



## TOXIC CHEMICAL RELEASE INVENTORY Data Quality Checks to Prevent Common Reporting Errors on Form R

This document supplements Appendix C, "Common Errors in Completing Form R Reports", of the Toxic Chemical Release Inventory Form and Instructions. Use of this document may prevent the generation of Notices of Technical Errors (NOTEs) by U.S. EPA for incorrectly completed Form Rs and improve the quality of the data made available to the public. Information for all sections of Form R is not provided as only the common errors relative to the 1991 reporting year are discussed in this document.

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## **Section 1. Toxic Chemical Identity**

Reporting CAS numbers in Section 1.1 Beginning with the 1991 reporting year, EPA has assigned alphanumeric category codes to the twenty chemical categories for the purposes of reporting in Section 1.1, the CAS number field. If you are completing a Form R for a chemical category, you must provide the appropriate code for that category in Section 1.1. The category codes can be found in the instructions for Section 1.1; Table II, "Section 313 Toxic Chemical List;" and Appendix B, "Reporting Codes for EPA Form R."

## **Section 6. Transfers of the Toxic Chemical in Wastes to Off-Site Locations**

Reporting transfers to POTWs. When all quantities of a listed mineral acid are transferred to a POTW after being neutralized to a pH of 6 or greater, the quantity transferred should be reported as zero. It is incorrect to enter "NA" (Not Applicable), in such a situation.

Reporting other off-site transfers. Beginning with the 1991 reporting year, transfers off-site for the purposes of recycling or combustion for energy recovery are to be reported in Section 6.2. Any quantities reported in Sections 8.5, 8.3, 8.7, and 8.1 as sent off-site for recycling, energy recovery, treatment, or disposal, respectively, must also be reported in Section 6.2 along with the receiving location and appropriate off-site activity code.

## **Section 7. On-Site Waste Treatment, Energy Recovery, and Recycling**

Reporting on-site energy recovery methods in Section 7B. When a quantity is reported in Section 8.2 as combusted for energy recovery on-site, the type of energy recovery system used must be reported in Section 7B, and vice versa.

Reporting on-site recycling methods in Section 7C. When a quantity is reported in Section 8.4 as recycled on-site, the type of recovery method must be reported in Section 7C, and vice versa.

## **Section 8. Source Reduction and Recycling Activities**

- This section is mandatory: under no circumstances should a reporting facility leave Section 8 entirely blank, even if the facility does not engage in source reduction or recycling activities.

- It is incorrect to enter "NA" (Not Applicable), in columns A, B, C, or D. Entering "NA" in column A was allowable for the 1991 reporting year only. Zero (0) can be used in columns A, B, C, and D to indicate that the reported toxic chemical will not undergo a specific activity such as treatment.

- Columns C and D, the future year projections for questions 8.1 through 8.7, must be completed. EPA expects a reasonable estimate for the future year projections. Zero (0) can be used in columns C and D to indicate that the manufacture, processing, or

otherwise use of the chemical will be discontinued; in such cases, columns C and D for Sections 8.1 through 8.7 must contain all zeroes.

- It is incorrect to use range codes to report quantities in Section 8. Range codes can be used only in Sections 5 and 6 of Form R.

- It is incorrect to use the codes for reporting the maximum amount of the reported toxic chemical on-site in Section 4 to report quantities in Section 8.

- Quantities reported in Sections 8.1 through 8.7 must be mutually exclusive and additive. This means that quantities of the reported toxic chemical should not be double-counted in Sections 8.1 through 8.7. Some facilities submitting Form Rs for the 1991 reporting year have reported the same quantity of a toxic chemical as both treated and recycled on-site.

- Some double-counting errors have been due to confusion over the differences in how on-site treatment of a toxic chemical is reported in Section 7A as compared to Section 8. In Section 7A, information on the treatment of waste streams containing the toxic chemical is reported, along with the percent efficiency in terms of destruction or removal of the toxic chemical from each waste stream. In Section 8, only the quantity of the toxic chemical actually destroyed through the treatment processes reported in Section 7A is reported in Section 8.6 to avoid double-counting within Sections 8.1 through 8.7.

For example, a facility submits a Form R for nickel compounds. The facility treats wastewaters containing the nickel compounds and removes the nickel with a 99 percent efficiency. The facility then further reclaims the nickel and makes it available for continued use in its manufacturing processes. In completing Form R, the facility should report the treatment of the wastewaters with a 99 percent efficiency for the removal of the nickel in Section 7A, the method of recovery for the nickel in Section 7C, and only the amount of nickel made available for further use after reclamation as a quantity recycled on-site in Section 8.4. Any quantities released or disposed, including releases from either the treatment or recycling activities, should be reported in Section 8.1. The facility should not report the quantity of nickel removed from the wastewaters as a quantity treated on-site in Section 8.6 because reporting the same quantity as both treated and recycled on-site doubles the quantity of nickel that was treated and subsequently recycled on-site.

- Quantities reported in Sections 8.1 through 8.7 must not be reported in Section 8.8 and vice versa.

For example, 10,000 pounds of a toxic chemical is spilled due to non-production related activities during the reporting year. Of the total 10,000 pounds, 2,500 pounds volatilized and were released directly to the air and the remaining 7,500 pounds were collected and sent off-site for treatment. The total 10,000 pounds would be reported in Section 8.8. The 2,500 pound release to air would be reported in Section 5.1 as a fugitive emission, but it would not be reported in Section 8.1. The 7,500 pound transferred off-site for treatment would be reported in Section 6.2, but it would not be reported in Section 8.7.

- Any time a reported toxic chemical is contained in a waste that is identified under RCRA, and the waste is associated with routine production-related activities and

is recycled, combusted for energy recovery, treated, or disposed either on- or off-site, that quantity of the toxic chemical must be included in the quantities reported in Sections 8.1 through 8.7.

Reporting quantities in Section 8.1, "Quantity released." Facilities have incorrectly completed this element in several ways. Often, quantities of the reported toxic chemical that are released or disposed on-site and reported in Section 5 of the form are not reported in Section 8.1. Also, quantities of the reported toxic chemical transferred off-site for the purposes of disposal are reported in Section 6.2 but not in Section 8.1.

To correctly report in Section 8.1, a facility must include any of the following quantities of the reported toxic chemical that are released directly to the environment, disposed of on-site, or sent off-site for disposal that are not associated with a catastrophic event or non-production related activity:

<i>Quantities released directly to the environment and disposed on-site</i>	<i>(Section)</i>
• Fugitive or non-point air emissions	5.1
• Stack or point air emissions	5.2
• Discharges to receiving streams or water bodies	5.3
• Underground injections on-site	5.4
• Release to land on-site: landfill	5.5.1
land treatment/application farming	5.5.2
surface impoundment	5.5.3
other disposal	5.5.4

Include in these quantities any direct releases from any treatment, recycling, or energy recovery activities.

#### *Quantities disposed off-site*

These are quantities that are reported in Section 6.2 and associated with the following codes:

M10 Storage Only;  
M71 Underground Injection;  
M72 Landfill/Disposal Surface Impoundment;  
M73 Land Treatment;  
M79 Other Land Disposal;  
M90 Other Off-Site Management;  
M94 Transfer to Waste Broker--Disposal; and  
M99 Unknown.

Do not include in Section 8.1 any of the following quantities:

- Direct releases or fugitive emissions from remedial actions, catastrophic events, or one-time events not associated with production processes (these quantities are reported in Section 8.8 only).

- Quantities of the toxic chemical associated with non-production related activities, such as catastrophic releases and remedial actions, as well as other one-time events not associated with routine production practices that were disposed on-site or sent off-site for disposal (these quantities are reported in Section 8.8 only).

Reporting quantities in Section 8.2, "Quantity used for energy recovery on-site."

A quantity must be reported in Section 8.2 for the current (reporting) year when a method of on-site energy recovery is reported in Section 7B, and vice versa. An error facilities make when completing Form R is to report the methods of energy recovery used on-site in Section 7B but not report the total quantity associated with those methods. Another error is to report a quantity in this section if the combustion of the toxic chemical took place in a system that did not recover energy (e.g. an incinerator). It is also incorrect to report a quantity of the toxic chemical as combusted for energy recovery if the toxic chemical does not have a BTU (British Thermal Unit) value high enough to sustain combustion. Examples of toxic chemicals that do not have heating values high enough to sustain combustion include metals, CFCs, and halons.

Do not include in Section 8.2 any quantities of the toxic chemical associated with non-production related activities, such as catastrophic releases and remedial actions, as well as other one-time events not associated with routine production practices, that were combusted for energy recovery on-site.

Reporting quantities in Section 8.3, "Quantity used for energy recovery off-site."

As in Section 8.2, it is an error to report a quantity in this section if the off-site combustion of the toxic chemical took place in a system that did not recover energy (e.g. an incinerator). It is also incorrect to report a quantity of the toxic chemical as sent off-site for the purposes of energy recovery if the toxic chemical does not have a BTU (British Thermal Unit) value high enough to sustain combustion. Examples of toxic chemicals that do not have heating values high enough to sustain combustion include metals, CFCs, and halons. It is an error to not include quantities in Section 8.3 that are reported in Section 6.2 as transferred off-site for the purposes of combustion for energy recovery using the following codes:

- M56 Energy Recovery; and
- M92 Transfer to Waste Broker--Energy Recovery.

Do not include in Section 8.3 any quantities of the toxic chemical associated with non-production related activities such as catastrophic releases and remedial actions, as well as other one-time events not associated with routine production practices, that were sent off-site for the purposes of combustion for energy recovery (these quantities are reported in Section 8.8 only).

Reporting quantities in Section 8.4, "Quantity recycled on-site." A quantity must be reported in Section 8.4 for the current (reporting) year when a method of on-site

recycling is reported in Section 7C; and vice versa. An error facilities make when completing Form R is to report the methods of recycling used on-site in Section 7C but not report the total quantity recovered using those methods. In addition, only the amount of the chemical that was actually recovered is to be reported in Section 8.4.

Do not include in Section 8.4 any quantities of the toxic chemical associated with non-production related activities such as catastrophic releases and remedial actions, as well as other one-time events not associated with routine production practices, that were recycled on-site.

Reporting quantities in Section 8.5, "Quantity recycled off-site." It is an error to not include quantities in Section 8.3 that are reported in Section 6.2 as transferred off-site for the purposes of recycling using the following codes:

- M20 Organics recovery;
- M24 Metals recovery;
- M26 Other recovery;
- M28 Acid regeneration; and
- M93 Transfer to Waste Broker--Recycling.

Do not report in Section 8.5 the quantity actually recycled at the off-site facility -- facilities should report the quantity that was sent off-site for the purposes of recycling. Do not include in Section 8.5 any quantities of the toxic chemical associated with non-production related activities such as catastrophic releases and remedial actions, as well as other one-time events not associated with routine production practices, that were sent off-site for the purposes of recycling (these quantities are reported in Section 8.8 only).

Reporting quantities in Section 8.6, "Quantity treated on-site." Quantities may not always have to be reported in Section 8.6 when Section 7A is completed. This is because the information reported in Sections 7 and 8 is different; information on how waste streams containing the reported toxic chemical are treated is reported in Section 7, while the quantity of the toxic chemical actually destroyed as a result of on-site treatment is reported in Section 8.6. If a quantity is reported in Section 8.6, Section 7A must be completed. This may result in apparent discrepancies between Sections 7 and 8. For example, a facility may treat wastewaters containing a toxic chemical by removing the toxic chemical and then disposing of it on-site. The treatment of the wastewaters would be reported in Section 7A, with an efficiency estimate based on the amount of the toxic chemical removed from the wastewaters. As the toxic chemical undergoes treatment and then disposal, the facility would report only the amount of the toxic chemical actually destroyed during treatment in Section 8.6 and the amount ultimately disposed in Section 8.1 in order to avoid double-counting the same quantity in Section 8. In cases where the toxic chemical is not destroyed during a treatment process and subsequently enters another activity, such as disposal (e.g., metals removed from wastewaters and subsequently disposed on-site), the quantity of the

toxic chemical would be reported as disposed in Section 8.1, not as treated in Section 8.6.

Do not include in Section 8.6 any quantities of the toxic chemical associated with non-production related activities such as catastrophic releases and remedial actions, as well as other one-time events not associated with routine production practices, that were treated on-site.

Reporting quantities in Section 8.7, "Quantity treated off-site." It is an error to not include quantities in Section 8.7 that are reported in Section 6.2 as transferred off-site for the purposes of treatment and associated using the following codes:

- M40 Solidification/stabilization;
- M50 Incineration/thermal treatment;
- M54 Incineration/Insignificant Fuel Value;
- M61 Wastewater treatment (excluding POTW);
- M69 Other treatment; and
- M95 Transfer to Waste Broker--Waste Treatment.

In addition to those quantities, facilities should report any quantity that is transferred to a POTW (as reported in Section 6.1) in Section 8.7.

Do not include in Section 8.7 any quantities of the toxic chemical associated with non-production related activities such as catastrophic releases and remedial actions, as well as other one-time events not associated with routine production practices, that were sent off-site for the purposes of treatment or discharged to a POTW (these quantities are reported in Section 8.8 only).

Reporting quantities in Section 8.8, "Quantity released to the environment as a result of remedial actions, catastrophic events, or one-time events not associated with production processes." Report in Section 8.8 those quantities associated with non-production related activities such as catastrophic releases and remedial actions, as well as other one-time events not associated with routine production practices, that were released directly to the environment, disposed on-site, or transferred off-site for the purposes of recycling, energy recovery, treatment or disposal. Quantities reported in Section 8.8 must not be reported in Sections 8.1 through 8.7.

Reporting the production ratio in Section 8.9 A production ratio or activity index must be provided in Section 8.9. A zero is not acceptable and "NA" (Not Applicable), can be used only when the reported toxic chemical was not manufactured, processed, or otherwise used in the year prior to the reporting year.

Reporting source reduction activities in Section 8.10 It is an error to report a source reduction activity in Section 8.10 and not report at least one method used to identify that activity and vice versa.