste analysis plans) until EPA modifies the permit in accordance with § 270.41 or as part of a 5-year land disposal permit review, or until the permit terminates and a new permit is issued.

V. State Authority

A. Applicability of Rule in Authorized States

Under section 3006 of RCRA, EPA may authorize qualified States to administer and enforce the RCRA program within the State. Following authorization, EPA retains enforcement authority under sections 3008, 3013, and 7003 of RCRA, although authorized States have primary enforcement responsibility. The standards and requirements for authorization are found in 40 CFR part 271.

Prior to the Hazardous and Solid Waste Amendments of 1984 (HSWA), a State with final authorization administered its hazardous waste program in lieu of EPA's administering the Federal program in that State. EPA could not issue permits for any facilities that the State was authorized to permit. When new, more stringent Federal requirements were promulgated, the State was obliged to enact equivalent authority within specified time frames. New Federal requirements did not take effect in an authorized State until the State adopted the requirements as State law and was authorized for the requirements.

In contrast, under RCRA section 3006(g), new requirements imposed by HSWA take effect in authorized States at the same time that they take effect in non-authorized States. EPA is directed to carry out these requirements in authorized States, including the issuance of permits, until the State is granted authorization to do so. While States must still adopt HSWA-based provisions as State law to retain authorization, the HSWA-based requirements apply in authorized States in the interim.

Today's final rule for containerized liquids in landfills is issued under RCRA section 3004(c), which was added by HSWA. These HSWA-based requirements are being added to Table 1 in 40 CFR 271.1(j), which identifies the Federal program requirements that are promulgated pursuant to HSWA and take effect in all States, regardless of their authorization status. As noted above, EPA will implement these HSWA-based sections in today's rule in authorized States until the State programs are modified to adopt these rules and the modification is approved by EPA. Because these requirements are finalized pursuant to HSWA, a State submitting a program modification may apply to receive either interim or final authorization under RCRA section 3006(g)(2) or 3006(b), respectively, on the basis of State requirements that are equivalent or substantially equivalent to EPA's. The procedures and schedule for State program modifications for either interim or final authorization are described in 40 CFR 271.21. The deadline by which the States must modify their programs to adopt today's rule is (July 1, 1994).

B. Effect on State Authorizations

Section 40 CFR 271.21(e)(2) requires States that have final authorization to modify their programs to reflect Federal program changes and to submit the modification to EPA for approval. The deadline by which the State must modify its program to adopt this regulation is determined by the promulgation date in accordance with 40 CFR 271.21(e). These deadlines can be extended in certain cases (40 CFR 271.21(e)(3)). Once EPA approves the modification, the State requirements become Subtitle C RCRA requirements.

Authorized States are only required to modify their programs when EPA promulgates Federal regulations that are more stringent or broader in scope than the existing Federal regulations. For Federal program changes that are less stringent or reduce the scope of the Federal program, States are not required to modify their programs. This is a result of RCRA section 3009, which allows States to impose regulations in addition to those in the Federal program. EPA has determined that today's containerized liquids in landfills rule is more stringent than the current Federal regulations. Therefore, authorized States are required to modify their programs if needed to adopt regulations that are equivalent or substantially equivalent to today rule.

States with authorized RCRA programs may already have requirements similar to those in today's rule. These State regulations have not been assessed against the Federal regulations being finalized today to determine whether they meet the tests for authorization. Thus, a State is not authorized to implement these requirements in lieu of EPA until the State program modification is approved. Of course, States with existing standards may continue to administer and enforce their standards as a matter of State law. In implementing the Federal program, EPA will work with States under agreements to minimize duplication of efforts. In many cases, EPA will be able to defer to the States in their efforts to implement their programs rather than take separate actions under Federal authority.

States that submit official applications for final authorization less than 12 months after the effective date of these regulations are not required to include standards equivalent to these regulations in their application. States that submit official applications for final authorization 12 months or more after the effective date of these regulations must include standards equivalent to these regulations in their application. The requirements a State must meet when submitting its final authorization application are set forth in 40 CFR 271.3.

VI. Regulatory Requirements

A. Economic Impact Analysis

Executive Order 12291 (Section 3(b)) requires regulatory agencies to prepare Regulatory Impact Analyses for all "major" rules. Today's rule is not a major rule because it will not result in: an annual effect on the economy of $100 million or more; a major increase in costs or prices for consumers, individual industries, Federal, State, and local government agencies, or geographic regions; or significant adverse effects on competition, employment, investment, productivity, innovation, or international trade. Therefore, the Agency has not prepared a Regulatory Impact Analysis for today's rule.

EPA did, however, review costs associated with this rule in "Economic Impact Analysis of Liquids in Landfills Rule Regarding Containerized Sorbents." The total additional annualized costs of implementing this rule are estimated to be under $1 million. The implementation costs are minimal because hazardous waste landfills must already use the Paint Filter Test (for all wastes, not just sorbed wastes), and most sorbents currently in use need not be tested for biodegradability because they are clearly identified as acceptable on the nonbiodegradables lists in the rule or as unacceptable on the biodegradables list provided as guidance in the preamble. The rest need be tested only once per sorbent type for nonbiodegradability (it is the sorbents that are tested for biodegradation, not the wastes). For those sorbents that are currently used that are unacceptable, there are readily available sorbents of comparable costs and efficiencies so that the economic impact of such substitutions are minimal.

This rule has been reviewed by the Office of Management and Budget in accordance with Executive Order 12291.

B. Regulatory Flexibility Act

The Regulatory Flexibility Act of 1980 (5 U.S.C. 601 et seq.) requires Federal regulatory agencies to prepare a Regulatory Flexibility Analysis (RFA) for all regulations that have "a significant economic impact on a substantial number of small entities." Today's rule, as EPA's economic analysis indicates, will involve only a trivial increase in costs for regulated industry. Therefore, EPA certifies that today's regulation will not have a significant economic impact on a substantial number of small entities. As a result, no Regulatory Flexibility Analysis is needed.

C. Paperwork Reduction Act

The information collection requirements in this rule have been approved by the Office of Management and Budget (OMB) under the *Paperwork Reduction Act*, 44 U.S.C. 3501 *et seq.* and have been assigned control number 2050–0125.

The public reporting burden for this collection of information is estimated to average 3.6 hours per response for the first year and 0.8 hours per response in subsequent years. This burden includes time for reviewing the regulations, searching existing data sources, gathering and maintaining the required data, and completing and reviewing the collection of information.

Send comments regarding the burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Chief, Information Policy Branch, PM–223Y, U.S. Environmental Protection Agency, 401 M Street, SW, Washington, DC 20460 and to the Office of Information and Regulatory Affairs, Office of Management and Budget, Washington, DC 20503, marked "Attention: Jonathan Gledhill".

VII. Supporting Documents

The following document has been prepared in support of this rulemaking and placed in docket F-92-CLLF-FFFFF.

"Economic Impact Analysis of Liquids in Landfills Rule Regarding Containerized Sorbents," EPA, October 23, 1992.

List of Subjects

40 CFR Part 260

Administrative practice and procedure, Confidential business information, Hazardous waste.

40 CFR Part 264

Air pollution control, Hazardous waste, Insurance, Packaging and containers, Reporting and recordkeeping requirements, Security measures, Surety bonds.

40 CFR Part 265

Air pollution control, Hazardous waste, Insurance, Packaging and containers, Reporting and recordkeeping requirements, Security measures, Surety bonds, Water supply.

40 CFR Part 271

Administrative practice and procedure, Confidential business information, Hazardous materials transportation, Hazardous waste, Indian lands, Intergovernmental relations, Penalties, Reporting and recordkeeping requirements, Water pollution control, Water supply.

Dated: October 30, 1992.

William K. Reilly,

Administrator.

For the reasons set forth in the preamble, 40 CFR parts 260, 264, 265, and 271 are amended as follows.

PART 260—HAZARDOUS WASTE MANAGEMENT SYSTEM: GENERAL

1. The authority citation for part 260 continues to read as follows:

Authority: 42 U.S.C. 6905, 6912(a), 6921–6927, 6930, 6934, 6935, 6937, 6938, 6939, and 6974.

2. Section 260.10 is amended by adding the definition of "sorbent" in alphabetical order, to read as follows:

§ 260.10 Definitions

* * * * *

Sorbent means a material that is used to soak up free liquids by either adsorption or absorption, or both. *Sorb* means to either adsorb or absorb, or both.

* * * * *

PART 264—STANDARDS FOR OWNERS AND OPERATORS OF HAZARDOUS WASTE TREATMENT, STORAGE, AND DISPOSAL FACILITIES

1. The authority citation for part 264 continues to read as follows:

Authority: 42 U.S.C. 6905, 6912(a), 6924, and 6925.

2. Section 264.13 is amended by adding paragraph (c)(3) to read as follows:

§ 264.13 General waste analysis.

* * * * *

(c) * * *

(3) The procedures that the owner or operator of an off-site landfill receiving containerized hazardous waste will use to determine whether a hazardous waste generator or treater has added a biodegradable sorbent to the waste in the container.

* * * * *

3. Section 264.314 is amended by redesignating paragraph (e) as (f), revising paragraphs (a)(2), (b), and (d)(1)(ii), and adding new paragraph (e) to read as follows:

§ 264.314 Special requirements for bulk and containerized liquids.

(a) * * *

(2) Before disposal, the liquid waste or waste containing free liquids is treated or stabilized, chemically or physically (e.g., by mixing with a sorbent solid), so that free liquids are no longer present.

(b) Effective May 8, 1985, the placement of bulk or non-containerized liquid hazardous waste or hazardous waste containing free liquids (whether or not sorbents have been added) in any landfill is prohibited.

* * * * *

(d) * * *

(1) * * *

(ii) has been mixed with sorbent or solidified so that free-standing liquid is no longer observed; or

* * * * *

(e) Sorbents used to treat free liquids to be disposed of in landfills must be nonbiodegradable. Nonbiodegradable sorbents are: materials listed or described in paragraph (e)(1) of this section; materials that pass one of the tests in paragraph (e)(2) of this section; or materials that are determined by EPA to be nonbiodegradable through the part 260 petition process.

(1) Nonbiodegradable sorbents. (i) Inorganic minerals, other inorganic materials, and elemental carbon (e.g., aluminosilicates, clays, smectites, Fuller's earth, bentonite, calcium bentonite, montmorillonite, calcined montmorillonite, kaolinite, micas (illite), vermiculites, zeolites; calcium carbonate (organic free limestone); oxides/hydroxides, alumina, lime, silica (sand); diatomaceous earth; perlite (volcanic glass); expanded volcanic rock; volcanic ash; cement kiln dust; fly ash; rice hull ash; activated charcoal/activated carbon); or

(ii) High molecular weight synthetic polymers (e.g., polyethylene, high density polyethylene (HDPE), polypropylene, polystyrene, polyurethane, polyacrylate, polynorborene, polyisobutylene, ground synthetic rubber, cross-linked allylstyrene and tertiary butyl copolymers). This does not include polymers derived from biological material or polymers specifically designed to be degradable; or

(iii) Mixtures of these nonbiodegradable materials.

(2) Tests for nonbiodegradable sorbents. (i) The sorbent material is determined to be nonbiodegradable under ASTM Method G21–70 (1984a)—Standard Practice for Determining Resistance of Synthetic Polymer Materials to Fungi; or

(ii) The sorbent material is determined to be nonbiodegradable under ASTM Method G22–76 (1984b)—Standard Practice for Determining Resistance of Plastics to Bacteria.

* * * * *

4. Section 264.316 is amended by revising paragraphs (b) and (c) to read as follows:

§ 264.316 Disposal of small containers of hazardous waste in overpacked drums (lab packs).

* * * * *

(b) The inside containers must be overpacked in an open head DOT-specification metal shipping container (49 CFR parts 178 and 179) of no more than 416-liter (110 gallon) capacity and surrounded by, at a minimum, a sufficient quantity of sorbent material, determined to be nonbiodegradable in accordance with § 264.314(e), to completely sorb all of the liquid contents of the inside containers. The metal outer container must be full after it has been packed with inside containers and sorbent material.

(c) The sorbent material used must not be capable of reacting dangerously with, being decomposed by, or being ignited by the contents of the inside containers, in accordance with § 264.17(b).

* * * * *

PART 265—INTERIM STATUS STANDARDS FOR OWNERS AND OPERATORS OF HAZARDOUS WASTE TREATMENT, STORAGE, AND DISPOSAL FACILITIES

1. The authority citation for Part 265 continues to read as follows:

Authority: 42 U.S.C. 6905, 6912(a), 6924, 6925, 6935, and 6936.

2. Section 265.13 is amended by adding paragraph (c)(3) to read as follows:

§ 265.13 General waste analysis.

* * * * *

(c) * * *

(3) The procedures that the owner or operator of an off-site landfill receiving containerized hazardous waste will use to determine whether a hazardous waste generator or treater has added a biodegradable sorbent to the waste in the container.

* * * * *

3. Section 265.314 is amended by redesignating paragraph (f) as (g), revising paragraphs (a)(2), (b), and (c)(1)(ii), and adding new paragraph (f) to read as follows:

§ 265.314 Special requirements for bulk and containerized liquids.

(a) * * *

(2) Before disposal, the liquid waste or waste containing free liquids is treated or stabilized, chemically or physically (e.g., by mixing with a sorbent solid), so that free liquids are no longer present.

(b) Effective May 8, 1985, the placement of bulk or non-containerized liquid hazardous waste or hazardous waste containing free liquids (whether or not sorbents have been added) in any landfill is prohibited.

(c) * * *

(1) * * *

(ii) has been mixed with sorbent or solidified so that free-standing liquid is no longer observed; or

* * * * *

(f) Sorbents used to treat free liquids to be disposed of in landfills must be nonbiodegradable. Nonbiodegradable sorbents are: materials listed or described in paragraph (f)(1) of this section; materials that pass one of the tests in paragraph (f)(2) of this section; or materials that are determined by EPA to be nonbiodegradable through the Part 260 petition process.

(1) Nonbiodegradable sorbents. (i) Inorganic minerals, other inorganic materials, and elemental carbon (e.g., aluminosilicates, clays, smectites, Fuller's earth, bentonite, calcium bentonite, montmorillonite, calcined montmorillonite, kaolinite, micas (illite), vermiculites, zeolites; calcium carbonate (organic free limestone); oxides/hydroxides, alumina, lime, silica (sand), diatomaceous earth; perlite (volcanic glass); expanded volcanic rock; volcanic ash; cement kiln dust; fly ash; rice hull ash; activated charcoal/activated carbon); or

(ii) High molecular weight synthetic polymers (e.g., polyethylene, high density polyethylene (HDPE), polypropylene, polystyrene, polyurethane, polyacrylate, polynorborene, polysobutylene, ground synthetic rubber, cross-linked allylstyrene and tertiary butyl copolymers). This does not include polymers derived from biological material or polymers specifically designed to be degradable; or

(iii) Mixtures of these nonbiodegradable materials.

(2) Tests for nonbiodegradable sorbents. (i) The sorbent material is determined to be nonbiodegradable under ASTM Method G21–70 (1984a)—Standard Practice for Determining Resistance of Synthetic Polymer Materials to Fungi; or

(ii) The sorbent material is determined to be nonbiodegradable under ASTM Method G22–76 (1984b)—Standard Practice for Determining Resistance of Plastics to Bacteria.

* * * * *

4. Section 265.316 is amended by revising paragraphs (b) and (c) to read as follows:

§ 265.316 Disposal of small containers of hazardous waste in overpacked drums (lab packs).

* * * * *

(b) The inside containers must be overpacked in an open head DOT-specification metal shipping container (49 CFR parts 178 and 179) of no more than 416-liter (110 gallon) capacity and surrounded by, at a minimum, a sufficient quantity of sorbent material, determined to be nonbiodegradable in accordance with § 265.314(f), to completely sorb all of the liquid contents of the inside containers. The metal outer container must be full after it has been packed with inside containers and sorbent material.

(c) The sorbent material used must not be capable of reacting dangerously with, being decomposed by, or being ignited by the contents of the inside container's in accordance with § 265.17(b).

* * * * *

PART 271—REQUIREMENTS FOR AUTHORIZATION OF STATE HAZARDOUS WASTE PROGRAMS

1. The authority citation for Part 271 continues to read as follows:

Authority: 42 U.S.C. 6905, 6912(a) and 6926.

2. Section 271.1(j) is amended by adding the following entry to Table 1 in chronological order by date of publication:

§ 271.1 Purpose and scope.

* * * * *

TABLE 1.—REGULATIONS IMPLEMENTING THE HAZARDOUS AND SOLID WASTE AMENDMENTS OF 1984

Promulgation date	Title of regulation	Federal Register reference	Effective date
*	*	*	*
Nov. 18, 1992	Containerized Liquids in Landfills	57 FR [Insert Federal Register page numbers]	May 18, 1992.

[FR Doc. 92–27289 Filed 11–17–92; 8:45 am]
BILLING CODE 6560–50–M