

comparable products or intermediates made from raw materials.

Some recycling processes may consist of multiple steps, which may occur at separate facilities. In some cases, each processing step will yield a valuable product, such as when a metal-bearing sludge is processed to reclaim a precious metal, and is then put through another process to reclaim a different mineral. When each step in the process yields a valuable product that is salable or usable in that form, that recycling process would meet this proposed criterion. If, however, a particular step in a recycling process does not yield a separate salable or ready-for-use product, that process step would typically need to add value to the material in some way in order to satisfy this criterion. Thus, for example, if the first step in reclaiming a metal-bearing secondary material results in a fused or agglomerated material, a second step consisting of particle size reduction may be necessary to facilitate the next reclamation step. Although reducing the particle size in this case would not by itself produce a valuable product, it may add value to the recycling process and is consistent with the intent of this criterion.

How Does This Criterion Compare to Existing Guidance?

This proposed criterion distills several of the questions posed by the 1989 legitimacy guidance. In that guidance, the value of recycled products sold to third parties was addressed by posing the questions, "Is there a guaranteed market for the end product?" and "Is there a contract in place to purchase the 'product' ostensibly produced from the hazardous secondary materials?" The guidance addressed recycled products used by the recycler or the generator as process ingredients by posing the questions " * * * is the product used by the (recycler)? The generator? Is there a batch tolling agreement?" The "usefulness" of a recycled material was addressed by the questions: "Is the (recycled) product a recognized commodity?" and "Are there industry-recognized quality specifications for the product?" The language we are proposing today attempts to reflect these concepts in a concrete manner by, for example, making it clear that one needs to assess not only whether there are industry-recognized quality specifications, but also that the recycled product would need to meet or exceed any applicable specifications to be considered legitimate recycling. We believe that today's proposed Criterion #3 captures the essence of the original guidance.

The 1989 guidance posed additional questions aimed at distinguishing recycling operations that involve direct use or reuse of secondary materials from recycling operations that involve reclamation. These concepts, however, are not particularly relevant to distinguishing legitimate from sham recycling, and we therefore did not attempt to capture them in today's proposed legitimacy criteria.

4. Criterion #4: "The product of the recycling process:

- (i) Does not contain significant amounts of hazardous constituents that are not found in analogous products; and
- (ii) Does not contain significantly elevated levels of any hazardous constituents that are found in analogous products; and
- (iii) Does not exhibit a hazardous characteristic that analogous products do not exhibit."

This proposed criterion addresses "toxics along for the ride" in products made from recycled secondary materials. Put another way, the question posed by this criterion is whether hazardous constituents are "discarded" by being incorporated into a product made from hazardous secondary materials, which would indicate sham recycling.¹⁵

In evaluating this aspect of legitimacy, a recycler would ordinarily compare the recycled product to an analogous product made with raw materials. Thus, if a recycling process produced (for example) paint, the levels of hazardous constituents in the paint could be compared with the levels of the same constituents found in similar paint made from raw materials.

Although this criterion focuses on hazardous constituents that may be found in the end-products of recycling processes, a recycler could choose to evaluate this criterion indirectly by comparing the hazardous constituents in the secondary material feedstock with those in an analogous raw material feedstock. If the secondary material feedstock does not contain higher concentrations of hazardous constituents than the raw material feedstock, then the end product of the recycling process should not contain excess hazardous constituents "along for the ride." This feedstock comparison may be simpler than the product comparison when the recycler knows the secondary material is very similar in profile to the raw material. It may also be more practical than the product comparison when there is no analogous

product, or when production of the recycled product has not yet begun.

Today's proposed criterion #4 identifies three specific tests for evaluating whether or not this criterion is met. This criterion is designed to determine whether or not unacceptable amounts of toxic constituents are passed through to recycled products. The first test specifies that where analogous products made with raw materials do not contain hazardous constituents, the recycled product should not contain significant amounts of any hazardous constituent. For example, if paint made from reclaimed solvent contains significant amounts of cadmium, while the same type of paint made from raw materials does not contain cadmium, it would likely indicate that the cadmium serves no useful purpose and is being passed through the recycling process and discarded.

The second test addresses situations where an analogous product does contain some hazardous constituents, and asks whether those hazardous constituents are found in the recycled product at levels significantly higher than in the analogous product. This test ensures that levels of hazardous constituents in recycled products are comparable to levels of the same constituents in analogous products made from raw materials. For example, if a lead-bearing hazardous sludge was used as an ingredient in making ceramic tiles, and the amount of lead in the tiles was significantly higher than the lead level found in similar tiles made of raw materials, discard would likely be indicated. As with the previous test, the comparison could be made product-to-product, or could be made by comparing the constituent levels in the secondary material with those in the analogous raw material.

The third test under this criterion is whether the recycled product exhibits a hazardous characteristic that analogous products do not exhibit. This test ensures that recycled products do not exhibit the characteristics of toxicity, ignitability, corrosivity, or reactivity when the analogous products do not.¹⁶ The Agency believes that most issues associated with "toxics along for the ride" will involve the presence of toxic constituents, which are addressed under the first two tests discussed above. We believe that there are few, if any, cases where the first two tests described above would be met for a recycled product, but the product would nevertheless

¹⁵ Hazardous constituents are defined in 40 CFR part 261, Appendix VIII.

¹⁶ These characteristics are defined in 40 CFR Part 261, Subpart C.