

## “CLOSED LOOP” RECLAMATION EXCLUSION Applicability and Conditions

### What Is “Closed Loop” Reclamation?

A “closed loop” reclamation process is excluded from RCRA regulation entirely, and the materials in such a process are considered not yet to be wastes. However, to be considered “closed loop,” a recycling process must meet quite a few conditions that are not apparent simply from its name. The regulatory definition of closed loop recycling is found at 40 CFR 261.4(a)(8). It states:

“(8) Secondary materials that are reclaimed and returned to the original process or processes in which they were generated where they are reused in the production process provided:

(i) Only tank storage is involved, and the entire process through completion of reclamation is closed by being entirely connected with pipes or other comparable enclosed means of conveyance;

(ii) Reclamation does not involve controlled flame combustion (such as occurs in boilers, industrial furnaces, or incinerators);

(iii) The secondary materials are never accumulated in such tanks for over twelve months without being reclaimed; and

(iv) The reclaimed material is not used to produce a fuel, or used to produce products that are used in a manner constituting disposal.”

### Already Excluded

The exemption is intended to exclude reclaimed materials. It should be noted that some materials are not considered to be wastes when reclaimed under any circumstances. For such materials, the closed loop recycling process exclusion is not necessary.

### Conditions for Exclusion

There are several conditions that must be met for the “closed-loop” exclusion:

- Return to original process: The material must be returned, after reclamation, to the original process from which it was generated. Note: If secondary materials are returned to the original generating process as a substitute for raw material feedstocks without first being reclaimed these are separately excluded under the “reuse” provisions of 40 CFR 261.2(e)(1).
- Production process only: It is available only to production processes (i.e., those which produce a product). Support processes (such as use of solvent to clean equipment or repair of production machinery) are not eligible for this exclusion. Note, however: EPA does consider solvents used in dry cleaning to be generated from a primary production process, since they are the “used as the basic raw material in the process [of dry cleaning].” [51 FR 25442, July 14, 1986.]

## “Closed Loop” Reclamation Exclusion, continued

- **Tank storage:** The process must involve only tank storage. If materials are removed to containers (i.e., portable storage devices such as drums) at any point in the process, then it is no longer closed loop.
- **Closed:** The process must be “closed by being entirely connected with pipes or other comparable enclosed means of conveyance.”

a distillation process to separate the product from the solvent. After distillation the recovered solvent is piped to a holding tank, where it is fed back into the chemical synthesizing process.

While it appears that a spent material is being reclaimed, because it is an integral part of the primary manufacturing process, this qualifies for the “closed loop” exclusion, and the spent solvents are not solid waste.

## Taboos

Finally, the three “recycling taboos” are not allowed:

- **Burning:** The reclamation process must not involve combustion (i.e., burning) and the reclaimed material must not be used to produce a fuel.
- **Speculative accumulation:** The materials must never be stored within the closed loop process for more than twelve months.
- **Use constituting disposal:** The reclaimed material must not be used to produce products that are used in a manner constituting disposal.

2. A company machines metal parts and then uses organic solvent to degrease them. The solvent becomes dirty and no longer usable, so it is piped to a holding tank which feeds a still. The solvent is distilled, then sent via pipe back to the degreaser.

The solvent is solid waste because degreasing is not a “production process”, and the solvent is a spent material being reclaimed as those terms are defined by 261.1(c). Spent materials which are recycled by reclamation are solid waste until reclaimed as provided by 261.2(c) and 261.3(c)(2)(i).

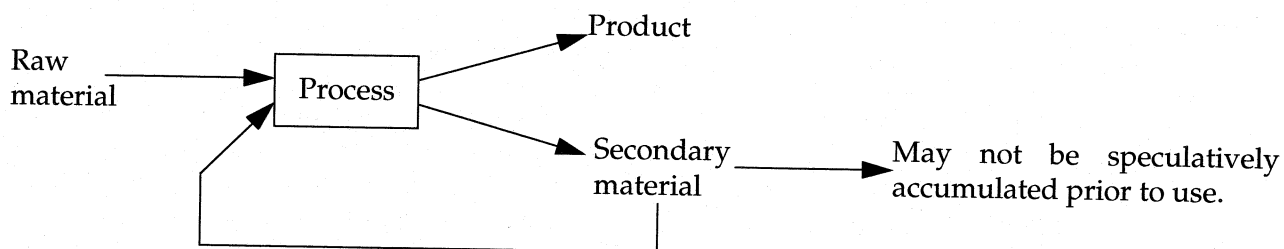
## Examples

1. A pharmaceutical manufacturer uses a blend of organic solvents as a synthesis medium in a high-purity chemical manufacturing process. As part of the manufacturing process, the finished chemical product must be removed from the solvent. The spent solvent blend is piped to

## REUSE RELIEF AND CLOSED LOOP EXCLUSION COMPARED

At a glance both 40 CFR 261.2(e)(1)(iii) "Returned to the Process" and 40 CFR 261.4(a)(8) "Closed Loop Reclaiming" seem to address the same situation, namely placing

material that is generated by a process back into that process. However, there are some important differences. Lets take a look:

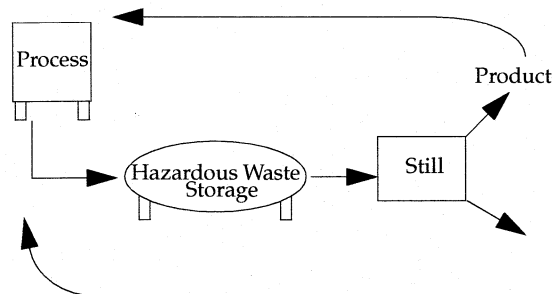


### Returned to the Original Process

At 40 CFR 261.2(e)(1)(iii) the regulations state that materials are not solid waste if they are, "Returned to the original process from which they are generated without *first* being reclaimed" [emphasis added]. Essentially the materials that I return to the process are in place of the feedstock materials I would normally use and are returned to the process "as is" i.e no prior reclamation.

**Reuse Relief and Closed Loop Exclusion Compared, continued**

**“Closed Loop” Reclamation Exclusion**



Under this exclusion, as stated, the following conditions apply:

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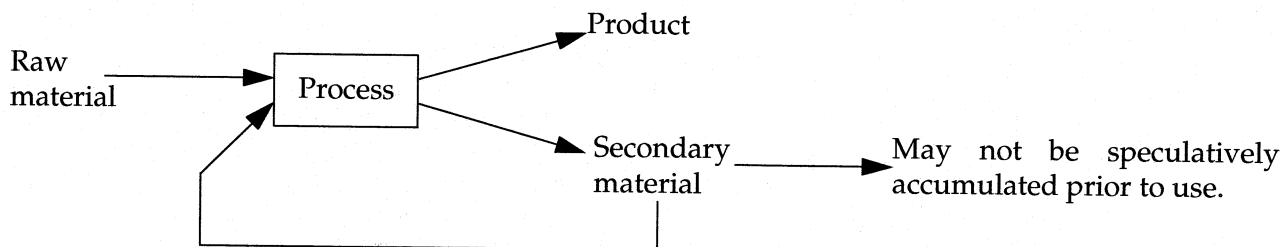
Closed: The process must be “closed by being entirely connected with pipes or other comparable enclosed means of conveyance.”

The difference between this exclusion and the Reuse Relief is that under the exclusion the material is being returned to the original production process *after* being reclaimed. In this case the material is not being returned to the process “as is.” [emphasis added]

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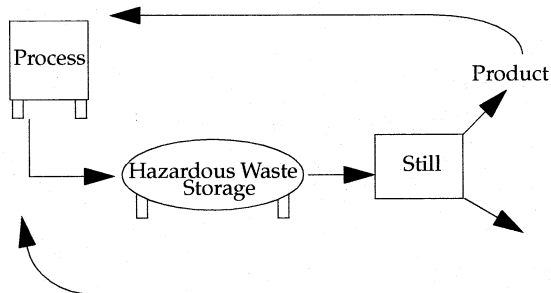


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