

Toxic Release Inventory (TRI) Reporting (SARA Title III Section 313)

Precision Machined Products Association

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HZW ENVIRONMENTAL
CONSULTANTS, LLC

TRI Reporting – What is it?

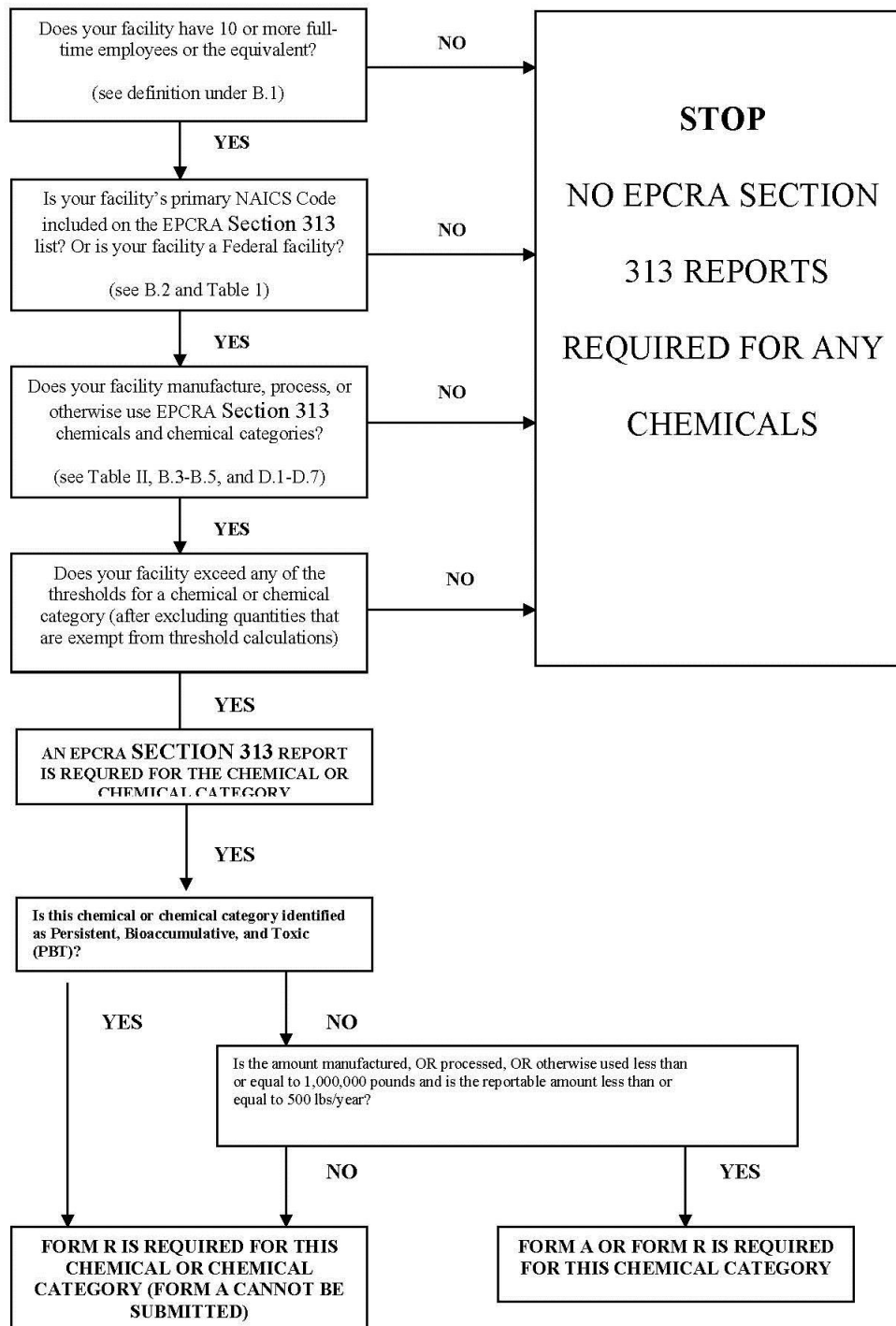
- Part of the Community Right to Know regulations;
- An inventory of what “toxic” chemicals you use during any calendar year (threshold calculations); and,
- If you exceed reporting thresholds of any TRI chemical, you report an “inventory” of releases of that chemical during the calendar year.

TRI Eligibility

- You must determine threshold quantities of TRI chemicals if you:
 - During the previous calendar year (2011) had 10 or more full time employees, or the equivalent of 20,000 employee hours
 - Count all employees, including temporary workers, owners, or a person that works for a parent company but spends time at your establishment, **AND**

TRI Eligibility (con't)

- Your operations have an NAICS code associated with manufacturing (Old SIC codes 20-39)
- There is a link to the NAICS table on the PMPA website, but, generally, if you manufacture, you can be subject to TRI.
- Refer to Page 12 of 2011 TRI Reporting Manual for a decision tree.



TRI Chemicals and Chemical Categories

- If you are subject to TRI reporting, now look at the TRI chemicals list: are any of those chemicals contained in the raw materials you process?
- A link to the TRI Chemicals list (sorted alphabetically and by CAS number) is on the PMPA website. There are 600+ TRI chemicals and chemical categories.
- Watch for the chemical categories, especially under metal/metal categories.

TRI Chemicals and Chemical Categories (con't)

- Common metals and metal categories for machining operations: chromium, nickel, manganese, lead, cobalt.
- If your raw materials contain one or more TRI chemicals, now you have to determine if you *manufacture, process, or otherwise use* any TRI chemicals above threshold quantities.
- Pay attention to the “deminimis” percentages (on the chemical list). If your compounds contains less than the deminimis value, *don't count it* toward the threshold.

What does “manufacture, process or otherwise use” mean?

- Manufacture: produce, prepare, compound, or import a TRI chemical
- Coincidental Manufacture: manufacture a different TRI chemical as a result of manufacturing, processing or otherwise use any other chemical
 - Example: Pretreatment of nitric acid using sodium hydroxide results in the coincidental manufacture of sodium nitrate (Nitrate compounds is a TRI chemical category)

What does “manufacture, process or otherwise use” mean? (con’t)

- Processing: preparation of a TRI chemical after its manufacture for distribution in commerce. Includes a physical or chemical change in a part or material that contains the TRI chemical. Precision machining operations are included under “processing”.
- If the TRI chemical is contained in your product that is sold, you are probably *processing* the chemical.

What does “manufacture, process or otherwise use” mean? (con’t)

- Otherwise use: any use of a TRI chemical that is not covered by manufacture or processing (not including disposal, stabilization or treatment, with a couple of exceptions).
 - Example: Degreasing using methylene chloride or trichloroethylene (among others);
 - Painting operations, where the solvent (e.g. xylene) is “otherwise used”.
 - *Use of tool steel in machining.*

What information do I need to pull together to calculate thresholds?

- Your purchasing records from 2011
- MSDS or other records showing chemical make-up of materials you use
- An example spreadsheet for metals processing is available on PMPA website.
- Use best available information regarding TRI chemical content – your suppliers information, current MSDS, heat specifications. If you use the example spreadsheet, modify the metals percentages based on best available information for your plant.

Calculating Threshold Quantities

- For most chemicals (other than PBT chemicals—which we will discuss), the thresholds are:
 - Manufacturing: 25,000 pounds per year
 - Processing: 25,000 pounds per year
 - Otherwise use: 10,000 pounds per year
- Calculate the threshold for each category separately; if you don't exceed threshold in any individual category, don't report for that chemical.
- Let's look at the example spreadsheet that PMPA prepared.

Calculating Threshold Quantities (con't)

- For example:
 - I machine (process) 316 Stainless steel parts. During 2011, I used 4,000,000 pounds of 316 SS barstock.
 - Barstock contains 17% chromium (a TRI chemical).
 - Therefore, during 2011, I processed 680,000 pounds of chromium. Because I exceed the 25,000 pound threshold, I must prepare a TRI report for chromium.

Calculating Threshold Quantities (con't)

- I degrease parts using trichloroethylene (TCE)
- Degreasing = otherwise used = 10,000 pound threshold.
- During the year, I added 1,000 gallons of new solvent to the degreaser over the period of a year.
- TCE weighs about 12.2 pounds per gallon; therefore I added about 12,200 pounds of solvent to the degreaser.
- Need to prepare a TRI report for TCE because I exceed the otherwise used threshold.

Calculating Threshold Quantities (con't) – Keep O/U and Processing Separate!

- I otherwise use 20,000 pounds of M42 tool steel in my multi-spindle bar machines;
- M42 tool steel contains 8% cobalt (a TRI chemical);
- 20,000 pounds x 8% = 1600 pounds Co (below threshold, otherwise used); AND
- I *process* 2,000,000 pounds of 316 SS;
- 316 SS contains 0.63% Co
- 2,000,000 pounds x 0.63% = 12,600 pounds Co (below threshold processing)
- I do not have to report Co under TRI

Calculating thresholds for PBT Chemicals

- Common PBT chemicals:
 - Lead and lead compounds when it is *not* contained in stainless steel, brass or bronze
 - The PBT-lead threshold is 100 pounds
 - There is no de minimis level for PBT chemicals
 - So, if you process leaded steel or aluminum, the lower threshold applies and there is no de minimis percentage
 - Calculate thresholds for PBT and non-PBT lead separately. If you don't exceed threshold for either, do not report lead.

PBT Chemicals (con't)

- Other common PBT chemicals:
 - Mercury (1 pound threshold)
 - Dioxins
 - Polycyclic Aromatic Compounds

Calculating Threshold Quantities

- Calculate each TRI chemical *processed* for all your raw materials, then add those amounts together for each TRI chemical.
- For instance, add together nickel amounts for nickel contained in all grades of steel, brass and stainless steel where nickel is present >0.1%.
- Do the same for otherwise used and coincidentally manufactured.

Be careful! Your facility can include more than one building!

- Which is what is referred to as a multi-establishment facility: two or more distinct buildings that are under common ownership and are on contiguous properties.
- You must combine the threshold calculations for all establishments to determine if the facility exceeds thresholds.

What about the article exemption?

- Article exemption: the item must meet **all** the following criteria :
 - It must be a manufactured item that is formed to a specific shape or design during manufacture;
 - It must have end use functions dependent in whole or in part upon its shape or design during end use, and;
 - It must not **release** a toxic chemical under normal circumstances of processing or otherwise use of the item at the facility.
 - A “release” is an release of greater than **0.5 pounds of the chemical during the year.**

What do I have to count as a release?

- Examples of releases in a typical machining operation:
 - Metal fines that go out with cloth rags or floor mats
 - Metals (such as lead or chromium) that are contained in process wastewater (mop water, floor cleaners, water from parts cleaning).
 - Metal scrap that goes to a recycling company.
 - Metal contained in your used oil shipped off site.
 - Metal contained in a sludge resulting from waste treatment.
 - Grinding swarf.

Recycling off site is a release!

- EPA considers toxic chemicals “recycled” when the toxic chemicals are recovered for reuse. If toxic chemicals are directly reused without any intervening reclamation or recovery steps the toxic chemicals are re-used for TRI reporting purposes, and do not need to be reported or counted as a release, BUT:

Recycling off site is a release! (con't)

- Changing the relative amounts of the chemicals in an alloy (which usually occurs when scrap from one facility is mixed with scrap from another) equals a reclamation or recovery step and, is, therefore recycling and **must be reported** under TRI.
- If the scrap metal is not mixed with other scrap with varying concentrations of chemicals (on or off site) and can be melted and directly reused, without any recovery steps, then the scrap metal is being **directly reused and does not need to be counted as a release.**
- Refer to the March 2006 guidance document on the PMPA Website.

What other exemptions are there?

- Chemical qualifiers - examples
 - Aluminum as a fume or dust – if you generate Al fume or dust during processing, estimate the amount of Al fume or dust as coincidentally manufactured. If you process Al dust, calculate the entire Al dust amount.
 - Refer to TRI Chemical List
 - If you exceed threshold for a metal and metal compound, complete one report for metal compound only

Threshold Calculations

- Any questions on calculating your threshold quantities?

Calculating Releases

- Only calculate releases for chemicals where you have exceeded thresholds! You must calculate your releases in any form during the reporting year.
- You do not need to get additional lab analyses; you must use “best available information” to determine releases.
- Let’s take a quick look at the TRI reporting Form R.

Review of Form R – Part 1

- Header: TRI ID Number is assigned by EPA. If you are a first time filer, leave blank. Otherwise, it's the same number as last year.
- Section 1: Software (Tri-Me Web) will complete automatically when you choose what chemicals you are reporting for. Otherwise, information is in TRI book, Table 2.
- Section 2: do you want to claim trade secret (the release information is public; none of your calculations are).
- Section 3: Determine who will sign the form

Review of Form R - Part 2

- Section 1 & 2 – Chemical specific information (software will complete for you or info is available in Table II of TRI book).
- Section 3: How did you use the chemical – complete each applicable section. Even if you exceeded thresholds for processing only, but did “otherwise use” the TRI chemical, complete that section. Refer to pp 12-14 in TRI manual. Often it will be processing, as an article component.

Review of Form R – Part 2 con't

- Section 4: Maximum amount of chemical on-site:
 - Reported in range codes (software gives them to you in a drop down menu);
 - Do you keep 1 month of barstock on hand? Then use the total amount of TRI chemical used from threshold calcs, divide by 12 and determine correct range code.

Review of Form R Part 2 (con't)

- Section 4-5: Facility and Contact information
- Section 5: Release of TRI chemical on site
 - 5.1, 5.2 - air emissions
 - 5.3 – releases to storm water
 - 5.4-5.5 – other releases on site; generally “NA” unless you have on-site land impoundments or injection wells.
- Section 6: Off site releases
 - This is where most of your release calculations will be reported

Review of Form R -Part 2 (con't)

- Section 6.1 – to POTW
- Section 6.2 – Other off site vendors (page 51 of manual)
 - List as many vendors as you use for that TRI chemical. Have their name and addresses ready, including county and RCRA ID numbers
 - Determine quantity, how the TRI chemical is disposed or recycled;
 - How did you determine this (monitoring, estimation)?

Review of Form R (con't)

- Section 7 – do you do waste treatment on site, including:
 - Scrubbers
 - Wastewater pretreatment
 - Oil/water separators
 - Mist eliminators
- Only determine treatment of TRI chemical being reported; treatment efficiency can be 0%
- Manual page 63

Review of Form R (con't)

- Section 8:
 - Summarizes all of the information reported in Sections 5 and 6 (column B)
 - If you did not report for that TRI chemical for RY2010, estimate and include in column A
 - Project where production is going in 2012 (column C) and 2013 (column D) and calculate project releases.
- Section 8.9: calculate production ratio:
2011/2010 production.

Calculating Releases – Examples: Metal Scrap

- I know from my scrap shipment records that I shipped 100,000 pounds of scrap 316 SS to the local scrap vendor
- 316 SS contains 17% Chromium
- $100,000 \text{ pounds} \times 17\% = 17,000 \text{ pounds}$ to my vendor, as recycled off site
- Section 6.2, 8.5: recycled (M24 – recycling, metals recovery); basis of estimate – M2 –random measurement

Calculating Releases – Examples: Fines in rags and floor mats

- 100 rags contains 0.5 pounds of SS 316 fines (estimate)
- I use 100 rags per week (supplier information)
- So, I use 5200 rags per year
- I estimate 0.5 pounds metal/100 rags x 5200 rags per year =
- 26 pounds of 316 SS in rags
- 26 pounds x 17% Cr = 4.4 pounds of Cr in rags to supplier
- Section 6.2, 8.1d; M94 (Transfer to waste broker – disposal); “Other” basis of estimate

Calculating Releases – Examples: process wastewater

- I generate process wastewater
- I know through my sewer bills I discharged 10,000 gallons of process wastewater in 2011
- I know through my local sewer district that my wastewater contains 1.0 mg/L Cr.
- $100,000 \text{ gal/yr} \times 3.78 \text{ L/gal} \times 1.0 \text{ mg/L Cr} = 378,000 \text{ mg/yr Cr}$
- $378,000 \text{ mg/yr. Cr} / 453600 \text{ mg/lb} = 0.83 \text{ pounds Cr to sewer}$
- Section 6.1, 8.1d; Basis of estimate M2

Calculating Releases (con't)

- Don't forget storm water, air emissions, any releases/shipments to vendors
- If your total release amount for that chemical to a particular vendor is >0 but <0.5 pounds, report as 0, except for lead and other PBTs
- Once all your releases are calculated and organized, you are ready to complete the TRI report.
- Document all of your information regarding thresholds and releases, including what lab reports you used, MSDS information, assumptions/ estimations made.

Organizing your Information

- You never report your threshold calculations on the TRI form – just the maximum amount on site.
- Organize your release information by:
 - TRI chemical
 - Where it is going (air, sewer, storm water, landfill, hazardous waste disposal) – have vendor name, address and RCRA ID Number
 - What is happening to it (disposal, recycling, etc.)

Completing your Forms

- We have discussed Form R
- Form A can be used for non-PBT chemicals where releases are less than 500 pounds (that includes recycling) and processing amount <1,000,000 pounds of the TRI chemical (refer back to flow chart)
- When reporting metals, calculate and report the weight of the metal only

Filing Electronically

- You must use TRI-me WEB
- Either case, you need to create an account with the Central Data Exchange (CDX) as a certified user and responsible official (can be 2 different people).
- If you used TRI-ME previously, you received an e-mail giving you a TRI access key number.

Filing Electronically (con't)

- If you have not used TRI-Me Web before, you will have to obtain a TRI access key and register as a certifying official— *All this takes time because you have to mail info to EPA.*
- Reports are submitted to some states and USEPA simultaneously
http://www.epa.gov/tri/stakeholders/state/state_exchange/index.htm

Information Sources

- PMPA web site links
- <http://www.epa.gov/tri/report/index.htm>
- <http://www.epa.gov/tri/contacts/contacts.htm>
- http://tri.custhelp.com/cgi-bin/tri.cfg/php/enduser/std_alp.php
- There is a Q&A document in the software
- E-mail questions to Miles Free at PMPA and he will pass them along to HzW – mfree@pmpa.org. Please include your contact information in e-mail.
- Reports are due to USEPA by July 1, 2012

Questions?

- Thank you,

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