Form R Instructions

Introduction

These instructions were prepared by the National Metal Finishing Resource Center. They are adapted from EPA's official instructions[1] and are designed especially to help metal finishers who are now required to submit TRI Form R (Appendix A) for the first time, due to changes in the threshold limits for lead and lead compounds. Please note that, while these instructions can be used to report other TRI chemicals, some of the information presented here is specific to lead and lead compounds and further guidance may be needed for different chemicals. Also, certain circumstances are not fully covered by these instructions. It is recommended that you use EPA's instructions if you:

- intend to claim trade secrets associated with lead reporting;
- plan to use Form A[2] for reporting (note that Form A cannot be used for lead and lead compounds);
- released lead or other TRI chemicals to the land at your facility during the reporting year via a spill or other means;
- discharge to more than one publicly owned treatment works (POTW);
- are reporting for dioxin;
- perform on-site energy recovery;
- want to report electronically; or
- ship waste to a foreign country.

With any new rule, there are gray areas and unanswered questions. The new lead rule is no exception. Please keep in mind that this is not an EPA guidance document. We have done our best to interpret the gray areas and provide useful advice. However, the burden is on the user to complete Form R correctly and you are urged to consult other resources to accomplish this task. Additional resources are listed in the "Reference" section of this document. Also, you can call the EPA TRI hotline at 800-424-9346.

Before you begin to complete Form R, use the TRI Lead Reporting Threshold Worksheet (Appendix B) to determine if you need to submit a Form R for lead, lead compounds, or other TRI chemicals. A list of chemicals commonly reported by metal finishers is found in Appendix C.

It is recommended that you retain a copy of the threshold determination worksheet in your records, even if you do not need to submit a Form R.

How to Assemble a Complete TRI Form R Report

The five-page EPA Form R consists of two parts:

- Part I, Facility Identification Information (page 1); and
- Part II Chemical-Specific Information (pages 2–5)

[1] Toxic Chemical Release Inventory Reporting Forms and Instructions, EPA 260-B-02-001, February 2002.

[2] Form A is designed for facilities with small amounts of TRI chemical in their wastes (500 pounds released). Form A cannot be used to report certain chemicals with low thresholds such as lead and lead compounds (referred to as persistent bioaccumulative toxic or PBT). For PBT chemicals, you must use Form R. However, you are permitted to use Form R for lead/lead compounds and Form A for other non-PBT chemicals. This strategy may significantly reduce your overall paperwork load.

You only have to fill out one 5-page "set" to cover both lead and lead compounds. However, if you need to submit a Form R for another TRI chemical(s) such as chromium or cyanide, you must submit an additional set(s) for each of those other chemicals.

When submitting more than one Form R, note that Part I of Form R can be completed, photocopied, and attached to each chemical-specific report. **However, Part I of each Form R submitted must have an original signature on the certification statement**. Part II must be completed separately for each TRI chemical or chemical category.

Staple all five pages of each report together. If you check "yes" on Part II, Section 8.11, you may attach additional information (optional) on pollution prevention activities at your facility.

Before You Start Filling Out Form R

In order to fill out Form R, you need to know how much lead is entering your facility, what happens to the lead inside your facility, and the ways in which lead leaves your facility. A good approach for figuring this out is to prepare a material balance. Use the diagram on page 3 to prepare a lead material balance for your facility. Show all quantities, as "lead" not lead compounds. Refer to Appendix D for conversion factors.

Submitting Your Completed Form R

TRI Form R reports must be sent to EPA and in most states to your state environmental protection agency. The package must be postmarked by July 1.

Where to Submit Form R Reports to EPA

Regular U.S. Mail

EPCRA Reporting Center
Attn: Toxic Chemical Release Inventory
P.O. Box 3348
Merrifield, VA 22116-3348

Certified U.S. Mail

EPCRA Reporting Center
c/o Titan Systems Corp.
Suite 300
4600 North Fairfax Drive
Arlington, VA 22203

If you want to submit your TRI Form R electronically to EPA, see reference 1.

Where to Submit Form R Reports to Your State Environmental Protection Agency

Most states require that you submit a Form R to your state environmental protection agency. Submit the package to the state agency where the facility is located. Refer to Appendix F for the appropriate state submission addresses.

Some state agencies accept Form R electronic submissions. See Appendix F for a list of those states.

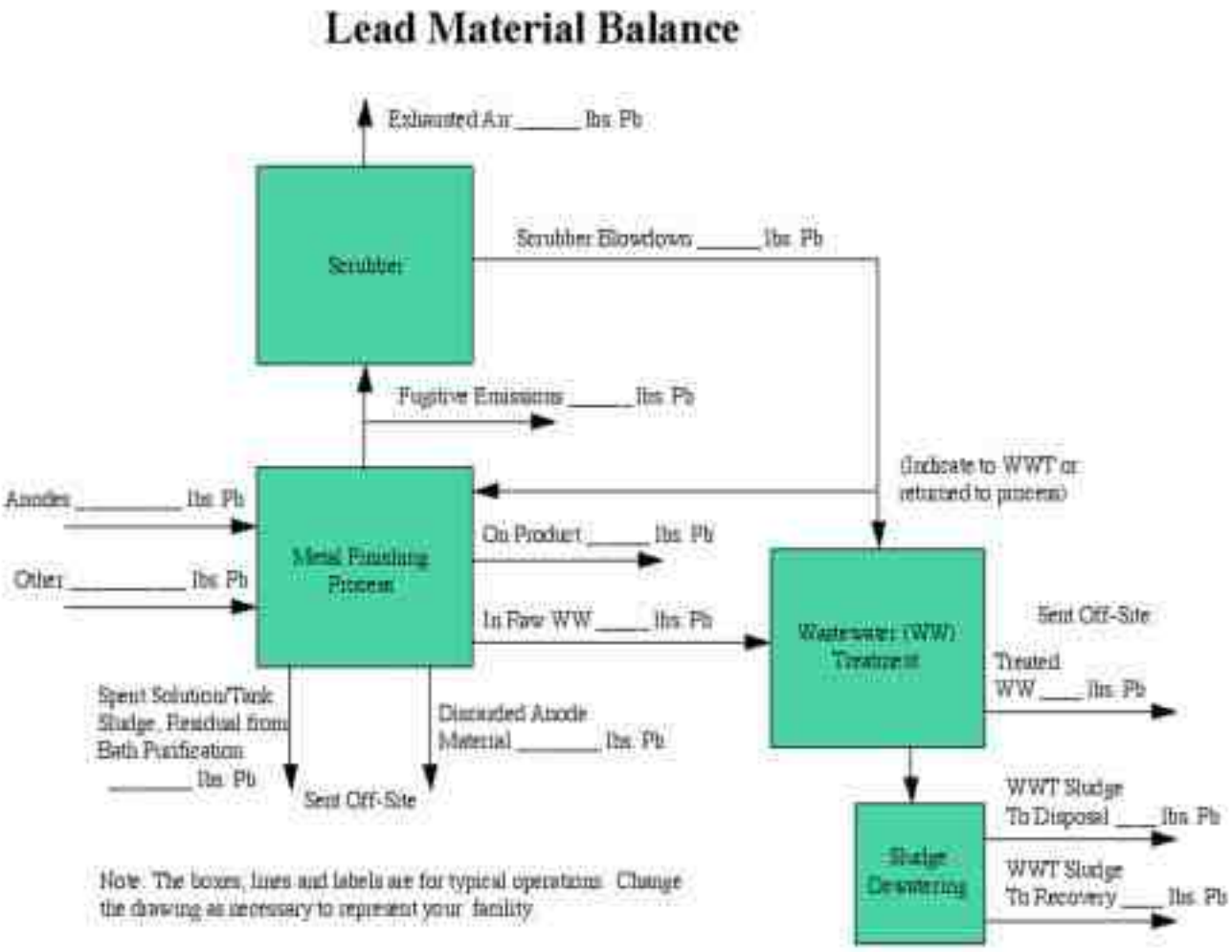

Figure 1. Material Balance for Lead

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Part I. Facility Identification Information

Section 1. Reporting Year

This is the calendar year to which the reported information applies, not the year in which you are submitting the report. Information for the 2001 reporting year must be submitted on or before July 1, 2002.

Section 2. Trade Secret Information

2.1 Are you claiming the TRI chemical identified on page 2 is a trade secret?
The specific identity of the TRI chemical being reported in Part II, Section 1, may be designated as a trade secret. If you are making a trade secret claim, mark "yes" and proceed to Section 2.2.

If you checked "no," proceed to Section 3; do not answer Section 2.2.

2.2 If "yes" in 2.1, is this copy sanitized or unsanitized?
If you check "no" in 2.1, leave this blank.

If you check "yes" in 2.1, refer to reference 1 (Toxic Chemical Release Inventory Reporting Forms and Instructions, EPA 260-B-02-001, February 2002). These abridged instructions do not cover trade secret claims.

Section 3. Certification

The owner or operator or a senior official with management responsibility for the person (or persons) completing the form must sign the certification statement. The owner, operator, or official must certify the accuracy and completeness of the information reported on the form by signing and dating the certification statement. Each report must contain an original signature. Print or type in the space provided the name and title of the person who signs the statement. This certification statement applies to all the information supplied on the form and should be signed only after the form has been completed.

Section 4. Facility Identification

4.1 Facility Name, Location, and TRI Facility Identification Number
Facility Name and Location. Enter the full name that the facility presents to the public and its customers in doing business (e.g., the name that appears on invoices, signs, and other official business documents). Do not use a nickname for the facility (e.g., Main Street Plant) unless that is the legal name of the facility under which it does business. Also enter the street address, mailing address, city, county, state, and zip code in the space provided. Do not use a post office box number as the street address. The street address provided should be the location where the TRI chemicals are manufactured, processed, or otherwise used. If your mailing address and street address are the same, enter NA in the space for the mailing address.

If your facility is not in a county, put the name of your city, district (for example, District of Columbia), or parish (if you are in Louisiana) in the county block of the Form R.

TRI Facility Identification Number. If you have submitted a Form R or Form A for previous reporting years, a TRI Facility Identification Number has been assigned to your facility. If you know

your TRI Facility Identification Number, complete Section 4. If you do not know your TRI Facility Identification Number, contact the EPCRA Call Center (see page 7). If your facility has moved, do not enter your TRI facility identification number, enter "New Facility." If you are filing a separate Form R for each "establishment" at your facility, use the same TRI facility identification number for each establishment.

4.2 Full or Partial Facility Indication

TRI requires reports by "facilities," which are defined as "all buildings, equipment, structures, and other stationary items which are located on a single site or on contiguous or adjacent sites and which are owned or operated by the same person."

A covered facility must report all releases and other waste management activities and source reduction activities of a TRI chemical if the facility meets a reporting threshold for that TRI chemical. However, if the facility is composed of several distinct establishments, EPA allows these establishments to submit separate reports for the TRI chemical as long as all releases and other waste management activities of the TRI chemical from the entire facility are accounted for. Whether submitting a report for the entire facility or separate reports for the establishments, the threshold determination must be made based on the entire facility.

Indicate in Section 4.2 whether your report is for the entire covered facility as a whole or for part of a covered facility (i.e., one or more establishments).

4.3 Technical Contact

Enter the name and telephone number (including area code) of a technical representative whom EPA or State officials may contact for clarification of the information reported on Form R. This contact person does not have to be the same person who prepares the report or signs the certification statement and does not necessarily need to be someone at the location of the reporting facility. However, this person must be familiar with the details of the report so that he or she can answer questions about the information provided.

4.4 Public Contact

Enter the name and telephone number (including area code) of a person who can respond to questions from the public about the report. If you choose to designate the same person as both the technical and the public contact, you may enter "Same as Section 4.3" in this space. This contact person does not have to be the same person who prepares the report or signs the certification statement and does not necessarily need to be someone at the location of the reporting facility. If your facility does not have a public contact, provide the technical contact name and telephone number in the public contact name and telephone number fields.

4.5 Standard Industrial Classification (SIC) Code

Enter the appropriate four-digit Standard Industrial Classification (SIC) Code that is the primary SIC Code for your facility in Section 4.5(a). Most metal facilities will enter 3471. Printed wire board manufacturing facilities should enter 3672. Enter any other applicable SIC Codes for your facility in 4.5 (b)–(f).

The North American Industry Classification System (NAICS) is a new economic classification system that will replace the 1987 SIC code system. EPA will address the SIC code change, as it relates to EPCRA, in an upcoming Federal Register notice. This upcoming change does NOT affect the 2001 TRI reporting.

4.6 Latitude and Longitude
Enter the latitude and longitude coordinates of your facility. Sources of these data include EPA permits (e.g., NPDES permits), county property records, facility blueprints, and site plans or by using a global position system (GPS) device. Instructions on how to determine these coordinates can be found in reference 1, Appendix E. Enter only numerical data. Do not preface numbers with letters such as N or W to denote the hemisphere.

Latitude and longitude coordinates of your facility are very important for pinpointing the location of reporting facilities and are required elements on the Form R. EPA encourages facilities to make the best possible measurements when determining latitude and longitude. Please check to make sure the latitude and longitude coordinates of your facility are correct. For the continental United States readings should be within 24°23'58" and 49°22'16" latitude, and 66°53'06" and 124°50'55" longitude.

4.7 Dun & Bradstreet Number(s)
Enter the nine-digit number assigned by Dun & Bradstreet (D & B) for your facility. These numbers code the facility for financial purposes. This number may be available from your facility ‘s treasurer or financial officer. You can also obtain the numbers from your local Dun & Bradstreet office (check the telephone book White Pages). If a facility does not subscribe to the D & B service, a “support number” can be obtained from the D & B center located in Allentown, Pennsylvania, at (610) 882-7748 (8:30 AM to 8:00 PM, Eastern Time), toll free at (800) 333-0505 or on the web at www.dnb.com. If your facility has not been assigned a D & B number, enter NA (not applicable) in box (a).

4.8 EPA Identification Number(s)
The EPA Identification Number is a 12-character number assigned to facilities covered by hazardous waste regulations under the Resource Conservation and Recovery Act (RCRA). Facilities not covered by RCRA Subtitle C are not likely to have an assigned identification number. If your facility is not required to have an identification number, enter NA in box (a). If your facility has been assigned EPA Identification Numbers, you must enter those numbers in the spaces provided in Section 4.8.

4.9 NPDES Permit Number(s)
Enter the numbers of any permits your facility holds under the National Pollutant Discharge Elimination System (NPDES). This nine-character permit number is assigned to your facility by EPA or the State under the authority of the Clean Water Act. Most metal finishing companies discharge to a publicly owned treatment works (POTW) and do not have a NPDES permit. If your facility does not have a permit, enter NA in Section 4.9a.

4.10 Underground Injection Well Code (UIC) Identification Number(s)
If your facility has a permit to inject a waste that contains or contained the TRI chemical into Class 1 deep wells, enter the 12-digit Underground Injection Well Code (UIC) identification number assigned by EPA or by the State under the authority of the Safe Drinking Water Act. If your facility does not hold such a permit(s), enter NA in Section 4.10a.

Section 5. Parent Company Information

You must provide information on your parent company. For purposes of Form R, a parent company is defined as the highest level company, located in the United States, that directly owns at least 50% of the voting stock of your company. If your facility is owned by a foreign entity, enter NA in this space. Corporate names should be treated as parent company names for companies with multiple facility sites.

5.1 Name of Parent Company
Enter the name of the corporation or other business entity that is your ultimate U.S. parent company. If your facility has no parent company, check the NA box.

5.2 Parent Company's Dun & Bradstreet Number
Enter the D & B number for your ultimate U.S. parent company, if applicable. The number may be obtained from the treasurer or financial officer of the company. If your parent company does not have a D & B number, check the NA box.

Part II. Chemical Specific Information

In Part II, you will report on:

- The TRI chemical being reported;
- The general uses and activities involving the TRI chemical at your facility;
- On-site releases of the TRI chemical from the facility to air, water, and land;
- Quantities of the TRI chemical transferred to off-site locations;
- Information for on-site and off-site disposal, treatment, energy recovery, and recycling of the TRI chemical; and
- Source reduction activities.

Section 1. TRI Chemical Identity (CAS Number)

Enter the Chemical Abstracts Service (CAS) registry number in Section 1.1. For lead and lead compounds, the applicable CAS numbers are:

- Lead: 7439-92-1
- Lead compounds: N420

Note: If you meet the reporting thresholds for both lead and lead compounds, one TRI report can cover both chemicals. In this case, enter N420.

For the CAS registry number of other TRI chemicals, refer to Table II of reference 1.

1.2 TRI Chemical or Chemical Category Name

Enter the name of the TRI chemical or chemical category:

- Lead, or
- Lead Compounds.

Note: If you meet the thresholds for both lead and lead compounds, one TRI report can cover both chemicals. In this case, enter "Lead Compounds".

For the names of other TRI chemicals, refer to Table II of reference 1.

EPA requests that the TRI chemical, chemical category, or generic name also be placed in the box marked "Toxic Chemical, Category, or Generic Name" in the upper right-hand corner on all pages of Form R. While this space is not a required data element, providing this information will help you in preparing a complete Form R report.

1.3 Generic Chemical Name

Complete Section 1.3 only if you are claiming the specific TRI chemical identity of the TRI chemical as a trade secret and have marked the trade secret block in Part I, Section 2.1 on page 1 of Form R.

These abridged instructions do not cover trade secret claims. If you check "yes in 2.1, refer to: reference 1.

1.4 Distribution of Each Member of the Dioxin and Dioxin-like Compounds Category

The term Dioxin is commonly used to refer to a family of toxic chemicals that all share a similar chemical structure and a common mechanism of toxic action. Dioxins can cause cancer, reproductive

effects, immune response and skin disorders. Certain industrial processes are known to produce dioxin. Dioxin formation is generally not associated with metal finishing processes.

If you are not reporting for dioxin and dioxin-like compounds, leave the entire section blank. If you are reporting for dioxin, see reference 1 for instructions.

Section 2. Mixture Component Identity
If you are reporting for lead or lead compounds, leave this section blank.

If you are making a trade secret claim, see reference 1.

2.1 Generic Chemical Name Provided by Supplier
If you are reporting for lead or lead compounds, leave this section blank.

If you are making a trade secret claim, see reference 1.

Section 3. Activities and Uses of the TRI Chemical at Your Facility

In this section, you must indicate whether the TRI chemical is manufactured (including imported from outside the U.S.), processed, or otherwise used at the facility and the general nature of such activities and uses at the facility during the calendar year. To do this, you must first understand the definitions of these three terms, as used with TRI. Definitions are provided in Appendix E. For a more complete explanation of these terms, see reference 1. Here are some general items to keep in mind when completing Section 3.

- You are not required to report on Form R the quantity manufactured, processed or otherwise used. However, knowing this information will help you fill out other sections of Form R.
- Report activities that take place only at your facility, not activities that take place at other facilities such as off-site treatment/recovery sites involving your products.
- You must check all the boxes in this section that apply.

Before completing Section 3, fill out the worksheet in Appendix E. This will reduce confusion and your workload.

3.1 Manufacture the TRI Chemical
Before completing Section 3.1, fill out the worksheet in Appendix E.

Persons who manufacture (including import) the TRI chemical must check at least one of the following:

a. ***Produce*** — The TRI chemical is produced at the facility.
b. ***Import*** — The TRI chemical is imported by the facility into the Customs Territory of the United States.

And check at least one of the following:

c. ***For on-site use/processing*** — The TRI chemical is produced or imported and then further processed or otherwise used at the same facility. If you check this block, generally you should also check at least one item in Part II, Section 3.2 or 3.3.
d. ***For sale/distribution*** — The TRI chemical is produced or imported specifically for sale or distribution outside the manufacturing facility.

e. ***As a byproduct*** — The TRI chemical is produced coincidentally during the manufacture, processing, or otherwise use of another chemical substance or mixture and, following its production, is separated from that other chemical substance or mixture. TRI chemicals produced as a result of waste management are also considered byproducts.
f. ***As an impurity*** — The TRI chemical is produced coincidentally as a result of the manufacture, processing, or otherwise use of another chemical but is not separated and remains in the mixture or other trade name product with that other chemical.

In summary, if you are a manufacturer of the TRI chemical, you must check (a) and/or (b), and at least one of (c), (d), (e), and (f) in Section 3.1.

3.2 Process the TRI Chemical (incorporative activities)
Before completing Section 3.2, fill out the worksheet in Appendix E.

Persons who process the TRI chemical must check at least one of the following:
a. ***As a reactant*** — A natural or synthetic TRI chemical is used in chemical reactions for the manufacture of another chemical substance or of a product. Includes but is not limited to, feedstocks, raw materials, intermediates, and initiators.
b. ***As a formulation component*** — A TRI chemical is added to a product (or product mixture) prior to further distribution of the product that acts as a performance enhancer during use of the product. Examples of TRI chemicals used in this capacity include additives and dyes.
c. ***As an article component*** — A TRI chemical becomes an integral component of an article distributed for industrial, trade, or consumer use. For example, lead or tin/lead plating.
d. ***Repackaging*** — This consists of processing or preparation of a TRI chemical (or product mixture) for distribution in commerce in a different form, state, or quantity. This includes the situation where lead anodes are purchased in bulk and resold in smaller quantities.
e. ***As an impurity*** — The TRI chemical is processed but is not separated and remains primarily in the mixture or other trade name product with that/those other chemical(s).

3.3 Otherwise Use the TRI Chemical (non-incorporative activities)
Before completing Section 3.3, fill out the worksheet in Appendix E.

Persons who otherwise use the TRI chemical must check at least one of the following:
a. ***As a chemical processing aid*** — A TRI chemical that is added to a reaction mixture to aid in the manufacture or synthesis of another chemical substance but is not intended to remain in or become part of the product or product mixture is otherwise used as chemical processing aid. Examples include catalysts, inhibitors, initiators, and reaction terminators.
b. ***As a manufacturing aid*** — A TRI chemical that aids the manufacturing process but does not become part of the resulting product and is not added to the reaction mixture during the manufacture or synthesis of another chemical substance is otherwise used as a manufacturing aid. An example is lead electrodes.
c. ***Ancillary or other use*** — A TRI chemical is used at a facility for purposes other than aiding chemical processing or manufacturing as described above is otherwise used as ancillary or other use. Examples include, but are not limited to, cleaners, degreasers, lubricants, fuels, TRI chemicals used for treating wastes

Section 4. Maximum Amount of the TRI Chemical On-Site at Any Time During the Calendar Year

For data element 4.1 of Part II, insert the code (see codes below) that indicates the maximum quantity of the TRI chemical (e.g., in storage tanks, process vessels, on-site shipping containers, or in waste) at your facility at any time during the calendar year. If the TRI chemical was present at several locations within your facility, use the maximum total amount present at the entire facility at any one time. While range reporting is not allowed for PBT chemicals (e.g., lead and lead compounds) elsewhere on the Form R, range reporting for PBT chemicals is allowed for Maximum Amount On Site.

For "lead compounds", include the entire weight of the compound. Do not report the weight of "lead" only.

Table X. Weight Range in Pounds Codes

Range Code	From…	To…
01	0	99
02	100	999
03	1,000	9,999
04	10,000	99,999
05	100,000	999,999

For higher ranges, see reference 1.

Section 5. Quantity of the TRI Chemical Entering Each Environmental Medium On-site

In Section 5, you must account for the releases of lead to the environment from your facility for the calendar year. In section 5 report quantities as "lead" not as "lead compounds". Use the material balance diagram you prepared. For lead, which is a PBT chemical, report quantities in pounds to the nearest 0.1 pounds provided the accuracy and the underlying data on which the estimate is based supports this level of precision. Otherwise, report lead quantities in whole numbers. Use whole numbers when reporting for all non-PBT chemicals such as chromium.

On-site releases to the environment include emissions to the air, discharges to surface waters, and releases to land and underground injection wells.

The following is an explanation of each column in Section 5. This is followed by a discussion of Section 5.1 to 5.5.

Section 5, Column A: Calculating On-Site Releases. To provide the release information required in column A in this section, you must use the best readily available data (including relevant monitoring data and emissions measurements) collected at your facility to meet other regulatory requirements or as part of routine plant operations, to the extent you have such data for the TRI chemical. Below is guidance on calculating on-site releases.

- When relevant monitoring data or emission measurements are not readily available, reasonable estimates of the amounts released must be made using published emission factors, material balance calculations, or engineering calculations. You may not use emission factors or calculations to estimate releases if more accurate data are available.
- No additional monitoring or measurement of the quantities or concentrations of any TRI chemical released into the environment, or of the frequency of such releases, beyond that

required under other provisions of law or regulation or as part of routine plant operations, is required for the purpose of completing Form R.

- You must estimate, as accurately as possible, the quantity (in pounds) of the TRI chemical or chemical category that is released annually to each environmental medium on-site. Include only the quantity of the TRI chemical in this estimate. If the TRI chemical present at your facility was part of a mixture or other trade name product, calculate only the releases of the TRI chemical, not the other components of the mixture or other trade name product. If you are only able to estimate the releases of the mixture or other trade name product as a whole, you must assume that the release of the TRI chemical is proportional to its concentration in the mixture or other trade name product.

See Part 40, Section 372.30(b) of the *Code of Federal Regulations* for further information on how to calculate the concentration and weight of the TRI chemical in the mixture or other trade name product.

Section 5, Column B: Basis of Estimate

For each release estimate, you are required to indicate the principal method used to determine the amount of release reported. You will enter a letter code that identifies the method that applies to the largest portion of the total estimated release quantity.

The codes are as follows:

- M— Estimate is based on monitoring data or measurements for the TRI chemical.
- C— Estimate is based on mass balance calculations, such as calculation of the amount of the TRI chemical in wastes entering and leaving process equipment.
- E— Estimate is based on published emission factors, such as those relating release quantity to through-put or equipment type (e.g., air emission factors).
- O— Estimate is based on other approaches such as engineering calculations (e.g., estimating volatilization using published mathematical formulas) or best engineering judgment. This would include applying estimated removal efficiency to a treatment, even if the composition of the waste before treatment was fully identified through monitoring data.

In some cases release estimates are derived through a series of operations. The following examples provide guidance on handling some situations.

- If 40% of stack emissions of the reported TRI chemical were derived using monitoring data, 30% by mass balance, and 30% by emission factors, you would enter the code letter “M” for monitoring. If the monitoring data, mass balance, or emission factor used to estimate the release is not specific to the TRI chemical being reported, the form should identify the estimate as based on engineering calculations or best engineering judgment (O).
- If a mass balance calculation yields the flow rate of a waste, but the quantity of reported TRI chemical in the waste is based on solubility data, report “O” because “engineering calculations” were used as the basis of estimate of the quantity of the TRI chemical in the waste.
- If the concentration of the TRI chemical in the waste was measured by monitoring equipment and the flow rate of the waste was determined by mass balance, then the primary basis of the estimate is “monitoring” (M). Even though a mass balance calculation also contributed to the estimate, “monitoring” should be indicated because monitoring data were used to estimate the concentration of the waste.
- Mass balance (C) should only be indicated if it is **directly** used to calculate the mass (weight) of TRI chemical released. Monitoring data should be indicated as the basis of estimate **only** if the TRI chemical concentration is measured in the waste being released into the environment.

Monitoring data should **not** be indicated, for example, if the monitoring data relate to a concentration of the TRI chemical in other process streams within the facility.

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It is important to realize that the accuracy and proficiency of release estimation will improve over time. However, submitters are not required to use new emission factors or estimation techniques to revise previous Form R submissions.

Section 5, Column C: Percent From Stormwater
This column relates only to Section 5.3—discharges to receiving streams or water bodies. If your facility has monitoring data on the amount of the TRI chemical in stormwater runoff (including unchanneled runoff), you must include that quantity of the TRI chemical in your water release in column A and indicate the percentage of the total quantity (by weight) of the TRI chemical contributed by stormwater in column C (Section 5.3C).

If your facility has monitoring data on the TRI chemical and an estimate of flow rate, you must use these data to determine the percent stormwater.

If you have monitored stormwater but did not detect the TRI chemical, enter zero in column C. If your facility has no stormwater monitoring data for the chemical, enter NA in this space on the form.

If your facility does not have periodic measurements of stormwater releases of the TRI chemical, but has submitted chemical-specific monitoring data in permit applications, then these data must be used to calculate the percent contribution from stormwater. See reference 1 for details.

Section 5, NA vs. a Numeric Value (e.g., Zero). For section 5, if the wastestream that contains or contained the TRI chemical is not directed to the relevant environmental medium, or if leaks, spills and fugitive emissions cannot occur then enter NA (not applicable). If the wastestream that contains or contained the TRI chemical is directed to the environmental medium, or if leaks, spills or fugitive emissions can occur, NA is not appropriate, even if treatment or emission controls result in a release of zero. In such cases, enter "0".

For non-PBT chemicals, such as chromium, if the annual aggregate release of that chemical was equal to or less than 0.5 pound, the value reported is zero ("0"). For lead and other PBT chemicals report to the nearest 0.1 pounds.

All releases of the TRI chemical to the air must be classified as either stack or fugitive emissions, and included in the total quantity reported for these releases in Sections 5.1 and 5.2.

The following are discussions of Sections 5.1 through 5.5.

5.1 Fugitive or Non-Point Air Emissions
Fugitive emissions are releases to the air that are not released through stacks, vents, ducts, pipes, or any other confined air stream. For example, releases within the manufacturing building from an unventilated tank or soldering operation that are vented to the atmosphere through open doors and windows.

Generally, lead and lead compounds have a low solubility in chromic acid and sulfuric acid. As a result, fumes and aerosols will contain only small quantities of lead. There are no known sources to help estimate this information. Here are some potential choices for completing 5.1:

- enter NA (Check the NA box in Section 5.1 if you do not engage in activities that result in fugitive or non-point air emissions of this listed toxic chemical.),
- estimate the quantity as "0" if there is a possibility that the TRI chemical could be released as fugitive emissions,
- monitor your processes for fugitive emissions and use actual data (not required by TRI), or
- locate a suitable reference document to develop an estimate.

5.2 Stack or Point Air Emissions

Report the total of all releases of the TRI chemical to the air that occur through stacks, confined vents, ducts, pipes, or other confined air streams. Air releases from air pollution control equipment, such as scrubbers, fall in this category. Monitoring data, engineering estimates, and mass balance calculations may help you to complete this section.

Check the NA box in Section 5.2 if there are no stack air activities involving the wastestream that contains or contained the TRI chemical.

5.3 Discharges to Receiving Streams or Water Bodies

Section 5.3 is applicable to facilities that discharge the TRI chemical being reported in wastewater or stormwater that is discharged to a stream or water body. This includes process outfalls such as pipes and open trenches, releases from on-site wastewater treatment systems, and the contribution from stormwater runoff, if applicable (see previous instructions for Section 6, column C).

Do not include discharges to POTWs in this section.

Enter NA in Section 5.3.1 if there are no discharges to receiving streams or water bodies

If you discharge to a stream or water body, enter the name of each receiving stream or surface water body to which the TRI chemical being reported is directly discharged. Report the name of the receiving stream or water body as it appears on the NPDES permit for the facility. Enter the total annual amount of the TRI chemical released from all discharge points at the facility to each receiving stream or water body.

5.4.1 Underground Injection On-Site to Class I Wells

Enter the total amount of the TRI chemical that was injected into Class I wells at the facility (not at an off-site location). Chemical analyses, injection rate meters, and RCRA Hazardous Waste Generator Reports are good sources for obtaining data that will be useful in completing this section.

Check the NA box in Section 5.4.1 if you do not inject the wastestream that contains or contained the TRI chemical into Class I underground wells.

5.4.2 Underground Injection On-site to Class II–V Wells

Enter the total amount of the TRI chemical that was injected into wells at the facility other than Class I wells.

Check the NA box in Section 5.4.2 if you do not inject the wastestream that contains or contained the TRI chemical into Class II–V underground wells.

5.5 Disposal to Land On-site

Do not report land disposal at off-site locations in this section. This section is for releases to the land at your facility.

There are five predefined subcategories for reporting quantities released to land within the boundaries of the facility are provided. Check the NA box in sections 5.5.1A through 5.5.3 if there are no disposal activities for the wastestream that contains or contained the TRI chemical. EPA suggests that for 5.5.4, facilities generally should report zero, recognizing the potential for spills or leaks.

If you release TRI chemicals to your land, see instruction in reference 1 for completing this section.

Section 6. Transfers of the TRI Chemical in Wastes to Off-Site Locations

In section 6 you report the quantity of the TRI chemical in wastes sent to any off-site facility for the purposes of disposal, treatment, energy recovery, or recycling. In Section 6 report quantities as "lead" not as "lead compounds". Use the material balance diagram you prepared to help complete Section 6. For lead, which is a PBT chemical, report quantities in pounds to the nearest 0.1 pounds provided the accuracy and the underlying data on which the estimate is based supports this level of precision. Otherwise, report lead quantities in whole numbers. Use whole numbers when reporting for all non-PBT chemicals such as chromium.

NA vs. a Numeric Value (e.g., Zero). You should enter a numeric value if you transfer a TRI chemical to a publicly owned treatment works (POTW) or transfer wastes containing that toxic chemical to other off-site locations. However, for non-PBT chemicals, such as chromium, if the annual aggregate release of that chemical was equal to or less than 0.5 pound, the value reported is zero ("0"). For lead and other PBT chemicals report to the nearest 0.1 pounds.

However, if you do not discharge wastewater containing the reported TRI chemical to a POTW, enter NA in the box for the POTW's name in Section 6.1.B._ If you do not ship or transfer wastes containing the reported TRI chemical to other off-site locations, enter NA in the box for the off-site location's EPA Identification Number in Section 6.2._.

Important: You must number the boxes for reporting the information for each POTW or other off-site location in Sections 6.1 and 6.2. In the upper left hand corner of each box, the section number is either 6.1.B._. or 6.2._. For example, if you report a transfer of the TRI chemical to one or more other off-site locations, number the boxes in section 6.2 as 6.2.1, 6.2.2, etc. If you transfer the TRI chemical to more than two other off-site locations, photocopy page 4 of Form R as many times as necessary and then number the boxes consecutively for each off-site location. At the bottom of page 4 you will find instructions for indicating the total number of page 4s that you are submitting as part of Form R as well as indicating the sequence of those pages. For example, your facility transfers the reported TRI chemical to three other off-site locations. You would photocopy page 4 once, indicate at the bottom of Section 6.2 on each page 4 that there are a total of two page 4s and then indicate the first and second page 4. The boxes for the two off-site locations on the first page 4 would be numbered 6.2.1 and 6.2.2, while the box for the third off-site location on the second page 4 would be numbered 6.2.3.

6.1 Discharges to Publicly Owned Treatment Works

In Section 6.1.A, estimate the quantity of the reported TRI chemical transferred to your publicly owned treatment works (POTWs) and the basis upon which the estimate was made. In Section 6.1.B., enter the name and address for each POTW to which your facility discharges or otherwise transfers wastewater containing the reported TRI chemical. The most common transfers of this type will be conveyances of the toxic chemical in facility wastewater through underground sewage pipes; however, materials may also be trucked or transferred via some other direct methods to a POTW.

If you do not discharge process wastewater to a POTW, enter NA in the box for the POTW's name in Section 6.1.B. (See discussion of NA vs. a Numeric Value (e.g., Zero) in the beginning of Section 6). If you discharge process wastewater, but there is no presence of the TRI chemical, then enter "0".

6.1.A.1 Total Transfers

Enter the total amount, in pounds, of the reported TRI chemical that is contained in the wastewaters transferred to all POTWs. This can be calculated using the following formula:

wastewater flow in million gal/yr. * 8.34* Concentration of Pb in mg/l = Lbs. of Pb/yr.

For example, if a facility discharges 10 million gallons per year (MGY) of wastewater with an average Pb concentration of 0.05 mg/l, the quantity of Pb would be:

10 MGY * 8.34*0.05 mg/l = 4.17 pounds Pb
Rounded to nearest 0.1 lbs. = 4.2 lbs. Pb

For non-PBT chemicals, if the total amount transferred is less than 1,000 pounds, you may report a range by entering the appropriate range code (range reporting in section 6.1.A.1 does not apply to lead or other BPT chemicals). The following reporting range codes are to be used:

Code	Reporting Range (in pounds)
A	1-10
B	11-499
C	500-999

6.1.A.2 Basis of Estimate

You must identify the basis for your estimate of the total quantity of the reported TRI chemical in the wastewater transferred to all POTWs. Enter one of the following letter codes that applies to the method by which the largest percentage of the estimate was derived.

- M— Estimate is based on monitoring data or measurements for the TRI chemical as transferred to an off-site facility.
- C— Estimate is based on mass balance calculations, such as calculation of the amount of the TRI chemical in streams entering and leaving process equipment.
- E— Estimate is based on published emission factors, such as those relating release quantity to throughput or equipment type (e.g., air emission factors).
- O— Estimate is based on other approaches such as engineering calculations (e.g., estimating volatilization using published mathematical formulas) or best engineering judgment. This would include applying estimated removal efficiency to a wastestream, even if the composition of the stream before treatment was fully identified through monitoring data.

Most metal finishers reporting for lead, will use M (monitoring data).

6.2 Transfers to Other Off-Site Locations
In Section 6.2 enter the EPA Identification Number, name, and address for each off-site location to which your facility ships or transfers wastes containing the reported TRI chemical for the purposes of disposal, treatment, energy recovery, or recycling. Also estimate the quantity of the reported TRI chemical transferred and the basis upon which the estimate was made. This would include any residual chemicals in "empty" containers transferred off-site.

If appropriate, you must report multiple activities for each off-site location. For example, if your facility sends a reported TRI chemical in waste to an off-site location where some of the TRI chemical is to be recycled while the remainder of the quantity transferred is to be treated, you must report both the waste treatment and recycle activities, along with the quantity associated with each activity.

If your facility transfers a TRI chemical to an off-site location and that off-site location performs more than four activities on that chemical, provide the necessary information in Box 6.2.1 for the off-site facility and the first four activities. Provide the information on the remainder of the activities in Box 6.2.2 and provide again the off-site facility identification and location information.

If you do not ship or transfer wastes containing the TRI chemical to other off-site locations, enter NA (See discussion of NA vs. a Numeric Value (e.g., Zero) in the introduction of Section 6) in the box for the off-site location's EPA Identification Number (defined in 40 CFR 260.10 and therefore commonly referred to as the RCRA ID Number). This number may be found on the Uniform Hazardous Waste Manifest, which is required by RCRA regulations.

If you ship or transfer wastes containing a TRI chemical and the off-site location does not have an EPA Identification Number (e.g., it does not accept RCRA hazardous wastes or you do not know the RCRA Identification Number), enter NA in the box for the off-site location EPA Identification Number.

6.2a Column A: Total Transfers
For each off-site location, enter the total amount, in pounds (in grams for dioxin and dioxin-like compounds), of the TRI chemical that is contained in the waste transferred to that location. **Do not enter the total poundage of the waste**, only the weight of the chemical. If you do not ship or transfer wastes containing the TRI chemical to other off-site locations, enter NA (See discussion of NA vs. a Numeric Value (e.g., Zero) in the introduction of Section 6) in the box for the off-site location's EPA Identification Number (defined in 40 CFR 260.10 and therefore commonly referred to as the RCRA ID Number).

For non-PBT chemicals, if the total amount transferred is less than 1,000 pounds, you may report a range by entering the appropriate range code (range reporting in section 6.1.A.1 does not apply to lead or other BPT chemicals). The following reporting range codes are to be used:

Code	Reporting Range (in pounds)
A	1-10
B	11-499
C	500-999

If you transfer the TRI chemical in wastes to an off-site facility for distinct and multiple purposes, you must report those activities for each off-site location, along with the quantity of the reported TRI chemical associated with each activity.

Do not double or multiple count amounts transferred off-site. For example, when a reported TRI chemical is sent to an off-site facility for sequential activities and the specific quantities associated with each activity are unknown, report only a single quantity (the total quantity transferred to that off-site location) along with a single activity code. In such a case, report the activity applied to the majority of the reported TRI chemical sent off-site, not the ultimate disposition of the TRI chemical. For example, when a TRI chemical is first recovered and then treated with the majority of the TRI chemical being recovered and only a fraction subsequently treated, report the appropriate recycling activity along with the quantity.

6.2b Column B: Basis of Estimate

You must identify the basis for your estimates of the quantities of the reported TRI chemical in waste transferred to each off-site location. Enter one of the following letter codes that applies to the method by which the largest percentage of the estimate was derived.

- M— Estimate is based on monitoring data or measurements for the TRI chemical as transferred to an off-site facility.
- C— Estimate is based on mass balance calculations, such as calculation of the amount of the TRI chemical in streams entering and leaving process equipment.
- E— Estimate is based on published emission factors, such as those relating release quantity to throughput or equipment type (e.g., air emission factors).
- O— Estimate is based on other approaches such as engineering calculations (e.g., estimating volatilization using published mathematical formulas) or best engineering judgment. This would include applying an estimated removal efficiency to a wastestream, even if the composition of the stream before treatment was fully identified through monitoring data.

6.2c Column C: Type of Waste Management: Disposal/ Treatment/Energy Recovery/Recycling

Enter one of the following M codes to identify the type of disposal, treatment, energy recovery, or recycling methods used by the off-site location for the reported TRI chemical. You must use more than one line and code for a single location when distinct quantities of the reported TRI chemical are subject to different waste management activities, including disposal, treatment, energy recovery, or recycling. You should use the code that, to the best of your knowledge, represents the ultimate disposition of the chemical. If the TRI chemical is sent off-site for further direct reuse (e.g., a TRI chemical in used solvent that will be used as lubricant at another facility) and does not undergo a waste management activity (i.e., release [including disposal], treatment, energy recovery, or recycling [recovery]) prior to that reuse, it need not be reported in section 6.2 or section 8.

Incineration vs. Energy Recovery

You must distinguish between incineration, which is waste treatment, and legitimate energy recovery. For you to claim that a reported TRI chemical sent off-site is used for the purposes of energy recovery and not for waste treatment, the TRI chemical must have a significant heating value and must be combusted in an energy recovery unit such as an industrial boiler, furnace, or kiln. In a situation where the reported TRI chemical is in a waste that is combusted in an energy recovery unit, but the TRI chemical does not have a significant heating value, e.g., CFCs, use code M54, Incineration/

Insignificant Fuel Value, to indicate that the TRI chemical was incinerated in an energy recovery unit but did not contribute to the heating value of the waste.

Metals and Metal Category Compounds Metals and metal category compounds will be managed in waste either by being released (including disposed) or by being recycled. Remember that the release and other waste management information that you report for metal category compounds will be the total amount of the parent metal released or recycled and NOT the whole metal category compound. The metal has no heat value and thus cannot be combusted for energy recovery and cannot be treated because it cannot be destroyed. Thus, transfers of metals and metal category compounds for further waste management should be reported as either a transfer for recycling or a transfer for disposal.

The applicable waste management codes for transfers of metals and metal category compounds for recycling are:

- M24, metals recovery,
- M93, waste broker — recycling, or
- M26, other reuse/recovery.

Applicable codes for transfers for disposal include: M10, M41, M62, M71, M72, M73, M79, M90, M94, and M99.

These codes are for off-site transfers for further waste management in which the wastestream may be treated but the metal contained in the wastestream is not treated and is ultimately released. For example, M41 would be used for a metal or metal category compound that is stabilized in preparation for disposal.

The following is a complete list of codes for Part II, Section 6.2, column C:

Disposal

M10 Storage Only
M41 Solidification/Stabilization—Metals and Metal Category Compounds only
M62 Wastewater Treatment (Excluding POTW) — Metals and Metal Category Compounds 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
M99 Unknown Treatment
M40 Solidification/Stabilization
M50 Incineration/Thermal Treatment
M54 Incineration/Insignificant Fuel Value
M61 Wastewater Treatment (Excluding POTW)
M69 Other Waste Treatment
M95 Transfer to Waste Broker — Waste Treatment

Energy Recovery

M56 Energy Recovery
M92 Transfer to Waste Broker — Energy Recovery

Recycling

M20 Solvents/Organics Recovery
M24 Metals Recovery
M26 Other Reuse or Recovery
M28 Acid Regeneration
M93 Transfer to Waste Broker — Recycling

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

In section 7 indicate the methods of waste treatment, energy recovery, and recycling applied to the reported TRI chemical in wastes on-site. There are three separate sections for reporting such activities.

Section 7A On-Site Waste Treatment Methods and Efficiency

Most of the chemical-specific information required by TRI that is reported on Form R is specific to the TRI chemical rather than the wastestream containing the TRI chemical. However, TRI does require that waste treatment methods applied on-site to wastestreams that contain the TRI chemical be reported. This information is reportable regardless of whether the facility actively applies treatment or the treatment of the wastestream occurs passively. This information is collected in Section 7A of Form R.

In Section 7A, you must provide the following information if you treat wastestreams containing the reported TRI chemical on-site:

(a) the general wastestream types containing the TRI chemical being reported;
(b) the waste treatment method(s) or sequence used on all wastestreams containing the TRI chemical;
(c) the range of concentration of the TRI chemicals in the influent to the waste treatment method;
(d) the efficiency of each waste treatment method or waste treatment sequence in destroying or removing the TRI chemical; and
(e) whether the waste treatment efficiency figure was based on actual operating data.

Use a separate line in Section 7A for each general wastestream type. Report only information about treatment of wastestreams at your facility, not information about off-site waste treatment. If you do not perform on-site treatment of wastestreams containing the reported TRI chemical, check the NA box at the top of Section 7A.

7A Column a: General Wastestream

For each waste treatment method, indicate the type of wastestream containing the TRI chemical that is treated. Enter the letter code that corresponds to the general wastestream type:

A Gaseous (gases, vapors, airborne particulates)
W Wastewater (aqueous waste)
L Liquid wastestreams (non-aqueous waste)
S Solid wastestreams (including sludges and slurries)

If a waste is a combination of water and organic liquid and the organic content is less than 50%, report it as a wastewater (W). Slurries and sludges containing water must be reported as solid waste if they contain appreciable amounts of dissolved solids, or solids that may settle, such that the viscosity or density of the waste is considerably different from that of process wastewater.

7A Column b: Waste Treatment Method(s) Sequence

Enter the appropriate waste treatment code from the list below for each on-site waste treatment method used on a wastestream containing the TRI chemical, regardless of whether the waste treatment method actually removes the specific TRI chemical being reported. Waste treatment

methods must be reported for each type of wastestream being treated (i.e., gaseous wastestreams, aqueous wastestreams, liquid non-aqueous wastestreams, and solids). Except for the air emission treatment codes, the waste treatment codes are not restricted to any medium.

Wastestreams containing the TRI chemical may have a single source or may be aggregates of many sources. For example, process water from several pieces of equipment at your facility may be combined prior to waste treatment. Report waste treatment methods that apply to the aggregate wastestream, as well as waste treatment methods that apply to individual wastestreams. If your facility treats various wastewater streams containing the TRI chemical in different ways, the different waste treatment methods must be listed separately. If your facility has several pieces of equipment performing a similar service in a waste treatment sequence, you may combine the reporting for such equipment. It is not necessary to enter four codes to cover four scrubber units, for example, if all four are treating wastestreams of similar character (e.g., sulfuric acid mist emissions), have similar influent concentrations, and have similar removal efficiencies. If, however, any of these parameters differs from one unit to the next, each scrubber must be listed separately.

If you are using the hardcopy paper form, and if your facility performs more than eight sequential waste treatment methods on a single general wastestream, continue listing the methods in the next row and renumber appropriately those waste treatment method code boxes you used to continue the sequence. For example, if the general wastestream in box 7A.1a had nine treatment methods applied to it, the ninth method would be indicated in the first method box for row 7A.2a. The numeral "1" would be crossed out, and a "9" would be inserted.

Treatment applied to any other general wastestream types would then be listed in the next empty row. In the scenario above, for instance, the second general wastestream would be reported in row 7A.3a. See Figure 5 for an example of a hypothetical Section 7A completed for a nine-step waste treatment process and a single waste treatment method.

<u>The completion of each waste treatment method sequence should clearly be marked by using an NA following the last waste treatment code, except in the situation in which exactly eight waste treatment methods are listed.</u> For example, if the wastestream in box 7A.1b has three waste treatment codes listed, a NA should be placed in the fourth method box to indicate the termination of the sequence. If the wastestream has exactly eight waste treatment codes, there is no need to enter an NA to terminate the sequence. If the wastestream has more than eight waste treatment codes: (1) Enter NA in Column C in the initial row and any subsequent rows in which the sequence is not terminated to indicate that the given wastestream continues on the next row (e.g., if waste treatment codes are continued in 7A.2b from 7A.1b, a NA should be indicated in 7A.1c.); (2) enter NA in the box following the last wastestream code to indicate the termination of the sequence, unless the sequence ends in the method box 8 (i.e., there are 8, 16, 24, 32, etc. wastestream codes); and (3) complete the information for Columns C, D, and E in the last row for a given sequence. For example, if the sequence terminates in 7A.3b, then fill in all relevant information for C, D, and E in this row. You do not need to reenter your General Wastestream code in column A. See Figure 5 for an example.

If you need additional space to report under Section 7A, photocopy page 4 of Form R as many times as necessary. At the bottom of page 4 you will find instructions for indicating the total number of page 4s that you are submitting as part of Form R, as well as instructions for indicating the sequence of those pages.

Waste Treatment Codes Air Emissions Treatment (applicable to gaseous wastestreams only)

A01 Flare
A02 Condenser
A03 Scrubber
A04 Absorber
A05 Electrostatic Precipitator
A06 Mechanical Separation
A07 Other Air Emission Treatment

Biological Treatment

B11 Aerobic
B21 Anaerobic
B31 Facultative
B99 Other Biological Treatment

Chemical Treatment

C01 Chemical Precipitation — Lime or Sodium Hydroxide
C02 Chemical Precipitation — Sulfide
C09 Chemical Precipitation — Other
C11 Neutralization
C21 Chromium Reduction
C31 Complexed Metals Treatment (other than pH adjustment)
C41 Cyanide Oxidation — Alkaline Chlorination
C42 Cyanide Oxidation — Electrochemical
C43 Cyanide Oxidation — Other
C44 General Oxidation (including Disinfection) — Chlorination
C45 General Oxidation (including Disinfection)— Ozonation
C46 General Oxidation (including Disinfection) — Other
C99 Other Chemical Treatment

Incineration/Thermal Treatment

F01 Liquid Injection
F11 Rotary Kiln with Liquid Injection Unit
F19 Other Rotary Kiln
F31 Two Stage
F41 Fixed Hearth
F42 Multiple Hearth
F51 Fluidized Bed
F61 Infra-Red
F71 Fume/Vapor
F81 Pyrolytic Destructor
F82 Wet Air Oxidation
F83 Thermal Drying/Dewatering
F99 Other Incineration/Thermal Treatment

Physical Treatment

P01 Equalization
P09 Other Blending
P11 Settling/Clarification
P12 Filtration
P13 Sludge Dewatering (non-thermal)
P14 Air Flotation
P15 Oil Skimming
P16 Emulsion Breaking — Thermal
P17 Emulsion Breaking — Chemical
P18 Emulsion Breaking — Other
P19 Other Liquid Phase Separation
P21 Adsorption — Carbon
P22 Adsorption — Ion Exchange (other than for recovery/reuse)
P23 Adsorption — Resin
P29 Adsorption — Other
P31 Reverse Osmosis (other than for recovery/reuse)
P41 Stripping — Air
P42 Stripping — Steam
P49 Stripping — Other
P51 Acid Leaching (other than for recovery/reuse)
P61 Solvent Extraction (other than recovery/reuse)
P99 Other Physical Treatment

Solidification/Stabilization

G01 Cement Processes (including silicates)

G09 Other Pozzolonic Processes (including silicates)
G11 Asphaltic Processes
G21 Thermoplastic Techniques
G99 Other Solidification Processes

7A Column c: Range of Influent Concentration

The form requires an indication of the range of concentration of the TRI chemical in the wastestream (i.e., the influent) as it typically enters the waste treatment step or sequence. The concentration is based on the amount or mass of the TRI chemical in the wastestream as compared to the total amount or mass of the wastestream. Enter in the space provided one of the following code numbers corresponding to the concentration of the TRI chemical in the influent:

1 = Greater than 10,000 parts per million (1%)
2 = 100 parts per million (0.01%) to 10,000 parts per million (1%)
3 = 1 part per million (0.0001%) to 100 parts per million (0.01%)
4 = 1 part per billion to 1 part per million
5 = Less than 1 part per billion

Note: Parts per million (ppm) is:

- milligrams/kilogram (mass/mass) for solids and liquids; • cubic centimeters/cubic meter (volume/volume) for gases;
- milligrams/liter for solutions or dispersions of the chemical in water; and
- milligrams of chemical/kilogram of air for particulates in air.

If you have particulate concentrations (at standard temperature and pressure) as grains/cubic foot of air, multiply by 1766.6 to convert to parts per million; if in milligrams/cubic meter, multiply by 0.773 to obtain parts per million. These conversion factors are for standard conditions of 0 ^{o}C (32 ^{o}F) and 760 mm Hg atmospheric pressure.

7A Column d: Waste Treatment Efficiency Estimate

Enter the number (see key below) indicating the percentage of the TRI chemical removed from the wastestream through destruction, biological degradation, chemical conversion, or physical removal. The waste treatment efficiency (expressed as percent removal) represents the percentage of the TRI chemical destroyed or removed (based on amount or mass), not merely changes in volume or concentration of the TRI chemical in the wastestream. The efficiency, which can reflect the overall removal from sequential treatment methods applied to the general wastestream, refers only to the percent destruction, degradation, conversion, or removal of the TRI chemical from the wastestream, it does not refer to the percent conversion or removal of other constituents in the wastestream. The efficiency also does not refer to the general efficiency of the treatment method for any wastestream. For some waste treatment methods, the percent removal will represent removal by several mechanisms, as in an aeration basin, where a TRI chemical may evaporate, biodegrade, or be physically removed from the sludge.

Percent removal can be calculated as follows:

$$(I - E) \times 100\% \; I$$

where:

I = amount of the TRI chemical in the influent wastestream (entering the waste treatment step or sequence) and

E = amount of the TRI chemical in the effluent wastestream (exiting the waste treatment step or sequence).

Calculate the amount of the TRI chemical in the influent wastestream by multiplying the concentration (by weight) of the TRI chemical in the wastestream by the total amount or weight of the wastestream. In most cases, the percent removal compares the treated effluent to the influent for the particular type of wastestream.

For metal category compounds, the calculation of the reportable concentration and waste treatment efficiency must be based on the weight of the parent metal, not on the weight of the metal compound. Metals are not destroyed, only physically removed or chemically converted from one form into another. The waste treatment efficiency reported must represent only physical removal of the parent metal from the wastestream (except for incineration), not the percent chemical conversion of the metal compound. If a listed waste treatment method converts but does not remove a metal (e.g., chromium reduction), the method must be reported with a waste treatment efficiency of zero.

TRI chemicals that are strong mineral acids neutralized to a pH of 6 or above are considered treated at a 100% efficiency.

All data readily available at your facility must be used to calculate waste treatment efficiency and influent TRI chemical concentration. If data are lacking, estimates must be made using best engineering judgment or other methods.

7A Column e: Based on Operating Data?
This column requires you to indicate, "Yes" or "No" to whether the waste treatment efficiency estimate is based on actual operating data. For example, you would check "Yes" if the estimate is based on monitoring of influent and effluent wastes under typical operating conditions. If the efficiency estimate is based on published data for similar processes or on equipment supplier's literature, or if you otherwise estimated either the influent or effluent waste comparison or the flow rate, check "No."

Section 7B On-Site Energy Recovery Processes
In Section 7B, you must indicate the on-site energy recovery methods used on the reported TRI chemical. Only TRI chemicals that have a significant heating value and are combusted in an energy recovery unit such as an industrial furnace, kiln, or boiler, can be reported as combusted for energy recovery in this section.

Metals and metal category compounds cannot be combusted for energy recovery and should NOT be reported in this section. Do not include the combustion of fuel oils, such as fuel oil #6, in this section. Energy recovery may take place only in an industrial kiln, furnace, or boiler.

If you do not perform on-site energy recovery for a wastestream that contains or contained the TRI chemical, check the NA box at the top of Section 7B and enter NA in Section 8.2.

Section 7C On-Site Recycling Processes
In Section 7C, you must report the recycling methods used on the TRI chemical. In this section, use the codes below to report only the recycling methods in place at your facility that are applied to the TRI chemical. Do not list any off-site recycling activities. (Information about off-site recycling must be reported in Part II, Section 6, "Transfers of the Toxic Chemical in Wastes to Off-Site Locations.")

If you do not perform on-site recycling for the reported TRI chemical, check the NA box at the top of Section 7C and enter NA in Section 8.4.

If you perform on-site recycling for the reported TRI chemical, enter the appropriate code in Section 7C and enter the appropriate value in Section 8.4. Round to the nearest 0.1 lbs. for lead and other BPT chemicals. For other TRI chemicals, if this quantity is less than or equal to 0.5 pound, round to zero (unless the chemical is a listed PBT chemical) and enter 0 in Section 8.4.

On-Site Recycling Codes

R11	Solvents/Organics Recovery — Batch Still Distillation
R12	Solvents/Organics Recovery — Thin-Film Evaporation
R13	Solvents/Organics Recovery — Fractionation
R14	Solvents/Organics Recovery — Solvent Extraction
R19	Solvents/Organics Recovery — Other
R21	Metals Recovery — Electrolytic
R22	Metals Recovery — Ion Exchange
R23	Metals Recovery — Acid Leaching
R24	Metals Recovery — Reverse Osmosis
R26	Metals Recovery — Solvent Extraction
R27	Metals Recovery — High Temperature
R28	Metals Recovery — Retorting
R29	Metals Recovery — Secondary Smelting
R30	Metals Recovery — Other
R40	Acid Regeneration
R99	Other Reuse or Recovery

If your facility uses more than one on-site recycling method for a TRI chemical, enter the codes in the space provided in descending order (greatest to least) based on the volume of the reported TRI chemical recovered by each process. If your facility uses more than ten separate methods for recycling the reported TRI chemical on-site, then list the ten activities that recover the greatest amount of the TRI chemical (again, in descending order).

Section 8. Source Reduction and Recycling Activities

This section includes the data elements mandated by Section 6607 of the Pollution Prevention Act of 1990 (PPA). In Section 8, you must provide information about source reduction activities and quantities of the TRI chemicals managed as waste. For all appropriate questions, report only the quantity, in pounds, of the reported TRI chemical itself. Do not include the weight of water, soil, or other waste constituents. When reporting on the metal category compounds, report only the amount of the metal portion of the compound as you do when estimating release amounts. Here's what you will find in Section 8:

- Sections 8.1 through 8.9 must be completed for each TRI chemical.
- Section 8.10 must be completed only if a source reduction activity was newly implemented specifically (in whole or in part) for the reported TRI chemical during the reporting year.
- Section 8.11 allows you to indicate if you have attached additional optional information on source reduction, recycling, or pollution control activities implemented at any time at your facility.
- Sections 8.1 through 8.7 require reporting of quantities for the current reporting year, the prior year, and quantities anticipated in both the first year immediately following the reporting year and the second year following the reporting year (future estimates).

Column A: Prior Year
Quantities for Sections 8.1 through 8.7 must be reported for the year immediately preceding the reporting year in column A. For reports due July 1, 2002 (reporting year 2001), the prior year is 2000. Information available at the facility that may be used to estimate the prior year's quantities include the prior year's Form R submission, supporting documentation, and recycling, energy recovery, treatment, or disposal operating logs or invoices.

Column B: Current Reporting Year
Quantities for Sections 8.1 through 8.7 must be reported for the current reporting year in column B.

Columns C and D: Following Year and Second Following Year
Quantities for Sections 8.1 through 8.7 must be estimated for 2002 and 2003. EPA expects reasonable future quantity estimates using a logical basis. Information available at the facility to estimate quantities of the chemical expected during these years include planned source reduction activities, market projections, expected contracts, anticipated new product lines, company growth projections, and production capacity figures.

Quantities Reportable in Sections 8.1–8.7
Section 8 of Form R uses data collected to complete Part II, Sections 5 through 7. For this reason, Section 8 should be completed last. Sections 8.1, 8.3, 8.5, 8.7, and 8.8 use data collected to complete sections 5 and 6 of Form R. The relationship between sections 5, 6, and 8.8 to sections 8.1, 8.3, 8.5, and 8.7 are provided below in equation form.

Section 8.1. Report releases pursuant to EPCRA section 329(8) including "any spilling, leaking, pumping, pouring, emitting, emptying, discharging, injecting, escaping, leaching, dumping, or disposing [on-site or off-site] into the environment (including the abandonment of barrels, containers, and other closed receptacles)." This includes on-site releases in section 5 and off-site releases in section 6 (releases plus transfers to disposal and transfers to POTWs of metals and metal compounds), but excludes quantities reported in sections 5 and 6 due to remedial actions, catastrophic events, or non-production related events (see the discussion on section 8.8.).

§ 8.1 = § 5 + § 6.2 (disposal) + § 6.1 (metals and metal category compounds only) - §8.8 (on-site release or off-site disposal due to catastrophic events)

Sections 8.2 and 8.3. These relate to a TRI chemical or a mixture containing a TRI chemical that is used for energy recovery on-site or is sent off-site for energy recovery.

Metals and metal category compounds cannot be combusted for energy recovery. For metals and metal category compounds, enter NA in Sections 8.2 and 8.3.

Sections 8.4 and 8.5. These relate to a TRI chemical in a waste that is recycled on-site or is sent off-site for recycling.

§ 8.4 is reported in section 8 only. It does not come from another part of the form.

§ 8.5 = § 6.2 (recycling) – § 8.8 (off-site recycling due to catastrophic events)1
Section 8.6 and 8.7. These relate to a TRI chemical (except for metals and metal category compounds) or a waste containing a TRI chemical that is treated on-site or is sent to a POTW or other off-site location for waste treatment.

§ 8.6 is reported in section 8 only

§ 8.7 = § 6.1 (excluding metal/metal category compounds) + § 6.2 (treatment) – § 8.8 (off-site treatment due to catastrophic events)

8.8 Quantity Released to the Environment as a Result of Remedial Actions, Catastrophic Events, or One-Time Events Not Associated with Production Processes
In Section 8.8, enter the total quantity of the TRI chemical released directly into the environment or sent off-site for recycling, energy recovery, treatment, or disposal during the reporting year due to any of the following events:

- remedial actions
- catastrophic events such as earthquakes, fires, or floods; or
- one-time events not associated with normal or routine production processes.

These quantities should not be included in Sections 8.1 through 8.7

Avoid Double-Counting in Sections 8.1 Through 8.8
Do not double- or multiple-count quantities in Sections 8.1 through 8.7. The quantities reported in each of those sections should be mutually exclusive. Do not multiple-count quantities entering sequential reportable activities.

8.9 Production Ratio or Activity Index
For Section 8.9, you must provide a ratio of reporting year production to prior year production, or provide an "activity index" based on a variable other than production that is the primary influence on the quantity of the reported TRI chemical recycled, used for energy recovery, treated, or released. The ratio or index must be reported to the nearest tenths or hundredths place (i.e., one or two digits to the right of the decimal point).

If the manufacture, processing, or use of the reported TRI chemical began during the current reporting year, enter NA as the production ratio or activity index. Note, this is not to be reported as a percent (i.e., report 1.10 for a 10% increase, not 110%).

It is important to realize that if your facility reports more than one reported TRI chemical, the production ratio or activity index may vary for different chemicals. For facilities that manufacture reported TRI chemicals, the quantities of the TRI chemical(s) produced in the current and prior years provide a good basis for the ratio because that is the primary business activity associated with the reported TRI chemical(s). In most cases, the production ratio or activity index must be based on some variable of production or activity rather than on TRI chemical or material usage. Indices based on TRI chemical or material usage may reflect the effect of source reduction activities rather than changes in business activity. TRI chemical or material usage is therefore not a basis to be used for the production ratio or activity index where the TRI chemical is "otherwise-used" (i.e., non-incorporative activities such as extraction solvents, metal degreasers, etc.).

While several methods are available to the facility for determining this data element, the production ratio or activity index must be based on the variable that most directly affects the quantities of the TRI chemical recycled, used for energy recovery, treated, or released. Examples of methods applicable to metal finishers include:

- Metal finishing sales in 2001 divided by metal finishing sales in 2000 (job shops only);
- Metal finishing labor hours in 2001 divided by metal finishing labor hours in 2000;
- Surface area finished in 2001 divided by surface area finished in 2000;
- Pounds of fasteners finished in 2001 divided by pounds of fasteners finished in 2000;
- Rectifier amp-hours in 2001 divided by rectifier amp-hours in 2000;
- Layer surface area in 2001 divided by layer surface area in 2000 (PWB facilities).

8.10 Did Your Facility Engage in Any Source Reduction Activities for This Chemical During the Reporting Year?

Section 8.10 must be completed only if a source reduction activity was newly implemented specifically (in whole or in part) for the reported TRI chemical during the reporting year. If your facility engaged in any source reduction activity for the reported TRI chemical during the reporting year, report the activity that was implemented and the method used to identify the opportunity for the activity implemented. If your facility did not engage in any source reduction activity for the reported TRI chemical, enter NA in Section 8.10.1 and answer Section 8.11.

Source reduction means any practice that:

- Reduces the amount of any hazardous substance, pollutant, or contaminant entering any wastestream or otherwise released into the environment (including fugitive emissions) prior to recycling, energy recovery, treatment, or disposal; and
- Reduces the hazards to public health and the environment associated with the release of such substances, pollutants, or contaminants.

The term includes equipment or technology modifications, process or procedure modifications, reformulation or redesign of products, substitution of raw materials, and improvements in housekeeping, maintenance, training, or inventory control. The term source reduction does not

include any practice that alters the physical, chemical, or biological characteristics or the volume of a hazardous substance, pollutant, or contaminant through a process or activity that itself is not integral to and necessary for the production of a product or the providing of a service.

Source reduction activities do not include recycling, using for energy recovery, treating, or disposing of a TRI chemical. Report in this section only the source reduction activities implemented to reduce or eliminate the quantities reported in Sections 8.1 through 8.7. The focus of the section is only those activities that are applied to reduce routine or reasonably anticipated releases and quantities of the reported TRI chemical recycled, treated, used for energy recovery, or disposed. Do not report in this section any activities taken to reduce or eliminate the quantities reported in Section 8.8. If you have fewer than four source reduction codes in Section 8.10, an NA should be placed in the first column of the first unused row to indicate the termination of the sequence. If all four rows are used, there is no need to terminate the sequence. If there are more than four source reduction codes, photocopy page 5 of Form R as many times as necessary and then number the boxes consecutively for each source reduction activity. Enter NA when the sequence has terminated, unless the sequence ends at 4, 8, 12, 16, etc. source reduction codes.

Source Reduction Activities
You must enter in the first column of Section 8.10, "Source Reduction Activities," the appropriate code(s) indicating the type of actions taken to reduce the amount of the reported TRI chemical released (as reported in Section 8.1), used for energy recovery (as reported in Sections 8.2–8.3), recycled (as reported in Sections 8.4–8.5), or treated (as reported in Sections 8.6–8.7). The list of codes below includes many, but not all, of the codes provided in the RCRA biennial report.

Source Reduction Activity Codes:

Good Operating Practices

- W13 Improved maintenance scheduling, record keeping, or procedures
- W14 Changed production schedule to minimize equipment and feedstock changeovers
- W19 Other changes made in operating practices Inventory Control
- W21 Instituted procedures to ensure that materials do not stay in inventory beyond shelf-life
- W22 Began to test outdated material — continue to use if still effective
- W23 Eliminated shelf-life requirements for stable Materials
- W24 Instituted better labeling procedures
- W25 Instituted clearinghouse to exchange materials that would otherwise be discarded
- W29 Other changes made in inventory control Spill and Leak Prevention
- W31 Improved storage or stacking procedures
- W32 Improved procedures for loading, unloading, and transfer operations
- W33 Installed overflow alarms or automatic shut-off Valves
- W35 Installed vapor recovery systems
- W36 Implemented inspection or monitoring program of potential spill or leak sources

W39 Other changes made in spill and leak prevention
W40 Raw Material Modifications
W41 Increased purity of raw materials
W42 Substituted raw materials
W49 Other raw material modifications made Process Modifications
W51 Instituted re-circulation within a process
W52 Modified equipment, layout, or piping
W53 Used a different process catalyst
W54 Instituted better controls on operating bulk containers to minimize discarding of empty containers
W55 Changed from small volume containers to bulk containers to minimize discarding of empty containers
W58 Other process modifications made Cleaning and Decreasing
W59 Modified stripping/cleaning equipment
W60 Changed to mechanical stripping/cleaning devices (from solvents or other materials)
W61 Changed to aqueous cleaners (from solvents or other materials)
W63 Modified containment procedures for cleaning units
W64 Improved draining procedures
W65 Redesigned parts racks to reduce drag out
W66 Modified or installed rinse systems
W67 Improved rinse equipment design
W68 Improved rinse equipment operation
W71 Other cleaning and decreasing modifications made Surface Preparation and Finishing
W72 Modified spray systems or equipment
W73 Substituted coating materials used
W74 Improved application techniques
W75 Changed from spray to other system
W78 Other surface preparation and finishing modifications made Product Modifications
W81 Changed product specifications
W82 Modified design or composition of product
W83 Modified packaging
W89 Other product modifications made

Methods to Identify Activity In columns a through c of Section 8.10, the "Methods to Identify Activity," you must enter one or more of the following code(s) that correspond to those internal and external method(s) or information sources you used to identify the possibility for a source reduction activity implementation at your facility. If more than three methods were used to identify the source reduction activity, enter only the three codes that contributed most to the decision to implement the activity.

T01 Internal pollution prevention opportunity audit(s)
T02 External pollution prevention opportunity audit(s)
T03 Materials balance audits
T04 Participative team management

T05	Employee recommendation (independent of a formal company program)
T06	Employee recommendation (under a formal company program)
T07	State government technical assistance program
T08	Federal government technical assistance program
T09	Trade association/industry technical assistance Program
T10	Vendor assistance
T11	Other

8.11 Is Additional Optional Information on Source Reduction, Recycling, or Pollution Control Activities Included with this Report?

Check "Yes" for this data element if you have attached to this report any additional *optional* information on source reduction, recycling, or pollution control activities you have implemented in the reporting year or in prior years for the reported TRI chemical. If you are not including additional information, check "No." If you submit additional optional information, try to limit this information to one page that summarizes the source reduction, recycling, or pollution control activities. If there is a contact person at the facility, other than the technical or public contact provided in Part I, Section 4, the summary page should include that person's name and telephone number for individuals who wish to obtain further information about those activities. Also submit a copy of this additional information to the appropriate state agency as part of the Form R submittal to that agency.

References

1. U.S. EPA, Toxic Chemical Release Inventory Reporting Forms and Instructions, EPA 260-B-02-001, February 2002.
2. U.S. EPA EPCRA Section 313 Questions and Answers (Revised 1998 Version), EPA 745-B-98-004, December 1998.
3. U.S. EPA, Emergency Planning and Community Right to Know Act – Section 313, Guidance for Reporting Releases and Other Waste Management Quantities of Toxic Chemicals: Lead and Lead Compounds, EPA 260-B-01-027, December 2001.
4. U.S. EPA, Federal Register 40 CFR Part 372, Lead and Lead Compounds; Lowering of Reporting Thresholds; Community Right-to-Know Chemical Release Reporting; Final Rule; January, 17, 2001.
5. National Metal Finishing Resource Center [web site], http://www.NMFRC.org.

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Appendix A
EPA Form R for 2001 TRI Reporting

Download from: http://www.epa.gov/tri/report/index.htm

Appendix B

TRI Lead Reporting Determination Worksheet

Use this worksheet to determine if you need to submit a TRI Form R for lead/lead compounds.

TRI Lead Reporting Threshold Worksheet

Did you have 10 or more employees or equivalent (20,000 man-hours) last year? If no, you do not need to submit a Form R. If yes, use this worksheet to determine if you need to submit a TRI report (Form R) for lead (Pb) or lead compounds. Retain this worksheet and all support data and calculations for your records, even if you do not need to submit a TRI lead report.

1. Do you perform any of the following processes and release 0.5 lbs of lead to the environment (wastewater, sludge disposal/recycle, spent solutions)? If yes, you must submit a TRI report for lead.
   - Chromium plating (except Cr+3)
   - Sulfuric acid anodizing using lead cathodes
   - Any electrolytic process, including cleaning, that use lead electrodes
   - Lead and tin/lead plating
2. Do you operate any of the following processes near or above the specified levels? If yes, there is a good chance you need to submit a TRI Pb report. Also, consider lower production levels if you operate more than one of these processes. Use the table below to determine if you need to report.
   - Zinc plating with anode use greater than 700,000 pounds per year
   - Tin plating with anode use greater than 50,000 pounds per year
   - Brass plating with anode use greater than 70,000 pounds per year.
   - Nickel plating with anode use greater than 380,000 pounds per year
   - Copper plating with anode use greater than 640,000 pounds per year
   - Processing large volumes of leaded base metals
   - Wastewater treatment (it only takes 1 mg/l Pb in your raw wastewater to exceed the Pb threshold, if you have a flow of 10.3 million gallons per year or more).
3. Review your operation for other potential sources of lead such as burnishing of zinc die castings and polishing operations. Use the table below to determine if you need to submit a TRI lead report.

TRI Chemical Name	**Source of TRI Chemical, (e.g., anodes, wastewater, sludge)**	**Quantity of TRI Chemical**			**Data Source (e.g., purchase records, analytical data)**
		Manufactured*	**Processed***	**Otherwise Used***	
Lead					
Lead					
Lead Compound					
Lead Compound					
Lead Compound					
Subtotals		**Lbs.**	**lbs.**	**lbs.**	
Threshold		**100 lbs.**	**100 lbs.**	**100 lbs.**	

*If any of the three subtotals exceeds the 100 lbs. threshold, reporting is required for all activities at your facility involving lead. For definitions of "manufactured," "processed," and "otherwise used," see http://www.nmfrc.org/tri.cfm.

You are not required by law to do any additional analytical work to make TRI determinations. However, you must use whatever data you are required by law to collect/retain such as wastewater monitoring data and RCRA manifests. You must also use other data and information that are available to you such as sludge analyses and anode assays. When calculating the quantity of lead compounds, be certain to calculate the full weight of the compound, not just the weight of the lead. For example, if you have lead in your wastewater, for each pound of lead you will "manufacture" 1.16 pounds of lead compounds. Go to www.nmfrc.org/tri.cfm for additional information.

Appendix C

List of TRI Chemicals Commonly

Reported by Metal Finishers

The following lists are chemicals most often reported by metal finishing facilities for TRI. CAS numbers are shown in parentheses. For a complete list of TRI chemicals and their threshold limits, see reference 1.

Metals and Metal Compounds*

aluminum (fume or dust only) (7429-90-5)
cadmium (7740-43-9)
cadmium compounds (N078)
chromium (7740-47-3)
chromium compounds (N090)
copper (7740-50-8)
copper compounds (N100)
lead (7439-92-1)
lead compounds (N420)
manganese (7439-96-5)
manganese compounds (N450)
nickel (7440-02-0)
nickel compounds (N495)
silver (7740-22-4)
silver compounds (N740)
zinc (fume or dust only) (7740-66-6)

*You only need to submit one TRI Form R to cover both a metal and its compound. For example, submit only one Form R to cover both lead and lead compounds. In such cases, report the compound name and CAS number in Section 1.1 and 1.2 of Part II.

Acids

hydrochloric acid (aerosol form only) (7647-01-0)
nitric acid (7697-37-2)
sulfuric acid (aerosol form only) ()

Other Inorganics

ammonia (7664-41-7)
ammonium nitrate
chlorine (7782-50-5)
cyanide compounds (N106)
nitrate compounds (N511)

Solvents/Other Organics

certain glycol ethers (N230)
ethylbenzene (100-41-4)
formaldehyde (50-00-0)
methyl ethyl ketone (78-93-3)
methyl isobutyl ketone (108-10-1)
tetrachloroethylene (127-18-4)
toluene (108-88-3)
xylene (mixed isomers) (1330-20-7)

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Appendix D

Conversion Factors for Lead Compounds

If you know the weight of the lead compound and want to calculate the weight of lead only, use this table.

Lead Compound	Conversion Factor To determine the quantity of "lead" in the lead compound, multiply the weight of the compound by this factor.
Lead chromate	0.641
Lead sulfate	0.685
Lead sulfide	0.862
Lead fluoborate	0.543
Lead nitrate	0.625
Lead hydroxide	0.862

If you know the weight of lead and you want to know the weight of a lead compound, use this table.

Lead Compound	Conversion Factor To determine the quantity of a lead compound that could be made from a given weight of lead, multiply the weight of lead by this factor.
Lead chromate	1.56
Lead sulfate	1.46
Lead sulfide	1.16
Lead fluoborate	1.84
Lead nitrate	1.60
Lead hydroxide	1.16

Appendix E

Section 3 Worksheet

Use the Section 3 worksheet to determine which boxes you should check in Sections 3.1, 3.2 and 3.3. The examples provided in this worksheet assume that you are reporting for lead compounds. No guidance is provided here for other TRI chemicals.

Form R Section 3. Activities and Uses of the Toxic Chemical at the Facility

In this section, check all the boxes that apply for each activity. Do not enter quantities. The following tables were prepared to help you select the correct boxes associated with lead and lead compounds. Common conditions are listed and the boxes that typically pertain to those conditions are checked. Use this page as guidance only. Your situation may be different.

3.1 Manufacture the toxic chemical (For metal finishers, "manufacture" most frequently pertains to the incidental manufacture of lead compounds in metal finishing baths or during wastewater treatment. There are exceptions, including lead or tin/lead plating and on-site fabrication of lead electrodes.)

Source(s) of Lead at Your Facility Check (√) All that Apply		A Produced at the Facility	B Imported by Facility into U.S.	C On-Site Use/Processing	D Sale/ Distribution	E As Byproduct	F As Impurity
	Chromium electroplating (lead anodes, masking tape, tank liners)	√	√*	√**		√	
	Sulfuric acid and hard coat anodizing (lead cathodes, cooling coils, tank liners)	√	√*	√**		√	
	Lead impurities in anodes (e.g., zinc anodes)	√	√*			√	
	Lead or tin/lead electroplating	√	√*		√		
	Leaded base metals that release lead during aqueous processing	√	√*			√	
	Treatment of wastewater containing lead	√	√*			√	
	Other:						
	Other:						
Place a check in a cell of this row, if for <u>any</u> above source of lead at your facility, there is a check mark in the corresponding cell. Use the results in this row to report in Section 3.1.***							

*Check only if your company imported any of the original articles containing lead from outside the U.S. For example, you purchase lead anodes form Canadian supplier.
**Check only if your company fabricates its own lead electrodes on-site.
***For example, if you perform chromium electroplating and do not import lead, place a check mark in this row under "Produced at the Facility," and "As Byproduct".

To evaluate "other" sources of lead/lead compounds use the following definitions/procedures:
Persons who manufacture (including import) the TRI chemical must check at least one of the following:

A. ***Produce*** — The TRI chemical is produced at the facility.
B. ***Import*** — The TRI chemical is imported by the facility into the Customs Territory of the United States.

And check at least one of the following:

C. ***For on-site use/processing*** — The TRI chemical is produced or imported and then further processed or otherwise used at the same facility. If you check this block, generally you should also check at least one item in Part II, Section 3.2 or 3.3.
D. ***For sale/distribution*** — The TRI chemical is produced or imported specifically for sale or distribution outside the manufacturing facility.
E. ***As a byproduct*** — The TRI chemical is produced coincidentally during the manufacture, processing, or otherwise use of another chemical substance or mixture and, following its production, is separated from that other chemical substance or mixture. TRI chemicals produced as a result of waste management are also considered byproducts.
F. ***As an impurity*** — The TRI chemical is produced coincidentally as a result of the manufacture, processing, or otherwise use of another chemical but is not separated and remains in the mixture or other trade name product with that other chemical.

In summary, if you are a manufacturer of the TRI chemical, you must check (a) and/or (b), and at least one of (c), (d), (e), and (f).

3.2 Process the toxic chemical.

	Source(s) of Lead at Your Facility Check (√) All that Apply	A As a Reactant	B As a Formulation Component	C As an Article Component	D Repackaging	E As an Impurity
	Chromium electroplating (lead anodes, masking tape, tank liners)	√			√*	
	Sulfuric acid and hard coat anodizing (lead cathodes, cooling coils, tank liners)					
	Lead impurities in anodes (e.g., zinc anodes)					
	Lead or tin/lead electroplating	√		√		
	Leaded base metals that release lead during aqueous processing					
	Treatment of wastewater containing lead					
	Other:					
	Other:					
Place a check in a cell of this row, if for <u>any</u> above source of lead at your facility, there is a check mark in the corresponding column. Use the results in this row to report in Section 3.2.						

*Check if you fabricate anodes on-site and sell them or if you purchase large quantities of anodes and resell them in smaller quantities.

Use the following definitions to evaluate "Other" sources of lead/lead compounds.
Persons who process the TRI chemical must check at least one of the following:

A. ***As a reactant*** — A natural or synthetic TRI chemical is used in chemical reactions for the manufacture of another chemical substance or of a product. Includes but is not limited to, feedstocks, raw materials, intermediates, and initiators.
B. ***As a formulation component*** — A TRI chemical is added to a product (or product mixture) prior to further distribution of the product that acts as a performance enhancer during use of the product. Examples of TRI chemicals used in this capacity include additives and dyes.
C. ***As an article component*** — A TRI chemical becomes an integral component of an article distributed for industrial, trade, or consumer use. For example, lead or tin/lead plating.
D. ***Repackaging*** — This consists of processing or preparation of a TRI chemical (or product mixture) for distribution in commerce in a different form, state, or quantity. This includes the situation where lead anodes are purchased in bulk and resold in smaller quantities.
E. ***As an impurity*** — The TRI chemical is processed but is not separated and remains primarily in the mixture or other trade name product with that/those other chemical(s).

3.3 Otherwise use the toxic chemical:

	Source(s) of Lead at Your Facility Check (√) All that Apply	A As a Chemical Process Aid	B As a Manufacturing Aid	C Ancillary or Other Use
	Chromium electroplating (lead anodes, masking tape, tank liners)		√	
	Sulfuric acid and hard coat anodizing (lead cathodes, cooling coils, tank liners)		√	
	Lead impurities in anodes (e.g., zinc anodes)			
	Lead or tin/lead electroplating			
	Leaded base metals that release lead during aqueous processing			
	Treatment of wastewater containing lead			
	Other:			
	Other:			
Place a check in a cell of this row, if for <u>any</u> above source of lead at your facility, there is a check mark in the corresponding column. Use the results in this row to report in Section 3.3.				

Use the following definitions to evaluate "Other" sources of lead/lead compounds.

Persons who otherwise use the TRI chemical must check at least one of the following:

A. ***As a chemical processing aid*** — A TRI chemical that is added to a reaction mixture to aid in the manufacture or synthesis of another chemical substance but is not intended to remain in or become part of the product or product mixture is otherwise used as chemical processing aid. Examples include catalysts, inhibitors, initiators, and reaction terminators.

B. ***As a manufacturing aid*** — A TRI chemical that aids the manufacturing process but does not become part of the resulting product and is not added to the reaction mixture during the manufacture or synthesis of another chemical substance is otherwise used as a manufacturing aid. An example is lead electrodes.

C. ***Ancillary or other use*** — A TRI chemical is used at a facility for purposes other than aiding chemical processing or manufacturing as described above is otherwise used as ancillary or other use. Examples include, but are not limited to, cleaners, degreasers, lubricants, fuels, TRI chemicals used for treating waste

Appendix F. State Designated Section 313 Contacts

Submitting by Diskette to States: As of the publication of this book the following states confirmed that they accept diskette submissions. Do not send submissions via email.

AK	**GA**	**LA**	**NH**	**OR**	**VT**
AL	**HI**	**MD**	**NJ**	**PA**	**WA**
AZ[2]	**IA**	**MI**	**NM**	**SC[1]**	**WI**
CA	**ID**	**MN**	**NV**	**SD**	**WV**
CO	**IL**	**MO**	**NY**	**TX**	**WY**
DE	**IN**	**MT**	**OH**	**UT**	
FL	**KS**	**ND**	**OK**	**VA**	

If your state is not listed here, please contact your state office to confirm that paper submissions are required.

Alabama
Mr. Kirk Chandler
Alabama Emergency Response Commission
Alabama Department of Environmental Management
P.O. Box 301463
Montgomery, AL 36130-1463
(334) 260-2717; fax (334) 272-8131
kfc@adem.state.al.us

Alaska
Ms. Camille Stephens
Department of Environmental Conservation
Government Preparedness and Response Program
410 Willoughby Ave., Suite 105
Juneau, AK 99801-1795
(907) 465-5220; fax (907) 465-5244
cstephen@envircon.state.ak.us

American Samoa
Mr. Togipa Tausaga
American Samoa EPA
American Samoa Government
Office of the Governor
Pago Pago, AS 96799
International Number (684) 633-2304;
fax (684) 633-5801
asepa@samoatelco.com

Arizona[2]
Mr. Daniel Roe, Executive Director
Arizona Emergency Response Commission
5636 East McDowell Road
Phoenix, AZ 85008
(602) 231-6345; fax (602)392-7519
roed@dem.state.az.us

Mr. Bill Quinn
Arizona Department of Environmental Quality
Pollution Prevention Program, Mail Stop M0636B
3033 N. Central
Phoenix, AZ 85012
(602) 207-4203; fax (602) 207-4538
quinn.bill@ev.state.az.us

Arkansas
Mr. Robert Johns
Arkansas Dept. of Emergency Management
P.O. Box 758
Conway, AR 72203-0758
(501) 730-9790; fax (501) 730-9754
robert.johns@adem.state.ar.us

Certified Mail ONLY
Mr. Robert Johns
Arkansas Dept. of Emergency Management
1835 South Donaghey
Conway, AR 72032

[1] South Carolina accepts only diskette submissions.

[2] Arizona Emergency Response Commission accepts electronic submissions while the Arizona Dept. of Environmental Quality accepts only paper submissions. Submissions must be sent to both agencies.

California
Coordinator
California Environmental Protection Agency
Office of Environmental Information Management
P.O. Box 806
Sacramento, CA 95812-0806
Attn: Toxics Release Inventory
(916) 324-3421; fax (916) 324-1788

Certified or Express Mail Only
California Environmental Protection Agency
Office of Environmental Information Management
400 P Street
Sacramento, CA 95812
Attn: Toxics Release Inventory

Colorado
Mr. Kirk Mills
Pollution Prevention Program
Colorado Department of Public Health and Environment
4300 Cherry Creek Drive South
Denver, CO 80246-1530
(303) 692-2977; fax (303) 782-4969
kirk.mills@state.co.us
http://www.cdphe.state.co.us/environ.asp

Commonwealth of Northern Mariana Islands
Mr. Ignacio V. Cabrera, Director
Division of Environmental Quality
Commonwealth of the Northern Mariana Islands
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Saipan, MP 96950
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Connecticut
Mr. Joseph Pulaski
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Delaware
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Delaware Natural Resource and Environment Control
EPCRA Reporting Program
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156 S. State Street
Dover, DE 19901
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District of Columbia
Ms. Michele Penick
Environmental Planning Specialist
Emergency Response Commission for Title III
2000 14th Street, NW, 8th Floor
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mpenick-oep@dcgov.org

Florida
Mr. Sam Brackett
State Emergency Response Commission
Florida Department of Community Affairs
2555 Shumard Oak Blvd.
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Notes:
(1) If an Indian tribe has chosen to act independently of a state for the purpose of section 313 reporting, facilities located within the Indian community should report to the tribal SERC, or until the SERC is established, the Chief Executive Officer of the Indian tribe, as well as to EPA; (2) Facilities located within the Territories of the Pacific should send a report to the Chief Administrator of the appropriate territory, as well as toEPA.