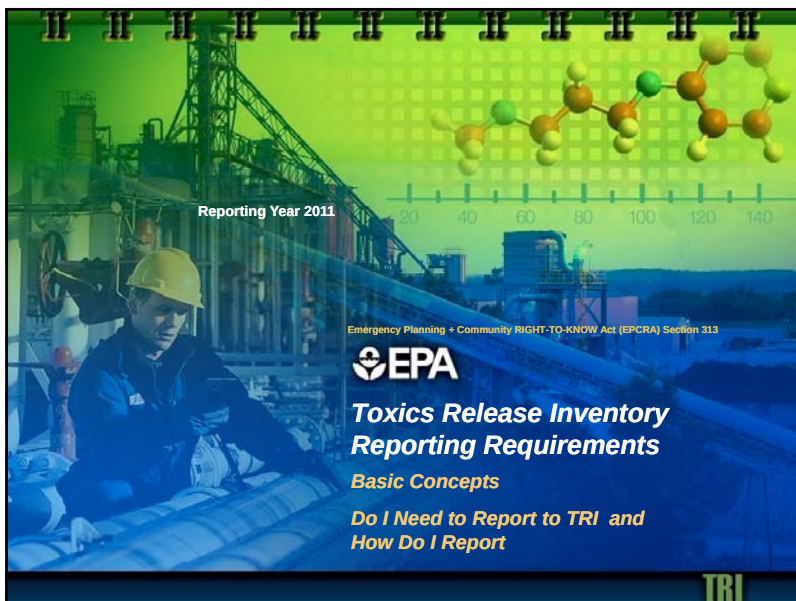




TRI REPORTING REQUIREMENTS

TRI Training Module Agendas

Basic Concepts Module

1. Introduction
2. Covered Sectors
3. Thresholds (PBT and Non-PBT)
4. Reporting Exemptions
5. Threshold Determinations
6. Overview of Form R
7. Alternate Threshold Rule (Form A)

Advanced Concepts Module

1. Recent TRI Program Changes
2. Advanced Reporting Guidance
3. Detailed PBT Guidance
4. Tools and Assistance
5. TRI-MEweb Updates

2/17/2012

TRI

2



TRI REPORTING REQUIREMENTS

What is EPCRA Section 313 & TRI?

- Section 313 of EPCRA requires facilities to file a TRI report annually for each Section 313 chemical exceeding an activity threshold (manufacturing, processing or otherwise using)
 - Section 313 chemical list contains over 600 chemicals and chemical categories
- Facilities exceeding an activity threshold must report if they are:
 - In a “covered sector” (defined by NAICS codes); and
 - Have 10 or more employees
- Submit TRI reports to U.S. EPA, and either
 - designated state officials, or
 - designated tribal office

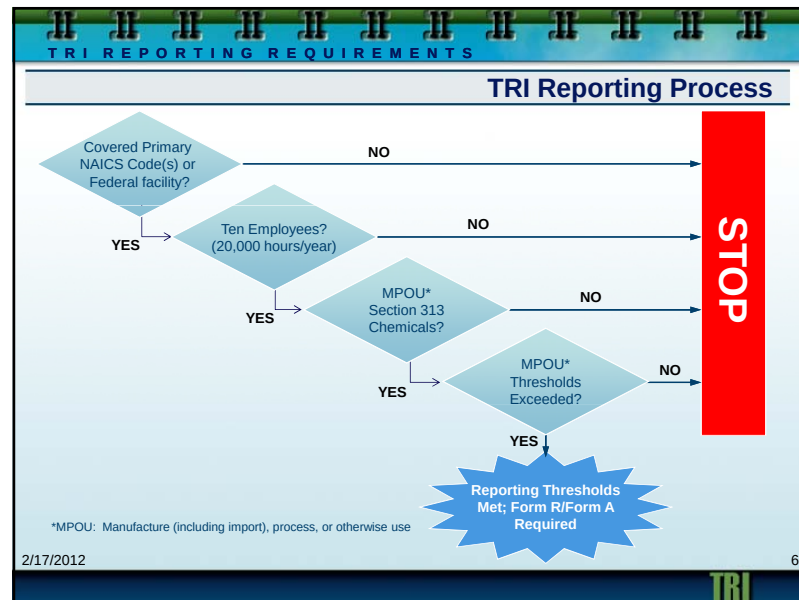
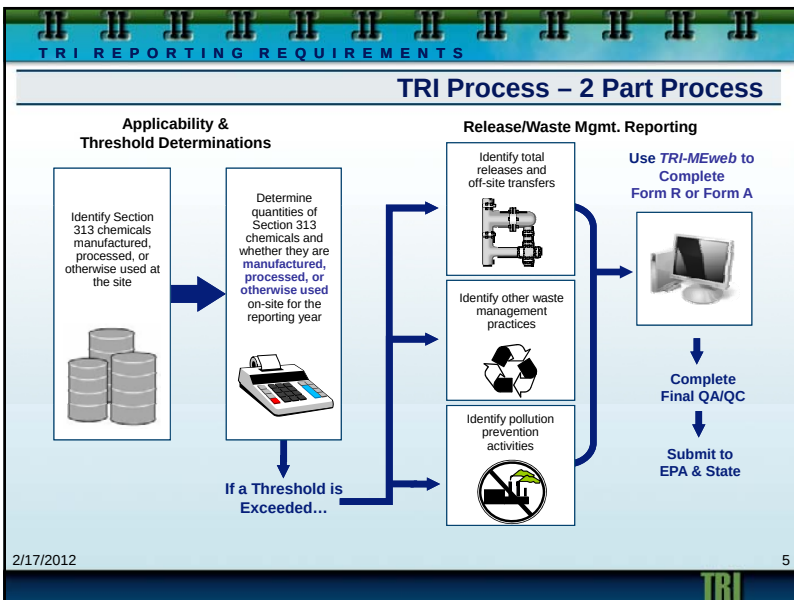
.....by July 1st following the calendar year's activities (aka Reporting Year (RY))

[e.g. July 1, 2012 deadline for RY 2011 (January 1 - December 31, 2011) activities]

2/17/2012

TRI

4



TRI REPORTING REQUIREMENTS

Industrial Sectors Covered

Industrial Sector	Notes
Manufacturing	Facilities engaged in the mechanical or chemical transformation of materials or substances into new products
Metal mining	Not including metal mining services, and uranium, radium, and vanadium ores
Coal mining	Not including coal mining services
Electrical utilities	Limited to facilities that combust coal and/or oil for the purpose of generating electricity for distribution in commerce
Treatment, Storage, and Disposal facilities	Limited to facilities regulated under the Resource Conservation and Recovery Act, Subtitle C, 42 U.S.C. Section 6921 et seq.
Solvent recovery services	Limited to facilities primarily engaged in solvent recovery services on a contract or fee basis
Chemical distributors	Facilities engaged in the wholesale distribution of chemicals and allied products
Petroleum bulk terminals	Facilities engaged in the wholesale distribution of crude petroleum and petroleum products from bulk liquid storage facilities

TRI 8

Covered NAICS Codes

- 2007 North American Industry Classification System (NAICS) codes are used for TRI reporting.
- To determine whether your facility's primary NAICS code is covered by TRI regulations, see:
www.epa.gov/tri/lawsandregs/naic/ncodes.htm

2/17/2012

9

TRI

Federal Facilities

- Federal facilities (covered by Executive Order 13423 and its implementing instructions)
 - **Owned or operated by Executive Branch agencies**
 - No restrictions based on NAICS code
 - Includes federal prisons, national parks, federal hospitals
 - With 10 or more full-time employees (equivalent of 20,000 hours per year)
 - That exceed manufacture, and/or process, and/or otherwise use thresholds of a listed chemical
 - Government unit responsible for reporting on activities conducted at Federal facilities
 - Does not change existing requirements of private contractors of government owned contractor operated (GOCO) facility to report.



2/17/2012

10

TRI

Definition of "Facility"

- "Facilities" determine whether or not TRI reporting is required
 - Primary NAICS code determination at facility level
 - Employee threshold determination at facility level
 - Chemical threshold determinations made at facility level
- "Facility - 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 (or by any person which controls, is controlled by, or under common control with, such person)." (EPCRA § 329 (4))

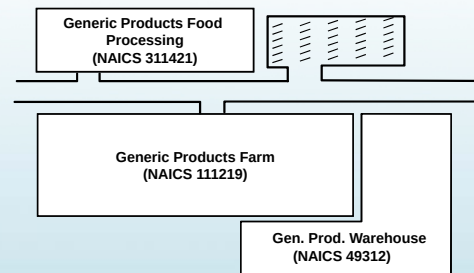
2/17/2012

11

TRI

Example of a Multi-Establishment Facility

- Three separate establishments located on contiguous/ adjacent property owned by same person(s), is one facility under EPCRA (40 CFR §§ 372.22(b) and 372.3))
 - Establishment - unique and separate economic unit of a facility (See 40 CFR § 372.3)



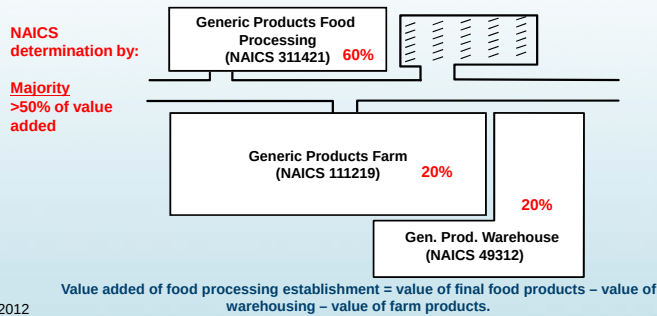
2/17/2012

12

TRI

Multi-Establishment Facility

- Three separate establishments located on contiguous/ adjacent property owned by same person(s), is one facility under EPCRA (40 CFR §§ 372.22(b) and 372.3))

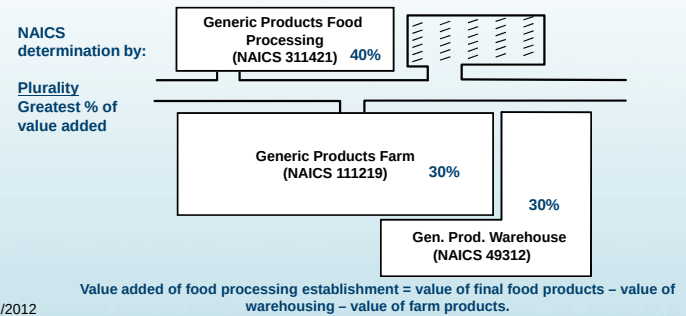


2/17/2012

13

Multi-Establishment Facility

- Three separate establishments located on contiguous/ adjacent property owned by same person(s), is one facility under EPCRA (40 CFR §§ 372.22(b) and 372.3))

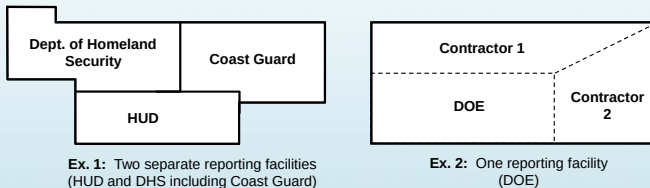


2/17/2012

14

Multi-Establishment Facility

- Determining how facilities report
 - Federal facilities and government-owned, contractor-operated facilities (GOCOs)
 - See Appendix A of Reporting Forms and Instructions for guidance specific to federal facilities



2/17/2012

15

Employee Threshold

- 10 or more full-time employee equivalents (i.e., 20,000 hours) (40 CFR §§ 372.3 and 372.22(a))
 - Worked for the facility
 - Includes operational staff, administrative staff, contractors, dedicated sales staff, company drivers, off-site direct corporate support
 - Does NOT include contract drivers or contractors performing intermittent service functions such as janitorial services (1998 Q&A #21, #29 and #38)
 - Add all hours from part-time and full-time employees
- Determinations based on available time management systems/data

2/17/2012

16

Quiz #1 Question 1

1. Would the facility described below be covered by Section 313 of EPCRA (TRI) and, therefore, need to consider its toxic chemical use for possible reporting? Select Yes or No.

A manufacturing facility in a TRI-covered NAICS code, owned by ABC Corporation, with 100 full-time employees

YES

NO

17

TRI

Quiz #1 Question 2

2. Would the facility described below be covered by Section 313 of EPCRA (TRI) and, therefore, need to consider its toxic chemical use for possible reporting? Select Yes or No.

A maintenance and warehouse facility, owned by ABC Corporation, with 5 full-time employees, a few blocks away from the manufacturing facility described in Question 1.

YES

NO

18

TRI

Quiz #1 Question 3

3. Would the facility described below be covered by Section 313 of EPCRA (TRI) and, therefore, need to consider its toxic chemical use for possible reporting? Select Yes or No.

A maintenance and warehouse facility, owned by ABC Corporation, with only 5 full-time employees, next door to the manufacturing facility described in Question 1

YES

NO

19

TRI



**Section II:
Thresholds (PBT and Non-PBT)**

TRI

Thresholds (PBT and Non-PBT)

- Threshold calculations for each activity are based on cumulative quantities of each Section 313 chemical over the reporting year for the whole facility
- Toxic chemical activity thresholds are treated separately
 - Classify each chemical activity into manufacture, process, or otherwise use
 - Compare amounts in each activity to the toxic chemical's applicable threshold

If any threshold is exceeded, a TRI Report must be prepared and submitted for that chemical

2/17/2012

21

TRI

Section 313 Chemicals (Non-PBT) and Thresholds

- A facility meeting all three applicable criteria must file a TRI Report for a non-PBT Section 313 chemical if the facility:

Non-PBT Thresholds

- Manufactured (including imported)** more than 25,000 pounds of the chemical in the reporting year, or
- Processed** more than 25,000 pounds of the chemical in the reporting year, or
- Otherwise Used** more than 10,000 pounds of the chemical in the reporting year

2/17/2012

22

TRI

Listed PBT* TRI Chemicals

- Within the list of 600+ chemicals and chemical categories, there is a subset designated as being of special concern and commonly referred to as PBT chemicals (40 CFR § 372.28)
- PBT chemicals have lower thresholds and different reporting requirements than the other TRI chemicals
 - Special rules often apply to PBT chemicals
- 20 chemicals and chemical compound categories are classified as PBTs and have lower reporting thresholds

*PBT = Persistent, Bioaccumulative, Toxic

2/17/2012

23

TRI

PBT Chemicals and Thresholds

- PBT chemicals are subject to separate and lower thresholds (See 40 CFR § 372.28)

PBT Thresholds

- 100 lbs./yr (manufactured, processed, or otherwise used)**
 - Aldrin
 - Lead*
 - Lead Compds.
 - Methoxychlor
 - Pendimethalin
 - Polycyclic Aromatic Compds.
 - Tetrabromobisphenol A
 - Trifluralin
- 10 lbs./yr (manufactured, processed, or otherwise used)**
 - Chlordane
 - Heptachlor
 - Mercury
 - Toxaphene
 - Isodrin
 - PCBs
 - Benzo(g,h,i)perylene
 - Hexachlorobenzene
 - Mercury compounds
 - Octachlorostyrene
 - Pentachlorobenzene
- 0.1 g/yr (manufactured, processed, or otherwise used)**
 - Dioxin and dioxin-like compounds

* Excluding lead in stainless steel, brass, or bronze alloys

2/17/2012

24

TRI

Section 313 Chemicals and Chemical Categories

- Current list contains over 600 individual chemicals and chemical categories (See Table II of the EPA's TRI Reporting Forms and Instructions document (RFI)). There are 4 parts to the chemical list:
 - Individual chemicals alphabetically by name
 - Individual chemicals by CAS #
 - Chemicals with qualifiers
 - Chemical categories
- The list can change – check every year. Changes listed in the front of the RFI, on the TRI website, and in *TRI-MEweb*.

2/17/2012

25

TRI

Chemical List Changes for RY2011

- A rule was published in 2010 adding 16 new chemicals to the TRI chemical list.

Individual chemicals:	CAS #
1-Amino-2,4-dibromoanthraquinone	81-49-2
2,2-bis(Bromomethyl)-1,3-propanediol	3296-90-0
Furan	110-00-9
Glycidol	556-52-5
Isoprene	78-79-5
Methyleugenol	93-15-2
o-Nitroanisole	91-23-6
Nitromethane	75-52-5
Phenolphthalein	77-09-8
Tetrafluoroethylene	116-14-3
Tetranitromethane	509-14-8
Vinyl Fluoride	75-02-5
Chemicals Added to the Polycyclic Aromatic Compounds (PACs) Category:	
1,6-Dinitropyrene	42397-64-8
1,8-Dinitropyrene	42397-65-9
6-Nitrochrysene	7496-02-8
4-Nitropyrene	57835-92-4

- Reporting for these chemicals is required beginning Reporting Year 2011 (reports due July 1, 2012) if all other TRI threshold criteria are met.

2/17/2012

26

TRI

Section 313 Chemicals With Qualifiers

- Qualifiers - Listed chemicals with parenthetic qualifiers subject to TRI reporting only if manufactured, processed, or otherwise used in specified form (40 CFR § 372.25(g)). Below are some examples (see Table II of EPA's *TRI Reporting Forms and Instructions* document):

Chemical	CAS #	Qualifier
Aluminum	7429-90-5	Fume or dust
Aluminum Oxide	1344-28-1	Fibrous forms
Asbestos	1332-21-4	Friable forms
Isopropyl alcohol	67-63-0	Only manufacturers using strong acid process
Phosphorus (not phosphate)	7723-14-0	Yellow or white
Saccharin	81-07-2	Manufacture only
Hydrochloric acid	7647-01-0	Acid aerosols
Sulfuric acid	7664-93-9	Acid aerosols
Vanadium	7440-62-2	Except when contained in alloy

2/17/2012

27

TRI

TRI Chemical Categories

- Metal compound chemical categories

- Antimony Compounds
- Arsenic Compounds
- Barium Compounds *
- Beryllium Compounds
- Cadmium Compounds
- Chromium Compounds **
- Cobalt Compounds
- Copper Compounds ***
- Lead Compounds
- Manganese Compounds
- Mercury Compounds
- Nickel Compounds
- Selenium Compounds
- Silver Compounds
- Thallium Compounds
- Vanadium Compounds
- Zinc Compounds

For all categories: Includes any unique chemical substance that contains the element or compound as part of that chemical's infrastructure

* Does not include Barium Sulfate CAS 7727-43-7

** Except chromite ore and unreacted ore component of processing residue (see RFI for further information)

*** Does not include copper Phthalocyanine compounds that are substituted with only hydrogen, and/or chlorine and/or bromine

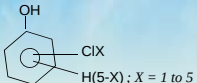
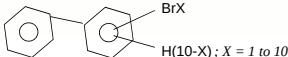
2/17/2012

Note: Elemental metals and metal compounds are separately listed chemicals under Section 313.

28

TRI

EPCRA TRI Chemical Categories (examples)

Chlorophenols	
Cyanide Compounds	XCN where X=H or any other group where a formal dissociation may occur. For example, KCN or Ca(CN) ₂
Diisocyanates	20 individual compounds cited in Category
Dioxin and Dioxin-Like Compounds:	17 individual compounds cited in Category
Ethylenebisdithiocarbamic acid, salts and esters (EBDCs)	Includes a substance that may contain EBDC or EBDC salt or ester as part of its infrastructure
Certain Glycol Ethers	Complex definition
Nicotine and salts	Includes a substance that may contain it or salt as part of its infrastructure
Nitrate compounds	Water dissociable, reportable only when in aqueous solution
Polybrominated Biphenyls (PBBs)	

2/17/2012

29

TRI

Manufacturing Activities

- Manufacturing (EPCRA § 313(b)(1)(C)(i) and 40 CFR § 372.3) - generating a Section 313 chemical

- Intentionally producing chemicals for:**
 - Sale
 - Distribution
 - On-site use or processing (e.g., intermediates)
- Coincidentally producing chemicals as impurities* or by-products**:**
 - At any point at the facility, including waste treatment (#152 of 1998 Q&A) and fuel combustion (#252 and #254 of 1998 Q&A)
- Importing**
 - "Cause" to be imported

*Impurity=TRI chemical that still remains with the final facility product as it is distributed into commerce (#151 and #319 of 1998 Q&A)

**By-product=TRI chemical that is separated out from the process mixture before it becomes the final product

2/17/2012

30

TRI

Processing Activities

- Processing (EPCRA § 313(b)(1)(C)(ii) and 40 CFR § 372.3) - preparation of a Section 313 chemical, after its manufacture, for distribution in commerce:
 - Use as a reactant to manufacture another substance or product
 - Add as a formulation component
 - Incorporate as an article component
 - Repackage for distribution
 - Quantities sent off-site for recycling
 - Incidentally include as an impurity



2/17/2012

31

TRI

Repackaging as a Processing Activity

- Repackaging a Section 313 chemical for distribution in commerce is considered processing

- Repackaging includes:**
 - From container to tanker truck and vice versa
 - Between similar size containers
 - Via pipeline to/from a tank
- Repackaging does not include:**
 - Sampling without repackaging
 - Re-labeling



- Repackaging without distribution into commerce is not processing
- Transfer to a storage tank for mere storage is not processing

2/17/2012

32

TRI

Otherwise Use Activities

- Otherwise Use (40 CFR § 372.3) - includes most activities that are NOT manufacturing or processing.

Examples

- Chemical processing aid (e.g., solvents)
- Manufacturing aid (e.g., lubricants, refrigerants)
- Ancillary activities (e.g., chemicals used to remediate wastes)
 - Fabrication and/or use of tools in your process
 - Installation of piping and process-related equipment, e.g., constructing storage tanks



2/17/2012

33

TRI

Otherwise Use Activities (continued)

Managing wastes received from off-site also counts as "Otherwise Use"

- Disposal, treatment for destruction on-site, or stabilization that does not result in further distribution in commerce are considered otherwise use if:**
 - Section 313 chemical was received from off-site for the purposes of further waste management, or
 - Section 313 chemical was manufactured as a result of waste management activities on materials received from off-site for the purpose of further waste management.
- Waste management activities, including on-site recycling, combustion for energy recovery, treatment for destruction, waste stabilization and release/disposal, on Section 313 chemicals in wastes generated on-site are not threshold activities.**

2/17/2012

34

TRI

Calculating Activity Thresholds

- The threshold quantity is the total amount manufactured, processed, or otherwise used, NOT the amount released.
- Calculate the total amount of Section 313 chemical used for a specific threshold activity
- For threshold determinations, Section 313 chemicals recycled from spent or contaminated materials or Section 313 chemicals directly reused:
 - Count original amount used only once
 - If the materials remain in use from previous years, count only the quantity added during current reporting year
- Calculations for reporting waste management may be different from threshold quantities.

2/17/2012

35

TRI

Threshold Determination for Compound Categories

- Count together all compounds that fall within a category for each activity, even if different compounds within a category are used in separate operations
- Consider the entire weight of the compounds in the category when determining thresholds
- Note: calculations for release and other waste management estimates of metal compounds based on the parent metal weight only; and for nitrate compounds are based on weight of nitrate ion only

2/17/2012

36

TRI

Activities That Are Not TRI Threshold Activities

- Activities that, alone, do NOT constitute a threshold activity
 - Storage
 - Remediation of on-site contamination (assuming no listed chemicals are manufactured during remediation)
 - Re-labeling without repackaging
 - Direct reuse onsite
 - On-site recycling (not including wastes received from off-site)
 - Transfers sent off-site for further waste management (not including recycling)

Note: While these activities are not included in the threshold determination, releases and wastes from these activities are not exempt from reporting if threshold is exceeded through other activities (unless specifically eligible for one of the reporting exemptions).

Quiz #2 Question 1

- A plant uses benzene as a raw material to manufacture liquid industrial adhesive for sale. The plant adds 27,000 lbs. of benzene to its liquid adhesive-making operation during the reporting year, but 3,000 lbs. are volatilized during the operation. How much of the benzene should be applied toward the processing activity threshold? Select your choice.

- A. 27,000 lbs.
- B. 24,000 lbs.
- C. 3,000 lbs.

Quiz #2 Question 2

- If a facility processes 20,000 lbs. of 2-Butoxyethanol in one operation and 10,000 lbs. of 2-(2-Butoxyethoxy)ethanol in another operation during the reporting year, what should it apply towards its processing threshold for glycol ethers? Select your choice.

- A. 10,000 lbs.
- B. 20,000 lbs.
- C. 30,000 lbs.

Quiz #2 Question 3

- A facility processes 18,000 lbs. copper sulfate, 10,000 lbs. of cuprous oxide, and otherwise uses 12,000 lbs. of aqueous sulfuric acid solution. For which TRI chemicals or chemical categories would the facility need to submit a TRI form? Select your choice.

- A. copper compounds and sulfuric acid
- B. only copper compounds
- C. only sulfuric acid

TRI REPORTING REQUIREMENTS

Section III: Reporting Exemptions



TRI

TRI REPORTING REQUIREMENTS

Reporting Exemptions

- If an exemption applies, then the amount of Section 313 chemical subject to the exemption does NOT have to be included in:
 - Threshold determinations
 - Release reporting
- Recognize that exemptions only apply to certain limited circumstances



2/17/2012

TRI 42

TRI REPORTING REQUIREMENTS

Reporting Exemptions

- Types of exemptions (40 CFR § 372.38)
 - De minimis*
 - Article
 - Laboratory activities
 - NAICS code specific
 - Coal mining extraction activities
 - Metal mining overburden
 - "Otherwise use" exemptions
 - Motor vehicle maintenance
 - Routine janitorial or facility grounds maintenance
 - Structural components
 - Personal use
 - Intake water and air



2/17/2012

TRI 43

TRI REPORTING REQUIREMENTS

De Minimis Exemption

- The quantity of a non-PBT Section 313 chemical in a mixture or other trade name product is eligible for the *de minimis* exemption (40 CFR § 372.38(a)) if the chemical is:
 - An OSHA-defined carcinogen present at a concentration of less than 0.1% (See 29 CFR § 1910.1200(d)(4))

OR

- Any other non-PBT TRI chemical present at a concentration of less than 1%

- The TRI *de minimis* level appears next to each chemical on the chemical list in Table II of the *TRI Reporting Forms and Instructions* (1.0, 0.1 or * for PBT chemicals where *de minimis* is not allowed (See 40 CFR § 372.38(a)))

2/17/2012

TRI 44

De Minimis Exemption

HOW IT WORKS...

- *De minimis* exemption generally applies to non-PBT chemicals:
 - In mixtures or trade name products received from off-site, including imported
 - Coincidentally manufactured as impurities that remain in products distributed in commerce
- *De minimis* exemption does not apply to:
 - Manufactured chemicals (in most cases): this includes by-products produced from manufacturing, processing, otherwise use, or any waste management
 - Wastes received from off-site
 - PBT chemicals (except for supplier notification)

2/17/2012

45

TRI

PBT Chemicals and the *De Minimis* Exemption

- The *de minimis* exemption cannot be applied to PBT chemicals.
 - For supplier notification requirements, suppliers of mixtures containing PBT chemicals at *de minimis* concentrations do not need to supply notification
 - Even though it may not receive a supplier notification, a facility that receives a mixture and knows that PBT chemicals are present must consider the PBT chemical in threshold and release calculations
- No other EPCRA section 313 exemptions were modified by the PBT rule.



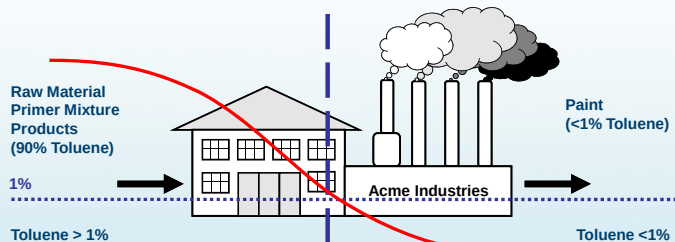
2/17/2012

46

TRI

De Minimis Exemption: How It Works... (cont.)

- Processing a non-PBT Section 313 chemical in a mixture to below the *de minimis* concentration does NOT exempt the chemical from threshold determinations and release calculations



- *De minimis* exemption does NOT apply
- Threshold determination required
- Release calculations required

- *De minimis* exemption does NOT apply
- Threshold determination required
- Release calculations still required

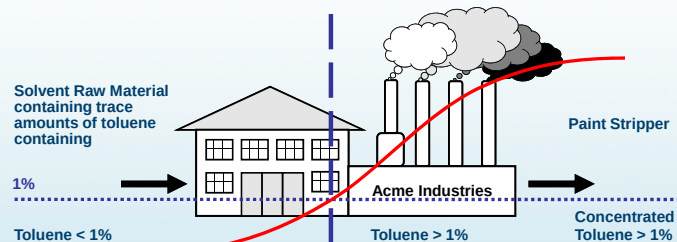
2/17/2012

47

TRI

De Minimis Exemption: How It Works... (cont.)

- Processing a non-PBT Section 313 chemical in a mixture to above the *de minimis* concentration triggers threshold determinations and, if thresholds are met, release calculation requirements



- *De minimis* exemption DOES apply
- Threshold determination not required
- Release calculations not required

- *De minimis* exemption does NOT apply
- Threshold determination required
- Release calculations still required

2/17/2012

48

TRI

Article Exemption Applicability

- To qualify for the article exemption, the article must meet 3 criteria (40 CFR § 372.3):

1. Is formed into a specific shape or design during manufacture; **and**
2. Has end-use functions dependent in whole or in part on its shape or design during end-use; **and**
3. Does **NOT** release a Section 313 chemical under normal processing or use conditions at a facility



2/17/2012

49

TRI

Article Exemption: How it Works

- Releases of a Section 313 chemical from an article may negate the exemption. To maintain the article status, total releases from all like items must be:
 - In a form having a specific shape or design; or
 - Recycled, directly reused; or
 - 0.5 pound or less released per year (may be rounded down to zero)
- If more than 0.5 pound per year of a Section 313 chemical is released from all like items in a form not having a specific shape or design and is not recycled or directly reused, none of the items meet the article exemption
- End use must be dependent upon the item's initial shape or design (For example, sheet metal must maintain its initial thickness, and wire and pipe must maintain their initial diameter.)
- See *TRI Reporting Forms and Instructions* for more on the article exemption

2/17/2012

50

TRI

Article Exemption: Examples

- Wire is cut to specified lengths. Wastes include off-spec cuts and dust.
 - Generation of off-spec cuts that are recognizable as articles will not, by themselves, negate the article status
 - Dust and off-spec cuts not recognizable as articles, with greater than 0.5 pound of ANY Section 313 chemical released annually, and not recycled or directly reused, negate the article status
- Fluorescent light bulbs are installed containing mercury. The used bulbs are crushed for recycling.
 - Crushing bulbs for disposal is not considered release during normal use; exemption is not negated

2/17/2012

51

TRI

Article Exemption

- Article Exemption is often inappropriately used!
 - In many instances when metals are machined, cut, or ground, in any manner, the article exemption may not be applicable.
- Generally, the articles exemption does not apply to the actual manufacturing of articles.



2/17/2012

52

TRI

Laboratory Activity Exemptions

HOW IT WORKS...

- Section 313 chemicals used in these laboratory activities under the direct supervision of a technically qualified individual ARE exempt from threshold and release (40 CFR § 372.38(d) and 1998 Q&A #311):
 - Sampling and analysis
 - Research and development
 - Quality assurance
 - Quality control
- Section 313 chemicals used in these laboratory activities are NOT exempt:
 - Specialty chemical production
 - Pilot-scale plant operations
 - Activities not conducted in lab
 - Support services
 - Photo processing
 - Equipment maintenance/cleaning

2/17/2012

53

TRI

Motor Vehicle Maintenance Exemption

- Section 313 chemicals used to maintain vehicles operated by the facility are eligible for the exemption from threshold determinations (40 CFR § 372.38(c)(4))
 - "Otherwise use" exemption
- Motor vehicles include cars, trucks, missiles, spacecraft, tanks, and forklifts
- Motor vehicle maintenance includes:
 - Body repairs
 - Parts washing
 - Fueling and adding other fluids (e.g., ethylene glycol)



Note: This exemption does NOT apply to "manufacture" of Section 313 chemicals from combustion of fuels.

2/17/2012

54

TRI

Routine Janitorial or Facility Grounds Maintenance Exemption

- Section 313 chemicals contained in products used for non-process related routine janitorial or facility grounds maintenance ARE eligible for exemption (40 CFR § 372.38(c)(2)):
 - Phenol in bathroom disinfectants
 - Pesticides or fertilizers used on lawns
 - "Otherwise use" exemption
- Section 313 chemicals used in the following activities are NOT exempt
 - Facility equipment maintenance
 - Cleaning or maintenance activities that are directly associated with or integral to the production process at the facility

Note: Chemicals otherwise used in janitorial or grounds maintenance activities may not be exempt if part of your facility's "process" is to provide these services (e.g., federal hospitals, prisons, parks). Also, chemicals manufactured during routine janitorial or facility ground maintenance are not exempt.

2/17/2012

55

TRI

Structural Component Exemption

- Section 313 chemicals used as structural components are eligible for exemption (See 40 CFR § 372.38(c)(1)) if they:
 - Are part of the facility structure; and
 - Are NOT process related.
- Non-process-related structural items eligible for the exemption:
 - Potable water pipes and other non-process-related pipes and structures
- Processed-related items/uses NOT eligible for the exemption:
 - Refractory brick, boiler tubes, process-related pipes, anodes used in electroplating, grinding wheels, & metal working tools
 - Structural components that are integral to a non-industrial facility's "process" (e.g., federal prisons, hospitals, parks)

2/17/2012

56

TRI

Other Section 313 "Otherwise Use" Exemptions

- Section 313 chemicals contained in non-process related items for employee personal use (40 CFR § 372.38(c)(3))

Non-federal Facilities:

- HCFC 22 in air conditioners used solely for employee comfort (exemption does NOT cover process cooling using chemical-based cooling systems)
- Chlorine used to treat on-site potable water
- Phenol used in a facility medical dispensary

Federal Facilities:

- Does not include TRI chemicals used for providing services to non-employees (e.g., patients in federal hospitals, prisoners, park visitors)

- Section 313 chemicals found in intake water and air

2/17/2012

57

TRI

Sector Specific Exemptions

- Coal mining extraction activities** are exempt from threshold determinations and release reporting (40 CFR § 372.38(g)) (applies to NAICS Codes 212111-212113):
 - Coal extraction: physical removal or exposure of ore, coal, minerals, waste rock, or overburden prior to beneficiation, and encompasses all extraction-related activities prior to beneficiation (40 CFR § 372.3)
- Chemicals in **metal mining** overburden that are processed or otherwise used are specifically exempt from TRI reporting (40 CFR § 372.38(h)) (applies to NAICS Codes 212221, 212222, 212231, 212234, 212299):
 - Overburden: unconsolidated material that overlies a deposit of useful materials or ores (40 CFR § 372.3)

2/17/2012

58

TRI

**Section IV:
Threshold Determination**

TRI

Chemical Information Management

- Consider all activities and sources
- Tracking chemicals entering facility
 - Purchasing/Inventory
 - Contractors
 - Capital purchases (e.g., chillers, process equipment)
 - Direct purchases (credit card or other emergency purchases)
 - Direct and indirect materials
 - Manufacturing byproducts/intermediates generated
- Need cooperation and support from all functional groups
- Be comprehensive!

2/17/2012

60

TRI

Threshold Determinations

- Identify Chemicals and Concentrations:
 - MSDS
 - Product or Specifications
 - Available Supplier/Vendor Product QAI/QC data
 - Industry Standards (API, ASTM, etc.)
 - Waste Profiles
 - Process Knowledge
 - Other References (AP-42, WebFIRE, Merck Index)
 - Supplier Notification
- Collect Data to Calculate Thresholds:
 - Inventory or Purchase Records
 - Throughput/Production Data
 - Integrated Supplier Records
 - EPCRA or Other Env. Reports
 - Air Permits / MACT or Similar Standards / Emission Inventories
 - Water Permits / DMR's / Discharge Reports
 - Annual/Biennial Waste Reports
 - User Records
 - Other Vendor Records (can call vendor)



2/17/2012

61

TRI

Determining Concentrations in Mixtures or Other Trade Name Products

- Determine whether thresholds were exceeded for listed chemicals in a mixture if you know (40 CFR § 372.30(b)(3)):
- **Exact concentration - use concentration provided:**
 - MSDS = 25% Use 25%
- **Upper bound - use upper limit**
 - MSDS < 25% Use 25%
- **Range - use the midpoint of the range**
 - MSDS: 30 – 50% Use 40%
- **Lower bound - subtract out other known constituents, create a range, and use the midpoint of range**
 - MSDS: >75% toxic chemical Use 87.5% (top of range = 100%)
 - MSDS: >75% toxic chemical Use 80% (range = 75% - 85%)
15% water

2/17/2012

62

TRI

TRI Chemicals Contained in Mixtures

- For the threshold quantity, only include the portion of the TRI chemical in the mixture, not the weight of the entire mixture.
- The *de minimis* exemption (40 CFR § 372.38(a)) applies to non-PBT chemicals contained in mixtures at less than 1.0% or 0.1% (for carcinogens).
 - The *de minimis* exemption is related to the concentration of the chemical in a mixture, NOT the quantity of the mixture used.
- A metal alloy can be thought of as solid solution. To determine threshold quantity, multiply the concentration of the TRI chemical in the alloy by the total weight of alloy processed or otherwise used.

2/17/2012

63

TRI

Determining Concentrations in Wastes

- If concentration is exact, upper bound, range, or lower bound, use the guidance for mixtures and other trade name products discussed earlier
- If concentration is below detection limit, use engineering judgment:
 - If the Section 313 chemical IS expected to be present, assume 1/2 of full detection limit
 - If the Section 313 chemical is NOT expected to be present, assume 0

2/17/2012

64

TRI

Supplier Notification

- Supplier notification - requires suppliers of mixtures or trade name products to covered facilities (See 40 CFR § 372.45(a)) to:
 - Identify Section 313 chemical(s) by name and CAS number
 - Identify Section 313 chemical(s) as being subject to Section 313 requirements
 - Provide concentration (or range) of Section 313 chemicals in mixtures and other trade name products (not wastes)
 - Provide notification at least annually in writing or attached to the MSDS
 - Update notification when changes occur
- The Regulatory Information section of the MSDS should identify any chemicals that are subject to TRI reporting

2/17/2012

65

TRI

Watch for Double Counting

- For threshold determinations, Section 313 chemicals recycled from spent or contaminated materials or Section 313 chemicals directly reused:
 - Count original amount used only once
 - Materials in use from previous years, count only the quantity added during current reporting year
- Section 313 chemicals stockpiled or in inventory but not manufactured, processed, or otherwise used during reporting year are NOT counted for threshold determinations

Chemicals sent off-site for recycling and returned to the facility are considered new materials and counted for threshold determinations

2/17/2012

66

TRI

Watch for Double Counting Within the Same Activity Threshold!

- Example: If a chemical is blended into a product mixture, and then this mixture is packaged for sale into 55 gallon drums, these are both processing activities, the chemical is "processed" twice. Only count this quantity once towards the processing threshold.
 - During Reporting Year, 20,000 lbs. of toluene were blended with other chemicals to create a paint product.
 - The paint product (containing the 20,000 lbs. of toluene) was then packaged into 55 gallons drums for sale.
 - The processing threshold quantity for this facility for Reporting Year = 20,000 lbs.

2/17/2012

67

TRI

Multi-Establishment Facility

- Reporting as multi-establishment facility (40 CFR § 372.30(c))
 - Apply threshold determinations on aggregate amount of chemicals used at facility
 - Able to file separate Form R reports for each part of the facility (e.g., establishment or grouping of establishments) and the Form Rs must be designated as "part of a facility" in Part I, Section 4.2
 - Report all non-exempt releases and other waste management activities of reportable Section 313 chemicals for all parts of a facility
 - Avoid double-counting at the facility of chemicals involved in intra-facility transfers

2/17/2012

68

TRI

Example: EPCRA Section 313 Non-PBT Chemical Reporting Threshold Worksheet

Facility Name: OMNI CHEMICAL Date Worksheet Prepared: _____
 Toxic Chemical or Chemical Category: Toluene Prepared By: J.S.P.
 Reporting Year: _____

Step 1. Identify amounts of the toxic chemical manufactured, processed, or otherwise used.

Mixture Name or Other Identifier	Information Source	Percent by Weight	Total Weight (in lbs)	Amount of the Listed Toxic Chemical by Activity (in lbs):		
				Manufactured	Processed	Otherwise Used
1. Sol's Degreaser	Purchasing	50	10,000			5,000
2. Bathroom Paint	Vendor	5	30,000			1,500
3. Parts Washer Fluid	Purchasing	40	10,000			4,000
4.						
5.						
6.						
7.						
Subtotal:				(A) _____ lbs.	(B) _____ lbs.	(C) 10,500 lbs.

Step 2. Identify exempt forms of the toxic chemical that have been included in Step 1.

Mixture Name as Listed Above	Applicable Exemption	Note Fraction or Percent Exempt (if Applicable)	Exempt Amount of the Toxic Chemical from Above (in lbs):		
			Manufactured	Processed	Otherwise Used
1. Bathroom Paint	Struct. Comp.	100			1,500
2.					
3.					
4.					
5.					
6.					
7.					
Subtotal:			(A) _____ lbs.	(B) _____ lbs.	(C) 1,500 lbs.

Step 3. Calculate the amount subject to threshold: (A - A₂) _____ lbs. (B - B₂) _____ lbs. (C - C₂) 9,000 lbs.

Compare to thresholds for section 313 reporting. 25,000 lbs. 25,000 lbs. 10,000 lbs.

If any threshold is met, reporting is required for all activities. Do not submit this worksheet with Form R. Retain for your records.

2/17/2012

69

TRI

Lessons Learned

Begin early

- Implement a program to gather "real-time" data on usage
- Searches for historical information can be difficult

Team approach

- Include all relevant personnel (e.g., engineering, purchasing, environmental, waste management, operations)

Recordkeeping & Documentation

- Keep good records and document all work

2/17/2012

70

TRI

Record Keeping and Documentation

Importance of good record keeping

- Detailed records improve reporting accuracy and data quality
- Reduces replication of effort from year to year
- Well-labeled calculations and engineering assumptions serve as standard operating procedures (SOPs) for future years
- Ensures consistency from year to year, especially if personnel responsible for reporting change



EPA Requirements

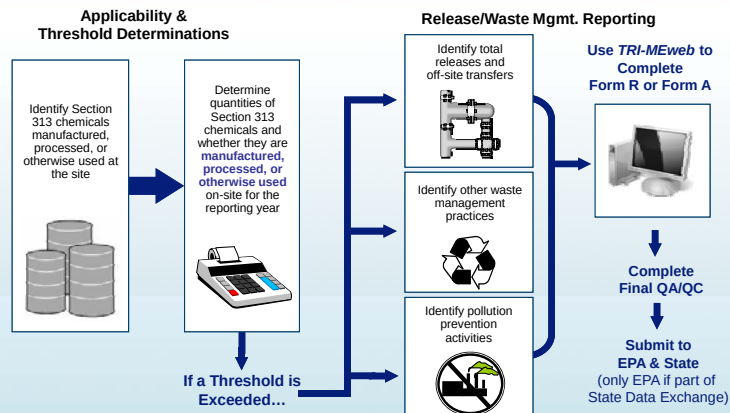
- Records used to complete Form R must be kept for three years from the time the report was submitted (40 CFR § 372.10)
- EPA may review records during a data quality audit

2/17/2012

71

TRI

TRI Process – 2 Part Process



2/17/2012

72

TRI



TRI REPORTING REQUIREMENTS

Overview of Form R

- Two principal types of information required
 - Facility-specific
 - Chemical-specific
- One form submitted to EPA and to the State/Tribe for each Section 313 chemical or chemical category exceeding applicable thresholds
- "Old Days" – Paper Form
- "Now" – Electronic Filing (*TRI-MEweb*)

2/17/2012

TRI REPORTING REQUIREMENTS

Form R Content

Part I	
Section 1:	Reporting Year
Section 2:	Trade Secret Information
Section 3:	Certification
Section 4:	Facility Identification
Section 5:	Parent Company Info
Part II	
Section 1:	Toxic Chemical ID
Section 2:	Mixture Component ID
Section 3:	Activities & Uses
Section 4:	Max Amt on site for CY
Section 5:	On-site Releases
Section 6:	Off-site Transfers
Section 7:	On-site Waste Treatment, Energy Recovery, Recycling Processes
Section 8:	Source Reduction and Recycling Activities

2/17/2012

TRI REPORTING REQUIREMENTS

Facility Identification

- Select a Facility (*TRI-MEweb*)
 - TRI-MEweb* preloads facility information
 - To view or make changes, select "Edit" after selecting facility
 - Select "entire facility" or "part of a facility"
- Facility Name and Address (Section 4.1)
 - Mailing address required if different from street address
 - TRI facility identification number (if a form was filed in a previous reporting year) or "New Facility" (if reporting for the first time)
 - Even if establishments in one facility are reporting separately, all should use the same TRI facility identification number
 - Federal facilities**
 - Enter name of Federal department or agency standard acronym followed by the site name
 - Standard facility names are available through the Facility Registry System (www.epa.gov/enviro/html/fri/ez.html)

2/17/2012

Facility Identification (continued)

- Select Facility Type (Sections 4.2)
 - Select **Federal facility** or "GOCO" or neither
- Enter Parent Company Name and Dun and Bradstreet Number (Section 5)
 - Parent company standardized names:**
 - TRI-MEweb is pre-loaded with standardized Parent Company names. (Can change pre-loaded Parent Company names, if necessary)
 - For new TRI reporters, the TRI-MEweb software has a list of standardized Parent Company names. If reporters cannot find correct name from the provided list, enter a new name.
 - Paper filers should refer to www.epa.gov/tri/report/index.htm for a list of parent company names.
 - Section 5.1: "NA" box has been replaced with "No U.S. Parent Company (for TRI Reporting purposes)."
 - To verify the accuracy of facility and parent company D & B number and name, go to: https://www.dnb.com/product/dlw/form_cc4.htm or call 1-888-814-1435.
 - Private-sector and GOCO facilities: enter complete name and Dun & Bradstreet number of parent company
 - Federal facilities: enter the complete name of department or agency for parent company (e.g., U.S. Department of Interior)
 - Check "NA" for Dun & Bradstreet number of parent company

2/17/2012

77

TRI

Facility Identification (continued)

- Facility Dun and Bradstreet Numbers (Section 4.6)
 - To verify the accuracy of facility and parent company D & B number and name, go to: https://www.dnb.com/product/dlw/form_cc4.htm or call 1-888-814-1435.
- Primary and Secondary NAICS codes (Section 4.5)
 - Enter primary 6-digit NAICS code
 - Enter other covered NAICS codes in decreasing order of significance
 - www.naics.com/search.htm

2/17/2012

78

TRI

Part II - Chemical-Specific information

- TRI-MEweb preloads previous year's chemicals
- To select new chemical (Part II Sections 1.1-1.3, 2.1)
 - Select CAS number or category code and name of chemical or chemical category - except on trade secret "sanitized" form; or
 - Enter generic name only if claiming chemical name as a trade secret (40 CFR 350); or
 - Report generic name provide by supplier, if supplier claims trade secret
- Contact information (Part I, Section 4.3 and 4.4)
 - List name, phone number, and email
 - Technical contact – should be able to explain data to EPA
 - Facilities are encouraged to provide an email address for the technical contact
 - Public contact – should be able to represent the facility's data to the public.



2/17/2012

79

TRI

Activities and Uses

- Specify use(s) of the Section 313 chemical (Section 3) (e.g., manufacture, process, or otherwise use)
 - Report only activities taking place at reporting facility
 - Check all applicable boxes

Manufacture		Process	Otherwise Use
☐ Produce	☐ For on-site use/processing	☐ As a reactant	☐ As a chemical processing aid
☐ Import	☐ For sale/distribution	☐ As a formulation component	☐ As a manufacturing aid
	☐ As a byproduct	☐ As an Article Component	☐ Ancillary or other use
	☐ As an impurity	☐ Repackaging	
		☐ As an Impurity	

2/17/2012

80

TRI

Tools and Data Sources for Release Calculations

- Previous year Form R reports and documentation (if available)
- Process flow diagrams
- Environmental monitoring data
- Permit applications
- EPCRA, CERCLA, RCRA, NPDES, CAA and other env. reports
- Waste management manifests, invoices, and waste profiles
- Engineering calculations and other notes
- EPA guidance (AP-42, WebFIRE, TANKS, WATER9)

2/17/2012

81

TRI

Estimating Quantities Released

- Consider all sources (routine and non-routine)
- Reasonable estimates are required by law
- Best approach by facility may need to be determined

Data and approach must be documented, and should be consistent!

2/17/2012

82

TRI

Data Precision

- Values for non-PBT Section 313 chemicals must be entered in whole numbers
 - EPA allows using **two significant figures** when reporting releases and other waste management estimates
 - The number of significant figures is typically the number of non-zero digits
 - If estimate is more precise, additional significant figures may be used based on precision of data used to calculate estimate
 - For estimates of non-PBT Section 313 chemicals under 1,000 pounds, a range code can be used:
 - A= 1-10 pounds; B = 11-499 pounds; C = 500-999 pounds

2/17/2012

83

TRI

Data Precision (continued)

- For PBT chemicals, report releases and other waste management quantities at a level of precision supported by the data and estimation techniques used
- For PBT chemicals, 0.1 pound (100 micrograms for dioxins) is the smallest amount required to be reported
 - Estimates < 0.05 pounds (< 50 micrograms for dioxins) can be rounded down to zero pounds
- TRI-MEweb will allow for decimal reporting for PBT chemicals (e.g., 9.3 pounds)

2/17/2012

84

TRI

"NA" vs. "0"

- All data elements in Sections 5 and 6 must be completed. If you determine that there was no release or transfer quantity:
 - Use "NA" (not applicable) when no possibility of the Section 313 chemical being released to or otherwise managed as waste in that media (e.g., facility has no on-site landfill)
- OR
- Use "0" when no release occurs or < 0.5 pound of a non-PBT Section 313 chemical from a waste stream is directed towards that medium
 - Example: Discharge to water is zero; however, release possible if control equipment fails
 - Must indicate a Basis of Estimate code (i.e., M1, M2, C, E1, E2, O) for all numerical estimates, including "0"

2/17/2012

85

TRI

Maximum On-Site Amount

- Select appropriate code indicating the maximum quantity on-site during the reporting year (Section 4).

Range Code	Weight Range (lbs)
1	0 - 99 lbs
2	100 - 999 lbs
3	1000 - 9999 lbs
4	10,000 - 99,999 lbs
5	100,000 - 999,999 lbs
6	1,000,000 - 9,999,999 lbs
7	10,000,000 - 49,999,999 lbs
8	50,000,000 - 99,999,999 lbs
9	100,000,000 - 499,999,999 lbs
10	500,000,000 - 999,999,999 lbs
11	greater than 1 billion lbs

- Use maximum total (non-exempt) amount present at one time during reporting year, even if the Section 313 chemical is present at more than one location at the facility
 - Based on amount in storage, process, and wastes
 - May not be the same as Tier II maximum amount on site
 - Tier II is usually by mixtures, Form R is chemical-specific
 - Tier II excludes hazardous wastes, Form R does not

2/17/2012

86

TRI

Quantity Entering Each Medium

- Report total releases of the Section 313 chemical to each environmental medium on-site - air, water, land (Section 5).
- Enter Total Release, report total quantity
 - Range codes can be used in Sections 5 and 6 for non-PBT Section 313 chemical quantities less than 1,000 pounds*
 - A = 1 - 10 pounds
 - B = 11 - 499 pounds
 - C = 500 - 999 pounds

* Note that similar quantities reported in Section 8 of Form R must be actual values and not ranges. The Section 8 Calculator in TRI-MEweb will assume the midpoint of any ranges reported in Sections 5 and 6 when calculating quantities for Section 8.

2/17/2012

87

TRI

Basis of Estimate Codes

- One of the following "Basis of Estimate" codes must be listed on the Form R for each release and waste management quantity reported:
 - Continuous monitoring (M1)
 - Periodic or random monitoring (M2)
 - Mass balance calculation (C)
 - Published emissions factors (E1)
 - Site-specific emissions factors (E2)
 - Engineering calculations (O)
 - Everything NOT M1, M2, C, E1 or E2 above, such as:
 - Best engineering judgment
 - Estimated removal efficiencies
 - Non-chemical-specific and non-published emission factors
 - Use the code on the Form R for the method used to estimate the largest portion of the release

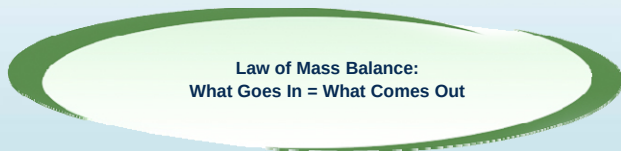
2/17/2012

88

TRI

Fugitive or Non-Point Air Emissions

- Enter total fugitive releases of the Section 313 chemical, including leaks, evaporative losses, building ventilation, or other non-point air emissions (Section 5.1)
- Example Using a Mass Balance Basis of Estimate (C):
 - 5,000 lbs of a volatile solvent are added during the year as part of the manufacture of a liquid adhesive. 4,950 lbs of the solvent are contained in the final liquid adhesive product.
 - Input (5,000 lbs) = Output (4,950 lbs) + Air Loss (50 lbs)
 - Fugitive air emissions from this process = 50 lbs



2/17/2012

89

Estimating Releases When No Data Available (Fugitive)

- Example: Metal dust observed on floor near or within metalworking operation - indicates fugitive air emission occurring and possible transfer off-site; no additional data are available:
 - Work with operations personnel familiar with the operation
 - Use best engineering judgment to estimate quantity released - document the basis of the judgment



2/17/2012

90

Stack or Point-Source Air Emissions

- Enter total releases to air from point sources, including stacks, vents, pipes, ducts, storage tanks, or other confined air streams (Section 5.2)
- Data sources/tools
 - Air permit applications
 - CAA Title V air inventories
 - Process and production data
 - Published emission factors
 - Facility-specific monitoring data and emissions factors
- Example using an Emission Factor basis of estimate (E1):
 - 500,000 tons of coal are combusted in a fluidized bed combustor
 - EPA emission factor: 0.11 lb mercury emitted / 1,000,000 lb coal combusted
 - 500,000 tons x 2,000 pounds / ton x (0.11 lb mercury / 1,000,000 lb coal) = 110 lbs. mercury
 - 110 pounds of mercury are released through the stack
 - Note: A portion of mercury may be present in resulting ash and would need to be reported as such

2/17/2012

91

On-Site Wastewater Discharges

- Releases to streams or water bodies (Section 5.3)
 - Enter the stream or water body to which your facility directly discharges the chemical
 - Check "NA" Box if the facility does not discharge to receiving streams or water bodies.
 - Enter the total amount of releases to each receiving stream or water body, including amounts from stormwater runoff, if available
 - Indicate the percentage of the total quantity (by weight) contributed by stormwater

Stream or Water Body Name	Quantity lbs	Range Code	Basis of Estimate Code	% from Stormwater	
Swift Creek	54		M2 - Monitoring, Periodic/Random	100%	Edit Delete

2/17/2012

92

Calculating Wastewater Discharges

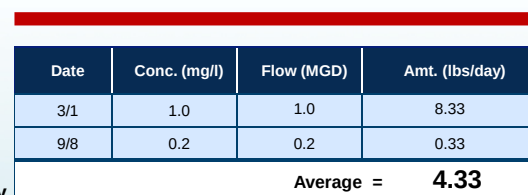
- Release to stream or water body (Section 5.3) and Discharges to POTW (Section 6.1) are not the same
 - Direct AND Indirect Discharges**
 - Don't forget storm water!
 - If no monitoring data exists, estimate based on process knowledge and/or mass balance calculation
- Data Sources
 - DMRs (or related wastewater monitoring reports)
 - Other monitoring data such as permit applications

2/17/2012

93

Calculating Wastewater Discharges

- Calculate the yearly pounds of methanol discharged using the following data concerning wastewater discharges of methanol:



Date	Conc. (mg/l)	Flow (MGD)	Amt. (lbs/day)
3/1	1.0	1.0	8.33
9/8	0.2	0.2	0.33
Average =			4.33
0.6 mg/l x 0.6 MGD x 8.33 =			3.00

Correct way

Incorrect way

MGD = million gallons per day

1 mg/l = 8.33 lbs/million gal

- Basis of Estimate Code: M2

2/17/2012

94

On-Site Injection Wells

- Underground injection to Class I wells (Section 5.4.1)
 - Enter total amount of Section 313 chemical injected into Class I wells at facility and basis of estimate code
- Underground injection to Class II - V wells (Section 5.4.2)
 - Enter total amount of Section 313 chemical injected into Class II - V wells at facility and basis of estimate code

Total Quantity: lbs

- or -

Range Code:

Basis of Estimate:

Note: Basis of estimate code must be entered.

2/17/2012

95

Disposal to Land On-Site

- Enter quantity of toxic chemical entering each on-site land disposal option (Section 5.5)
 - On-site landfills: RCRA Subtitle C (Section 5.5.1A)
 - On-site landfills: other (Section 5.5.1B)
 - On-site land treatment and application farming (Section 5.5.2)
 - On-site surface impoundments: RCRA Subtitle C (Section 5.5.3A)
 - On-site surface impoundments: Other (Section 5.5.3B)
 - Other disposal (includes spills or leaks to land)
- Quantities released to air or water during the reporting year of the initial release to land (e.g., volatilization from surface impoundments) are not included here

2/17/2012

96

On-Site Waste Management

- Examples of on-site waste management
 - Air pollution control devices
 - Wastewater treatment processes
 - Energy recovery devices
 - Recycling devices



2/17/2012

97

TRI

Waste Treatment Methods and Efficiency

- Report each waste treatment method that the Section 313 chemical undergoes (Section 7A)
 - Include even if method has no effect on the chemical
 - Focuses on the entire waste stream and the waste treatment efficiency applies to the Section 313 chemical within the waste stream

Waste Treatment Profile Name	a. General Waste Stream Code	b. Waste Treatment Method(s) Sequence	c. Waste Treatment Efficiency
Chemical oxidation	L - Liquid waste streams (non-aque)	H075	Select a Range Select a Range E1 - Greater than 99.9999% E2 - Greater than 99.99%, but less than or equal to 99.9999% E3 - Greater than 99%, but less than or equal to 99.99% E4 - Greater than 95%, but less than or equal to 99% E5 - Greater than 50%, but less than or equal to 95% E6 - Equal to or greater than 0%, but less than or equal to 50%

Select from the list and click **Add Selected**

- Enter quantity treated on-site (Section 8.6 current year)

2/17/2012

98

TRI

Energy Recovery Methods and Quantity

- Enter on-site energy recovery quantity and methods for Section 313 chemical
 - Section 313 chemical must be combustible and have a significant heating value (5,000 BTU/lb.)
 - Combustion unit is integrated into an energy recovery system (e.g., industrial furnace, industrial kiln, or boiler)
- Enter codes in descending order by quantities combusted

Quantity Used for Energy Recovery Onsite: Current Year (lbs)

Energy Recovery Methods:
(Select the order of energy recovery methods used)

First Method	Second Method	Third Method
Not Selected	Not Selected	Not Selected

2/17/2012

99

TRI

Recycling Methods and Quantity

- Enter quantity and methods used for on-site recycling of the Section 313 chemical (Sections 7C and 8.4 current year)
 - Codes for recycling methods used are found in EPA's TRI Reporting Forms and Instructions document
 - Do not include energy recovery processes
- Enter codes in descending order by quantities recycled

Quantity Recycled Onsite: Current Year (lbs)

Recycling Methods:
(Select the order of recycling methods used)

First Method	Second Method
Not Selected	Not Selected

2/17/2012

100

TRI

Off-Site Transfers

- Includes both off-site location information and quantities of Section 313 chemicals transferred to off-site locations
- Report quantities of chemical sent off-site to each POTW or other location for recycling, energy recovery, waste treatment, or disposal
- Report only total quantity of chemical transferred off-site, not the quantity of entire waste stream mixture
- In Sections 6.1 and 6.2, Total Transfers, report total quantity
 - Range codes can be used in Sections 5 and 6 for non-PBT Section 313 chemical quantities less than 1,000 pounds*
 - A = 1 - 10 pounds
 - B = 11 - 499 pounds
 - C = 500 - 999 pounds

* Note that similar quantities reported in Section 8 of Form R must be actual values and not ranges. The Section 8 Calculator in TRI-MEweb will assume the midpoint of any ranges reported in Sections 5 and 6 when calculating quantities for Section 8.

2/17/2012

101



Transfers to POTWs

- Discharges to publicly owned treatment works
 - Enter total quantity of the Section 313 chemical transferred to all POTWs and basis of estimate
 - Select POTW name and location for each POTW
 - May be able to find official name of POTW:
 - Using TRI-MEweb search tool
 - Enforcement & Compliance History Online (ECHO): www.epa-echo.gov/echo/ OR
 - Facility Registry System: www.epa.gov/enviro/html/fri/ez.html
- Example using an Engineering Calculations basis of estimate (O):
 - A wet grinding process generates wastewater with 300 lbs of lead (contained in particulates) during the year. This wastewater undergoes on-site filtration prior to being sent to the POTW. Manuals from the filter equipment vendor indicate a 95% removal efficiency for particulates of this size.
 - $300 \times 0.95 = 285$ lbs removed from the wastewater
 - $300 - 285 = 15$ pounds remaining in the wastewater after filtration
 - 15 pounds of lead are transferred off-site to the POTW

2/17/2012

102



Other Off-site Transfers

- Enter transfers to other off-site locations (Section 6.2)
 - Include name, address, and EPA identification (RCRA ID) number of the receiving facility
 - Enter quantity, basis of estimate, and M code for each different waste management activity (waste treatment, disposal, recycling, and energy recovery)
 - Check "NA" box to indicate no transfers to off-site locations
- Data/tools
 - Waste manifests and vendor receipts
 - RCRA reports
 - Waste characterization - analyses, profiles

2/17/2012

103



Off-Site Waste Transfers

- Approach: ID potential sources → ID data/tools → estimate
- Potential off-site waste transfers of reportable chemicals
 - Hazardous waste
 - Non-hazardous waste (e.g., waste oil and coolant)
 - Trash
 - Scrap metal (reuse versus recycle)
 - Container residue: RCRA empty is NOT EPCRA empty
 - BE COMPREHENSIVE!
- Also need to be sure to identify ALL possible sources of waste composition data
- Identify final disposition of each Section 313 chemical:
 - Disposal, waste treatment, energy recovery, recycling

2/17/2012

104



Release and Waste Management Estimates

- Helpful hints for accurate release estimates
 - Always use your best available information
 - Estimate the quantity of Section 313 chemical, not the entire waste stream
 - Differentiate fugitive from stack air emissions
 - Zero air emissions for volatile organic compounds (VOCs) are unlikely
 - Watch out for releases of Section 313 chemicals with qualifiers
 - Check your math and document your work!
- Result of release estimation errors
 - Incorrect release estimates and inconsistencies could carry over from year to year

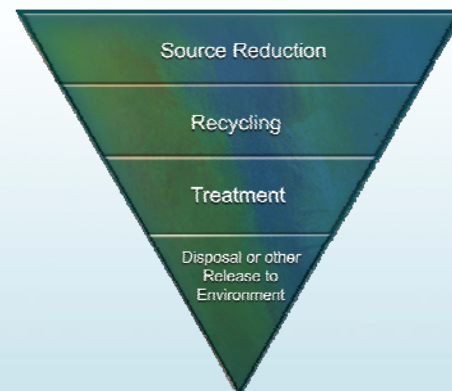
2/17/2012

105

TRI

Pollution Prevention Hierarchy

- Section 8 of Form R



2/17/2012

106

TRI

Source Reduction and Recycling (Section 8)

- The sum of sections 8.1 through 8.7 represents the total quantity of waste generated through regular production activities at your facility for the reporting year.

Waste Management Description	Prior Year (RY2009)	Current Year (RY2010)	Following Year (RY2011)	Second Following Year (RY2012)
8.1a) Total on-site disposal...	0	0	0	0
8.1b) Total other on-site disposal...	290	410	400	407
8.1c) Total off-site disposal...	0	0	0	0
8.1d) Total other off-site disposal...	1050	1145	1100	1068
8.2) Quantity used for energy recovery onsite	0	0	0	0
8.3) Quantity used for energy recovery offsite	0	NA	0	0
8.4) Quantity recycled onsite	0	0	0	0
8.5) Quantity recycled offsite	0	NA	0	0
8.6) Quantity treated onsite	5000	5150	5100	4970
8.7) Quantity treated offsite	0	0	0	0

- TRI-MEweb includes a Section 8 Calculator feature that helps calculate Section 8 estimates from estimates reported in previous portions of on-line application. A validation feature ensures consistency between Sections 5 and 6 and Section 8.

2/17/2012

107

TRI

Section 8: Relationship to Sections 5 and 6

Part II. Sections 8.1 - 8.7

8.1a	Total on-site disposal to Class I UIC wells, RCRA & other landfills 5.4.1 + 5.5.1A + 5.5.1B – 8.8 (on-site release or disposal due to catastrophic event)
8.1b	Total other on-site disposal or other releases 5.1, 5.2, 5.3.1, 5.3.2, 5.3.3, 5.4.2, 5.5.2, 5.5.3A, 5.5.3B, 5.5.4 – 8.8 (on-site release or disposal due to catastrophic event)
8.1c	Total off-site disposal to Class I UIC wells, RCRA & other landfills Section 6.2, M64, M65, and M81 – 8.8 (off-site disposal due to catastrophic event)
8.1d	Total other off-site disposal or other releases 6.1 (for metals and metal category compounds only) + 6.2 (quantities associated with M codes M10, M41, M62, M66, M67, M73, M79, M82, M90, M94, M99) – 8.8 (off-site disposal due to catastrophic event)
8.3	Off-site energy recovery 6.2, M56 and M92 – 8.8 (off-site energy recovery due to catastrophic events)
8.5	Off-site recycling 6.2, M20, M24, M26, M28, and M93 – 8.8 (off-site recycling due to catastrophic events)
8.7	Off-site treatment 6.1 (excluding metals and metal category compounds), 6.2 (quantities associated with M codes M50, M54, M61, M69, M95) – 8.8 (off-site treatment due to catastrophic event)

Note: Quantity reported in 6.1 is distributed among 8.1c, 8.1d and 8.7 based on final disposition. Metals and metal category compounds should not be reported in 8.7.

2/17/2012

108

TRI

Section 8: Relationship to Section 7

Part II. Sections 8.1 - 8.7

8.2	On-Site Energy Recovery - Determine quantity for activities described in 7B - Report quantity actually combusted in energy recovery unit (i.e., consider efficiency)
8.4	On-Site Recycling - Determine quantity for activities described in 7C - Report quantity actually recycled (i.e., consider efficiency)
8.6	On-Site Treatment - Determine quantity of the chemical for activities on wastestream describes in 7A - Report quantity actually destroyed (i.e., consider efficiency) - Metals and metal category compounds cannot be reported here

2/17/2012

109

TRI

Remedial, Catastrophic, or One-Time Amounts

- Enter the quantity of Section 313 chemical released into the environment or transferred off-site (Section 8.8) as a result of:
 - Remediation
 - Catastrophic events (e.g., earthquake, hurricane, fire, floods)
 - One-time events not associated with production processes (e.g., pipe rupture due to unexpected weather)
- Does not include Section 313 chemicals treated, recovered for energy, or recycled ON-SITE
- Quantities in Sections 8.1 through 8.7 should not include amounts reported in Section 8.8



2/17/2012

110

TRI

Production Ratio or Activity Index

- Production ratio or activity index (Section 8.9)
 - A ratio of production or activity involving the Section 313 chemical in the reporting year to production or activity in the previous year
 - Allows quantities of the Section 313 chemical reported in Sections 8.1 through 8.7 in the current year to be compared to quantities reported in the prior year
- Example (Production Ratio):
Oven manufacturing

$$\frac{40,000 \text{ ovens assembled (Current RY)}}{35,000 \text{ ovens assembled (Prior RY)}} = 1.14$$
- Example (Activity Index):
Tank washouts

$$\frac{50 \text{ Washouts (Current RY)}}{60 \text{ Washouts (Prior RY)}} = 0.83$$

2/17/2012

111

TRI

Source Reduction Activities

- Practices used with respect to the chemical, and the methods used to identify those activities (Section 8.10)
 - Includes those source reduction activities implemented for the first time during the reporting year
 - Include activities that reduce or eliminate quantities reported in Sections 8.1 through 8.7
 - Possible Source Reduction Activities
 - Standard operating procedures
 - Process changes or equipment changes (e.g., replacements, adjustments)
 - Raw material changes
 - Work orders for process changes
 - Product redesign specifications
 - Audit reports and follow-up actions
 - Waste minimization section of the RCRA hazardous waste report
 - State/corporate pollution prevention reports

2/17/2012

112

TRI

Optional Source Reduction Information

- Optional Additional Source Reduction, Recycling, and Pollution Control Information (Section 8.11)
 - Facility should indicate whether additional optional information on source reduction, recycling, or pollution control activities is included with the report
 - A one-page summary is encouraged
 - Facility can provide information on previous years' activities
- New Section Added: Miscellaneous and Optional Information (Section 9.1)
 - Facility can provide any useful additional information related to any portion of the Form R submission in this new data field



2/17/2012

113

TRI



Section VI: Alternate Threshold Rule

TRI

Form A Eligibility

- If alternate threshold criteria met:
 - Have the option to file a Form A in lieu of a Form R
 - No detailed release, other waste management, or source reduction reporting
 - Maintain records and calculations used to determine Form A eligibility
- Facilities can submit a combination of Forms R and Forms A. Some chemicals may meet Form A criteria, others may not.
- If a facility submits a Form A and does not meet the qualifying criteria, it may result in an enforcement action.

2/17/2012

115

TRI

Criteria for Submitting Form A

- Must NOT be a PBT chemical
- Do not exceed 1,000,000 pounds of the toxic chemical manufactured, processed, or otherwise used.
- Do not exceed 500 pounds for the total annual waste management (i.e., releases including disposal, recycling, energy recovery, and treatment) of the Section 313 chemical.
 - Equivalent to the sum of the quantities calculated for Sections 8.1 – 8.7 of the Form R

2/17/2012

116

TRI

Quiz #3 Question 1

1. A facility manufactures 100,000 lbs. of a non-PBT Section 313 chemical. They sell 99,950 lbs. as a product. They emit 25 lbs. to the air out of a stack, and send 25 lbs. off-site for treatment.

Do they meet the criteria for submitting a Form A?

Select Yes or No.

YES

NO

117

TRI

Quiz #3 Question 2

2. A facility uses 50,000 lbs. of nitric acid as a cleaner. The entire amount is neutralized in their on-site wastewater treatment operation and there are no air or water releases.

Do they meet the criteria for submitting a Form A?

Select Yes or No.

YES

NO

118

TRI

Benefits of TRI-MEweb and Submitting Via CDX

- TRI forms can be filled from any computer that has an Internet connection
- It saves time and money
- Using TRI-MEweb assists users in finding reporting errors
- TRI-MEweb helps users address new reporting requirements for chemicals that have been added to TRI list
- EPA provides instant email confirmation of transmitted and certified submission
- Electronic Signature allows for quick, paperless submissions

2/17/2012

119

TRI

Benefits of TRI-MEweb and Submitting Via CDX (cont.)

- CDX submissions are processed automatically, unlike paper submissions, which leads to faster Facility Data Profile (FDP) access
- Reduced data collection costs for EPA, States, and Regulated Community
- Facilities in participating States can submit TRI information to both EPA and their State simultaneously.
 - To view States that are on the exchange network, go to www.epa.gov/tri/stakeholders/state/state_exchange/
 - Facilities in other states can generate CD's or diskettes for their state reporting using TRI-MEweb.
 - TRI-MEweb also allows facilities to make revisions or withdrawals to current year forms and forms from the past five reporting years.

2/17/2012

120

TRI

For More Information and Assistance

- For more information on TRI requirements, see the second part of this training course on TRI Advanced Concepts.
- For TRI reporting guidance, information and tutorials on the *TRI-MEweb* reporting software, and the latest changes to the TRI Program please visit www.epa.gov/tri.
- Industry-specific and chemical-specific guidance can be found at: www.epa.gov/tri/guide_docs/index.htm

2/17/2012

121

TRI



End of Module

TRI

Quiz Answers

2/17/2012

123

TRI

Quiz #1 Question 1

1. Would the facility described below be covered by TRI and, therefore, need to consider its chemical use for possible reporting?
Select Yes or No.

A manufacturing facility, owned by ABC Corporation, with 100 full-time employees

YES

NO

Answer: Yes.

As a manufacturing facility, its primary NAICS code will be among those covered by EPCRA Section 313 (TRI). In addition, the facility employs more than 10 full-time employees. This facility would need to consider whether it has exceeded any activity thresholds for TRI chemicals or chemical categories, to determine if it needed to report.

2/17/2012

124

TRI

Quiz #1 Question 2

2. Would the facility described below be covered by TRI and, therefore, need to consider its chemical use for possible reporting?
Select Yes or No.

A maintenance and warehouse facility, owned by ABC Corporation, with 5 full-time employees, a few blocks away from the manufacturing facility described in Question 1

YES

NO

Answer: No.

The facility's maintenance and warehouse activities are represented by a primary NAICS code that will not be among those covered by EPCRA 313 (TRI). In addition, the facility has fewer than 10 full-time employees. This facility would not need to report.

2/17/2012

125

TRI

Quiz #1 Question 3

3. Would the facility described below be covered by TRI and, therefore, need to consider its chemical use for possible reporting?
Select Yes or No.

A maintenance and warehouse facility, owned by ABC Corporation, with 5 full-time employees, next door to the manufacturing facility described in Question 1

YES

NO

Answer: Yes.

The maintenance and warehouse activities are considered part of the manufacturing facility because they are on adjacent properties. Since the employee threshold is exceeded, this facility would need to consider any chemical use at the warehouse and maintenance establishment along with that of the manufacturing facility, to determine if the facility needed to report.

2/17/2012

126

TRI

Quiz #2 Question 1

1. A plant uses benzene as a raw material to manufacture liquid industrial adhesive for sale. The plant adds 27,000 lbs. of benzene to its liquid adhesive-making operation during the reporting year, but 3,000 lbs. are volatilized during the operation. How much of the benzene should be applied toward the processing activity threshold? Select your choice.

A. 27,000 lbs.

B. 24,000 lbs.

C. 3,000 lbs.

Answer: A is correct.

27,000 total lbs. of benzene is processed. Always apply the total amount that enters a process toward the activity threshold. The quantity of benzene processed exceeds the 25,000 lbs. processing threshold for non-PBT chemicals, therefore, the facility would need to complete a TRI form for benzene. The quantity released to the environment would be reported on the TRI Form R.

2/17/2012

127

TRI

Quiz #2 Question 2

2. If a facility processes 20,000 lbs. of 2-Butoxyethanol in one operation and 10,000 lbs. of 2-(2-Butoxyethoxy)ethanol in another operation during the reporting year, what should it apply towards its processing threshold for glycol ethers?
Select your choice.

A. 10,000 lbs.

B. 20,000 lbs.

C. 30,000 lbs.

Answer: C is correct.

2-Butoxyethanol and 2-(2-Butoxyethoxy)ethanol are both chemicals within the glycol ethers chemical category; therefore, the quantities of each chemical processed during the reporting year should be summed. The facility has exceeded the reporting threshold for processing (25,000 lbs.) and would need to report for the glycol ethers chemical category.

2/17/2012

128

TRI

Quiz #2 Question 3

3. A facility processes 18,000 lbs. copper sulfate, 10,000 lbs. of cuprous oxide, and otherwise uses 12,000 lbs. of aqueous sulfuric acid solution in a closed system. For which TRI chemicals or chemical categories would the facility need to submit a TRI form?

Select your choice.

- A. copper compounds and sulfuric acid
- B. only copper compounds
- C. only sulfuric acid

Answer: B is correct.

The facility has exceeded the 25,000 lbs. processing threshold for copper compounds (18,000 + 10,000 = 28,000) and would need to submit a TRI form for copper compounds. The qualifier for sulfuric acid (see Section 313 Chemicals) indicates that it is only reportable in an aerosol form. Because the facility only used the sulfuric acid in an aqueous form (and does not generate acid aerosols), it does not need to consider it towards the otherwise use threshold, and no report for sulfuric acid is required.

2/17/2012

129

TRI

Quiz #3 Question 1

1. A facility manufactures 100,000 lbs. of a non-PBT Section 313 chemical. They sell 99,950 lbs. as a product. They emit 25 lbs. to the air out of a stack, and send 25 lbs. off-site for treatment. Do they meet the criteria for submitting a Form A? Select Yes or No.

YES

NO

Answer: Yes.

The total amount of the chemical manufactured (100,000 lbs.) is below the 1,000,000 lbs. threshold for using Form A. The total annual reportable amount (50 lbs.) is below the 500 lbs. threshold.*

2/17/2012

130

TRI

Quiz #3 Question 2

2. A facility uses 50,000 lbs. of nitric acid as a cleaner. The entire amount is neutralized in their on-site wastewater treatment operation and there are no air or water releases. Do they meet the criteria for submitting a Form A?

Select Yes or No.

YES

NO

Answer: No.

The total amount of the chemical manufactured, processed, or otherwise used (50,000 lbs.) is below the 1,000,000 lbs. threshold for using Form A. However, the annual reportable amount (50,000 lbs.) is greater than the 500 lbs. threshold, because all 50,000 lbs. of nitric acid are treated onsite. The facility would file a Form R for nitrate compounds.*

2/17/2012

131

TRI