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TSCA Reform – Current Issues and Future Impacts

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TSCA Reform – Current Issues and Future Impacts

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Biography:

Ms. Knauf, CES, is an environmental scientist and the team leader for the greenhouse gas (GHG) and air permitting groups within Trihydro's Air and Process Services Business Unit. Ms. Knauf has over nine years of experience and is responsible for managing most of Trihydro's GHG and air permitting projects, including applicability determinations, data gap analyses, preparation of GHG monitoring plans, program audits, and compressor vent monitoring and optical gas imaging projects. Her project experience also includes providing technical and field support for other air compliance projects.

Toxic Substance Control Act – Best Practices and Future Reform Update

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Abstract

In July of 2012, refineries, along with other manufacturers, were required to submit chemical production information under the Toxic Substance Control Act's (TSCA) Chemical Data Reporting Rule (CDR). The CDR is the most comprehensive set of information on chemical substances and their proposed uses available to EPA and the public.

While supporting several facilities with the CDR, Trihydro Corporation (Trihydro) faced several challenges during the 2012 submission period related to regulatory changes from the previous submission year and general reporting complications. Resolving the issues led Trihydro to develop best practices and recommendations to reduce the CDR burden for future reports. Since the CDR required reporting is every four years, Trihydro also recommends several practices that facilities should be doing in the meantime. Many of Trihydro's recommendations are based on knowledge of the 2012 reporting period and the current regulation, TSCA reform is underway in Congress. While much of the reform is proposed, facilities should be aware of potential changes to the regulation.

Introduction

The Toxic Substance Control Act (TSCA) was promulgated in 1976 with the ambitious goal of reducing chemical exposure risk to human health and the environment without harming innovation, growth, and jobs. TSCA gave the Environmental Protection Agency (EPA) the authority to identify chemicals that should be subject to federal control based upon their potential to be dangerous and that these chemicals were not covered by existing regulations. Both naturally occurring and synthetic products may be subject to TSCA, with the exception of those chemicals that are regulated under existing federal laws pertaining to food, drugs, cosmetics, firearms, ammunition, pesticides, tobacco, or mixtures. As a result, the majority of refinery-related chemicals and products manufactured, imported/exported, processed, distributed, and/or disposed are covered by TSCA requirements.

The primary sections of TSCA that are of most interest to the refining industry include: Testing of Chemical Substances and Mixtures (Section 4); Manufacturing and Processing Notices (Section 5); Regulation of Hazardous Chemical Substances and Mixtures (Section 6); and Reporting and Recordkeeping (Section 8).

Specific to Section 8, the TSCA Chemical Data Reporting Rule (CDR; formally the Inventory Update Rule [IUR]) requires refineries to submit basic chemical production data approximately every four years. The most recent submission occurred in 2012 (for principal reporting year 2011) and, at a minimum, required refiners to report the specific chemical identity and related manufacturing information for chemicals that are manufactured in quantities greater than 25,000 pounds (lbs.).

The purpose of the CDR is to collect quality screening-level, exposure-related information on chemical substances and to make that information available for use by EPA and, to the extent possible, the public. The TSCA CDR is the most comprehensive set of information on chemical substances and their proposed uses available to EPA. In general, the information gathered in the TSCA CDR is used by EPA to assess potential exposure and risk from chemical substances domestically manufactured and imported.

Processing and use information from the CDR is used to screen, identify, and prioritize chemicals that could potentially have human health and environmental effects. The CDR also provides public access to an abundance of information on chemicals that are produced in large quantities in the United States. The amount of data in the CDR is intended to enhance EPA's ability to identify and address potentially harmful chemicals. (2013a))

The primary goal of this paper is to provide Refinery Environmental, Health, and Safety (EHS) personnel with the tools and understanding to prepare for the next reporting year (2016) and to prepare for future legislation aimed at modernizing TSCA.

This goal will be met by the following objectives:

- Objective 1: Changes and Challenges for the 2012 submissions.
- Objective 2: What can the 2012 data tell us?
- Objective 3: Preparing for 2015 Principal Reporting Year
- Objective 4: Overview on the Chemical Safety Improvement Act (CSIA)
- Objective 5: Best Practices for future reporting years

Changes and Challenges for the 2012 Submissions

During data collection and subsequent reporting of the 2012 TSCA reports, several key changes related to this reporting period were identified that caused challenges that were not originally anticipated. Additionally, this section will discuss some lessons learned and best practices that can be applied to future TSCA submissions.

Changes from previous reporting periods

On August 1, 2011, the EPA published the final rule which amended the TSCA regulation. Included in the amendments were changes to Section 8, which covers the CDR. The following were the major changes made to TSCA for the 2012 reporting period:

1. The name of the reporting changed from IUR to CDR
2. Reporting was required through EPA's Central Exchange (CDX) database (online only).

3. Reporting period was established from February 1 to June 30, 2012 and these dates will be used for future reports. However, in 2012, due to issues with the CDX reporting system, the reporting period was extended through August 13, 2012.

4. Reporting threshold remained at 25,000 lbs.; however, the processing and use information threshold was decreased to 100,000 lbs. (previously 300,000 lbs.) for the 2012 reporting period only. This upper processing and use threshold will not apply for the 2016 reporting period. As a result, full processing and use reporting information will be required for any chemical manufactured above 25,000 lbs.

5. The principal year for threshold determinations was 2011; however, production volumes from 2010 were also required. As a result, the reporting thresholds can be exceeded in any year between reporting periods.

6. NAICS codes were replaced with the Industrial Sector (IS) codes.

7. Reporting standard was updated to "known to or reasonably ascertainable" for all data instead of "readily obtainable." This standard covers all information in a person's possession or control, plus all information that a reasonable person similarly situated might be expected to possess, control, or know.

8. Water was updated to be fully exempt from reporting.

9. Reporting frequency changed from five to four year intervals. In addition, reporting of production volumes will be required for each year between principal reporting years starting in 2016. For example, the production volume for each year (2012 – 2015) will be required on the 2016 report. Additionally, the reporting threshold can also be triggered in any year between principle reporting years.

Other minor changes that should be also be noted include updates to several definitions, data reportable items (e.g., volume of substance used on-site, concentration ranges, industrial function categories), and confidential business information claims.

Challenges encountered

For any regulation that has changed or that has an infrequent reporting period, challenges can be expected. The TSCA reporting period proved to be no exception. However, by understanding the challenges encountered, environmental managers can better prepare and anticipate these and future challenges related to data collection, rule interpretation, and reporting. This section will present some of the challenges encountered while completing TSCA reporting for the 2012 reporting year.

- *Online submission software* - Since CDX and the online submittal process was fairly new, it was unfamiliar and difficult to navigate for many users. Hence, the reporting deadline was extended to help mitigate issues. Additionally, the CDX program that was used to upload CDR data was the Submissions for Chemical Safety and Pesticide Programs (CSPP), not the TSCA program. The TSCA program is a separate entity that is used for other purposes (e.g., sending TSCA pre-manufacturing notifications) and as a result, created mild confusion for individuals who were not familiar with the CDR requirements.

Regardless, the most challenging issue was the level of security added to the CSPP web software. Each facility was required to designate a Primary Authorized Official who, before data could be entered, had to either fill out an Electronic Signature Agreement (ESA). Many refineries who utilize TRI-MEweb for Toxic Release Inventory (TRI) reporting were accustomed to this process. However, if an ESA was not on file with CDX, providing one proved to be difficult because the online verification process was completed through third-party software that was not straightforward. Once the ESA was received, the Primary Authorized Official was required to add the facility for which reporting was required. After the facility was successfully added, the Primary Authorized Official was also required to start the online data upload by creating a password or passphrase that was shared with other individuals who would be preparing forms. Furthermore, before other preparers could begin the data uploading process, access to the forms had to be provided by the Primary Authorized Official. These added security steps was in addition to the regular CDX username and password required for all users.

Navigating the complexity of the CSPP system was a significant time burden, and since the Primary Authorized Official at a refinery is typically upper management, scheduling a time to setup the CDX CSPP system was difficult. Additionally, at times near the end of the reporting period, uploading the data into the system was impeded due to network capacity issues and slowdowns. This could be avoided by uploading data during hours when network traffic decreased (e.g., after 5PM). Nonetheless, once the passphrase was created, users were granted access, and the forms started, the software user-interface and data entry process was straightforward. .

- *New definitions and interpretations*

  The changes to several definitions in the CDR required reporters to re-visit previous historic interpretations. An example of different interpretation was related to the reporting of isolated intermediate streams. Gaseous streams at a refinery had been typically considered non-isolated intermediates if they were not stored. However, a question proposed to the TSCA hotline during the reporting period challenged previous interpretations.

  Q: Would the overhead stream from the FCC Gas Plant to the Gas Treatment Unit be considered a non-isolated intermediate? Could this be a case where it also depends on how the units are broken up at a refinery (such as I could see the Gas Treatment Unit in this example really just being an extension of the FCC Gas Plant)?

  A: "A non-isolated intermediate means any intermediate that is not intentionally removed from the equipment in which it is manufactured, including the reaction vessel in which it is manufactured, equipment which is ancillary to the reaction vessel, and any equipment through which the substance passes during a continuous flow process, but not including tanks or other vessels in which the substance is stored after its manufacture (40 CFR 704.3)."

  The gas stream is manufactured from the Debutanizer overheads in the FCC Gas Plant, but EPA would consider it to be intentionally removed from the process equipment in which it is manufactured when it is transferred to the Gas Treatment Unit, the operations of which have a different commercial purpose than manufacturing the gas stream. Hence, EPA would consider this an isolated intermediate and subject to reporting.

  The current interpretation from the TSCA Hotline is different than the historic interpretation. In the past, most refiners would have considered the gas stream as having met the definition of non-isolated intermediate as it was not intentionally removed from the process during a continuous flow to the

next stage of the process. EPA did not change the definition of the non-isolated intermediate. However, in EPA's response, EPA is referring to the gas stream as being an intermediate because it is produced by one process and is transferred to another process with a different commercial purpose.

The use of the phrase "commercial purpose" is directly related to changes between the 2006 definitions and the 2011 amendments. In the 2011 amendments, EPA modified the definition of "manufacture or import for a commercial purpose" in § 704.3 to be:

To manufacture, produce, or import with the purpose of obtaining an immediate or eventual commercial advantage, and includes, for example, the manufacture or import of any amount of a chemical substance or mixture: (1) For commercial distribution, including for test marketing, or (2) For use by the manufacturer, including use for product research and development, or as an intermediate.

Additionally, § 710.3 defines "intermediate" as:

Any chemical substance: (1) Which is intentionally removed from the equipment in which it is manufactured, and (2) Which either is consumed in whole or in part in chemical reaction(s) used for the intentional manufacture of other chemical substance(s) or mixture(s), or is intentionally present for the purpose of altering the rate of such chemical reaction(s)."

Historically, the definition of the term "manufacture" was to produce or import for a commercial purpose. Hence, the historic exclusion argument was that the stream was a non-isolated intermediate because the gas stream was not intentionally removed from the piping (it was used in continuous process) and the subsequent commercial purpose for the stream was associated with the production of a gasoline or diesel components.

The change in the definition of "manufacture" clearly indicates that EPA intended to capture "the extraction, for commercial purposes, of a component chemical substance from a previously existing chemical substance or complex combination of chemical substances." EPA's response also indicates that each individual process in the refinery could be considered to have a different commercial purpose. Therefore, EPA's interpretation stems from the fact that the gas stream is created in one unit and used in a subsequent unit, it has been:

1. Intentionally created

2. Has a different commercial purpose

3. Has been isolated because it was removed from one process to be used in another process

It is irrelevant whether or not the chemical substance is removed from the piping or is continuously used.

As a result of this revised interpretation, additional streams, primarily gaseous, were evaluated for CDR applicability. The definition change occurred between the 2006 principal reporting year and the 2012 principal reporting year; therefore, the change is only applicable to the 2012 reporting period and beyond.

- *CAS number assignment*

  CAS registry numbers for petroleum process streams are different than those associated with "pure" chemical substances like benzene or toluene because they are defined using either a chemical name, range of carbon chain atom, and/or chemical process that is derived from the product or intermediate. Thus, determining the proper CAS registry number to represent refinery petroleum process streams requires knowledge of specific refinery process units and the associated products and intermediates.

  Since many petroleum products and intermediates could be described as a mixture, EPA and the American Petroleum Institute (API) have defined a number of petroleum process stream terms, hence identifying these materials within the TSCA Inventory. These process stream terms are listed in the API Publication "Petroleum Process Stream Terms Included in the Chemical Substances Inventory under the Toxic Substances Control Act (TSCA)" (1983, reprinted in 1985).

- *Partial Exemptions*

  Petroleum process streams (listed in the API document noted above) receive a partial exemption from the CDR requirements. The partial exemption is for the chemical specific information related to processing and use (Part III of the Form U). In many cases, products and intermediates at a refinery should be evaluated using the list of partially exempted CAS registry numbers first in order to take advantage of the partial exemption. For example, pure isobutane has a CAS registry number of 75-28-5 and does not qualify for partial exemption; however, if a refinery produces a non-pure stream of isobutane, it likely meets the definition of CAS registry number 68477-33-8 (Gases, C3-4, isobutane rich), which is partially exempt. It is important to note that the product or intermediate stream must meet the associated petroleum process stream definition. A good source for CAS registry numbers for petroleum products at a refinery is the Material Safety Data Sheet (MSDS).

Relevant 2012 CDR Data Analysis for Petroleum Industries

In summary, the 2013 CDR collected information on 7,674 chemicals at 4,753 sites for 1,528 companies (EPA 2013a). EPA has used this data to perform generic analyses on these results, some of which has relevance to the petroleum industry. The applicable petroleum industry analyses are summarized in this section (EPA 2013c).

The Processing and Use Information (Part III) reported in the CDR represents the predominate segment of the analyses completed by EPA. Since, the majority of reportable CDR chemicals associated with the petroleum industry are Part III exempt (partially exempt), only "pure" manufactured chemicals are included in EPA analyses. The most common substances in the petroleum industry that are not partially exempt include, but are not limited to: Ethanol, Propane, Butane, Sulfur, Toluene, Benzene, and Hydrogen. The following table lists the top 20 fully reportable chemicals used in commercial products based on reported production volumes (EPA 2013c).

Table 1. Top 20 Chemicals Used in Commercial Products

Rank	Chemical Name	CAS #
1	Ethanol	64-17-5
2	Tricalcium silicate	12168-85-3
3	Iron oxide	1309-37-1
4	Ammonia	7664-41-7
5	Urea	57-13-6
6	Ammonium nitrate	6484-52-2
7	Propane	74-98-6
8	Butane	106-97-8
9	Dicalcium silicate	10034-77-2
10	Sulfuric acid	7664-93-9
11	Diammonium phosphate	7783-28-0
12	Monoammonium phosphate	7722-76-1
13	Calcium carbonate	471-34-1
14	Sulfur	7704-34-9
15	Aluminum calcium iron oxide	12068-35-8
16	Sodium carbonate	497-19-8
17	Ethylene	74-85-1
18	Aluminum	7429-90-5
19	Aluminum calcium oxide	12042-78-3
20	Toluene	108-88-3

The data in Table 1 indicates that five commonly used substances in the petroleum industry (Ethanol, Propane, Butane, Sulfur, and Toluene) are among the top 20 commercial chemicals produced (excluding partially exempt chemicals) in the United States (EPA 2013a).

Additionally, refineries proved to be the top producer of both butane and propane. Figure 1 shows the total production of the top five chemicals reported by refiners and compared it to total production of a chemical in the United States (EPA 2013a). The refinery and total production data was collected from the CDR database and production includes manufactured plus imported values. Of note, refiners produce 80 percent of the propane and 72 percent of the butane.

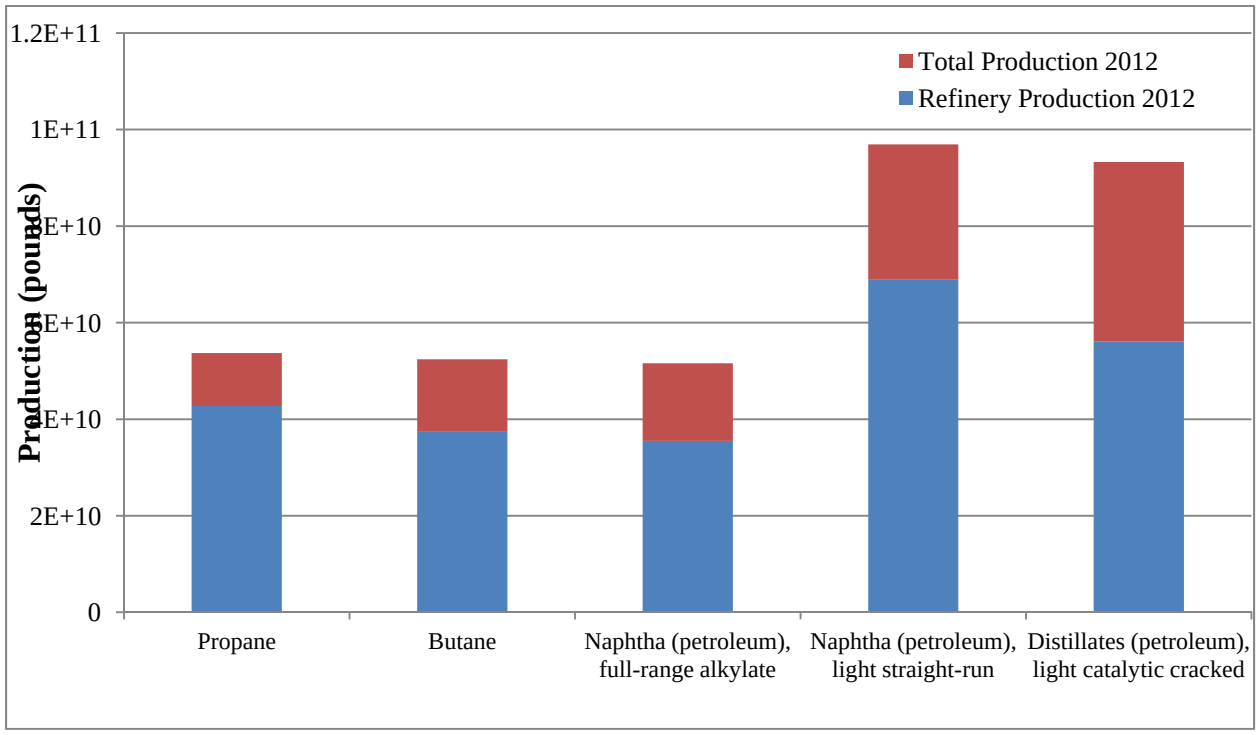

Figure 1. Comparison of refinery-specific production to total production (nationwide) for the top five chemicals produced by refineries. This may represent an underestimate due to confidential business information (CBI), which is not included in either value (EPA 2013a).

For each non-exempt reportable chemical, manufacturers were required to report the industrial sector that received and processed/used the reportable chemical. The data shown in the following figure (Figure 2) depicts the breakdown of the top eight industrial sectors reported for the 2012 data collection.

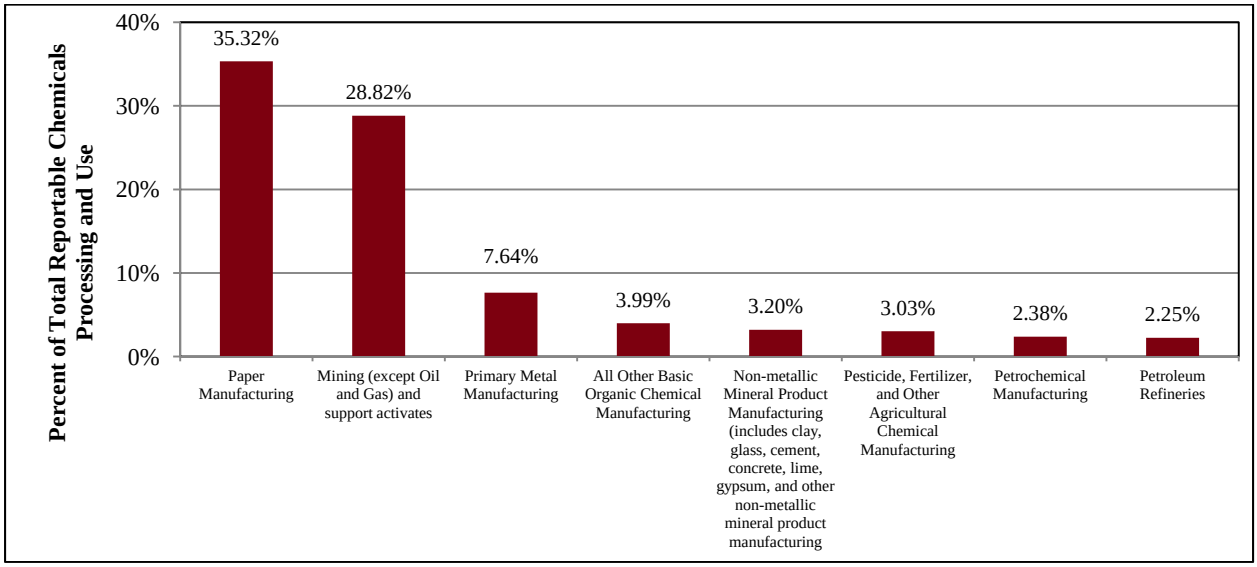

Figure 2. 2012 Top Eight Industrial Sectors that Processed and Used Fully Reportable Chemicals (Note: 87% of the 2012 processing and use data for reportable chemicals is represented) (EPA 2013c)

As shown on Figure 2, only 2.25 percent of fully reportable chemicals were processed and used in petroleum refining activities (EPA 2013c). However, several fully reportable substances that are reported by petroleum refineries are shipped to other industrial sectors for processing and use. For example, sulfur is a product from the refining process that is typically sold to agricultural chemical manufacturing companies to produce fertilizers and other products. Another example is sodium hydrosulfide (NaHS), also a byproduct from petroleum refining, which is usually shipped and used at paper manufacturing companies (EPA 2013c).

For more detailed analyses, or to view the 2012 CDR database, go to EPA CDR Webpage (http://epa.gov/cdr/).

Preparing for 2015 Principal Reporting Year

The CDR for 2015 reporting year will require data collection and detailed information for calendar years 2012 through 2015. Production volumes for all four years will need to be tracked and included with more detailed information (i.e. shipments, potential worker exposure, production & use, etc.) will need to be documented for the 2015 reporting year.

Differences between TSCA 2012 and 2016 Reports

As mentioned previously, there will be two major differences between the 2012 and 2016 CDR reports regarding the dependence on the principal reporting year production volume and the production volume thresholds for reporting, processing, and use information.

In all previous TSCA reports (prior to 2015), submitting production volumes from interim years (after the last principal reporting year and before the current principal reporting year (PRY)) were only required when the production volume of the PRY was equal to or greater than the reportable quantity. The 2015 principal reporting year CDR requires manufacturers (and importers) to report annual production volumes of all substances that were manufactured (and imported) in volumes of 25,000 lbs. or greater, for all calendar years since 2011 (EPA 2013a).

The reportable quantity that triggers reporting processing and use information (Part III on the Form U) has been decreasing since 2006. For the 2016 TSCA CDR, processing and use information is required for any chemical substance that was manufactured (including imported) in volumes of 25,000 lbs. or greater. Most chemical substances reported by refineries are partially exempt from reporting processing and use information. However, “pure” products that are shipped off site (e.g. benzene or propane) are not partially exempt and will have to report processing and use information if they exceed the production volume threshold (EPA 2013a).

Examples on how these differences would apply to a reporter:

1) Site X produces chemical substance A during the reporting period (2012-2015). Chemical substance A has a reportable quantity of 25,000+ lbs. The chemical substance A production volumes were:

   2012 – 28,000 lbs.

   2013 – 26,000 lbs.

2014 – 25,000 lbs.

2015 – 24,000 lbs.

Response:

In previous TSCA reports, this chemical substance A would not have been reported since the PRY (2015) production volume was below the reportable quantity. However, in the 2016 CDR, if any of the annual production volumes are over the reportable quantity, then the chemical substance must be reported. In this scenario, three years are over the reportable quantity, so reporting for chemical substance A is required. Only production volumes from 2012-2014 will need to be reported, and production volume and other full details (shipping, recycle, potential worker exposure, etc.) will need to be reported for 2015.

2) Site X produces and distributes benzene (CAS #: 71-43-2) off site during the reporting period (2012-2015). The benzene production volumes were:

2012 – 23,000 lb.

2013 – 25,000 lb.

2014 – 27,000 lb.

2015 – 29,000 lb.

Response:

Since the benzene is being shipped off site and not being completely used in the refinery as an intermediate product, it is not a partially exempt chemical (a list of partially exempt petrochemicals is documented in EPA "Instruction for the 2012 TSCA Chemical Data Reporting" in appendix C). Site X will have to report the benzene production volumes from all four years, full details (shipping, recycle, potential worker exposure, etc.) for 2015, and processing and use information based off 2015 (the PRY) since the annual production volume was greater than 25,000 lb.

Overview of the Chemical Safety Improvement Act (CSIA)

There may be other potential changes to TSCA for the next principal reporting year if a new act proposed by Congress is passed. The Chemical Safety Improvement Act (CSIA, s 1009) was introduced as a bipartisan effort by Senators David Vitter (R-LA) and the late Frank Lautenberg (D-NJ) in the Senate on May 22, 2013, and represents the most significant reform to TSCA in its 37 year history (the only major regulation that has never been updated (Plautz 2013). The CSIA has been proposed as a solution to some of the shortcomings that exist in the current TSCA regulations that have hindered EPA and industry to understand risk to human health and the environment of chemicals used and developed in the United States. Although the details are still being debated in the Senate, the following describes five of the changes currently recommended in the CSIA that may have the largest impact to the refinery sector.

First, the CSIA would revamp the framework in which existing chemicals are assessed (Grandfathered chemicals) (Reform TSCA 2013b). Chemicals will be prioritized based on hazard and exposure potential

and whether states have requested a safety assessment. Then, these safety assessments will be conducted on chemicals with the highest risk to human health and the environment and will be made available for public comment. The third part of the framework would include EPA's chemical safety analysis, which would determine if the chemical (or mixture) is safe to human health and the environment given its intended use. In addition to the safety assessment, EPA will also use additional risk-related and use-related information collected by states and economic data (cost and benefit analysis). Based on this final assessment, a constituent may either be deemed safe given its intended use or may be restricted, banned, or phased-out (Reform TSCA 2013a).

Second, new chemicals will be evaluated using EPA's current data and information review requirements for new chemicals and significant new uses. Once the reviews are complete, EPA must determine if the new chemical or new use can meet the appropriate safety standards and then impose new rules to control or restrict the chemical/new use, as appropriate (Reform TSCA 2013a).

Third, EPA's testing and data requirements for manufacturers will become more efficient and will require that EPA demonstrate the need for key additional information regarding safety assessments and final determinations.

Fourth, the new CSIA amendments will allow manufacturers to indicate if a chemical or mixture is active or inactive during the CDR period. Therefore, only chemicals that are currently active in commerce would be prioritized for safety assessments. However, manufacturers must still report inactive chemicals and notify EPA if these chemicals become active in the future (Reform TSCA 2013a and Bergeson and Campbell PC 2013).

Fifth, the confidential business information (CBI) section has been revised and will require companies to justify confidentiality claims. This revised section of TSCA will also provide flexibility for EPA in deciding how long a CBI exemption will last. The submitter can make a case for length of the exemption and EPA may approve or disapprove, as appropriate (Reform TSCA 2013a and Bergeson and Campbell PC 2013).

Best Practices

Based upon the knowledge gained during the 2012 reporting year, what is expected for the 2016 reporting year, and if CSIA is enacted, Trihydro recommendations and best practices have been developed to help ensure compliance for TSCA that is transparent, accurate and cost-effective. The following details Trihydro's recommendations for successful future reporting periods.

- Create block flow diagrams in order to identify the process streams at each site. The block flow diagrams should be labeled with streams and associated CAS numbers to ensure correct TSCA applicability and reporting quantities. Correct and accurate CAS number labeling will streamline the reporting process.

- The production volumes and applicable thresholds should be reviewed on an annual basis. Collecting data annually (on an Excel spreadsheet, internal database, etc,) instead of every four years will reduce the reporting burden during the CDR period. Examples of information sources that should be collected and reviewed include:

- Charge and yield summaries
- Physical inventories including tank contents and throughputs
- Purchasing records
- Shipping papers
- Manifests
- Sales records
- Unit production records
- Active or inactive streams

- Review recycle and reclamation activities on an annual basis. The gathered information should include the amount of material reclaimed or recycled in pounds, any concentration information, and any significant activities at the site that may impact the potential exposed worker number.
- Other data sources collected from the accounting department, Toxic Release Inventory (TRI) reports, or any other chemical inventory will be beneficial for completion of the CDR forms (Form U).
- Furthermore, an essential data source is a specific report that summarizes unit by unit total annual production of each associated TSCA stream, which many refineries refer to as a unit yields report. A unit yields report, if constructed correctly, is an important data source to TSCA CDR because it simplifies the data collection process and decreases the reporting burden.
- Keep up-to-date MSDS for all TSCA streams including products and intermediates.
- Reporting cohesiveness and consistency is important when filling out Form Us for corporations with multiple facilities. For example, the associated CAS number should match across different sites for the same TSCA stream.

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Toxic Substances Control Act:

Best Practices and Future Reform Update

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TSCA's Chemical Reporting Data Rule (CDR) requires EPA to compile, keep current, and publish a list of each chemical substance that is manufactured or processed in the United States.

~Section 8(b)

Outline

- Changes and Challenges for the 2012 Submissions
- What Can the 2012 Data Tell Us?
- Preparing for 2015 Reporting Year
- Overview on the Chemical Safety Improvement Act (CSIA)
- Best Practices for Future Reporting Years

Changes to 2012 Submittals

- Reporting through CDX Database
- Reporting Thresholds
- NAICS → IS Codes
- Water is Exempt
- Reporting Frequency
- Definitions
- Confidential Business Information

“If there is no struggle, there is no progress.”

- Frederick Douglass

Challenges to 2012 Reporting

- Online Submission Software
- New Definitions and Interpretations
  - “non-isolated intermediate”
  - “commercial purpose”
  - “manufacture”
- CAS Number Assignment
- Partial Exemptions

CDR Summary of Results by the Numbers

- Chemicals: 7,674
- Sites: 4,753
- Companies: 1,528

Table 1. Top 20 Chemicals Used in Commercial Products

Rank	Chemical Name	CAS #
1	Ethanol	64-17-5
2	Tricalcium silicate	12168-85-3
3	Iron oxide	1309-37-1
4	Ammonia	7664-41-7
5	Urea	57-13-6
6	Ammonium nitrate	6484-52-2
7	Propane	74-98-6
8	Butane	106-97-8
9	Dicalcium silicate	10034-77-2
10	Sulfuric acid	7664-93-9
11	Diammonium phosphate	7783-28-0
12	Monoammonium phosphate	7722-76-1
13	Calcium carbonate	471-34-1
14	Sulfur	7704-34-9
15	Aluminum calcium iron oxide	12068-35-8
16	Sodium carbonate	497-19-8
17	Ethylene	74-85-1
18	Aluminum	7429-90-5
19	Aluminum calcium oxide	12042-78-3
20	Toluene	108-88-3

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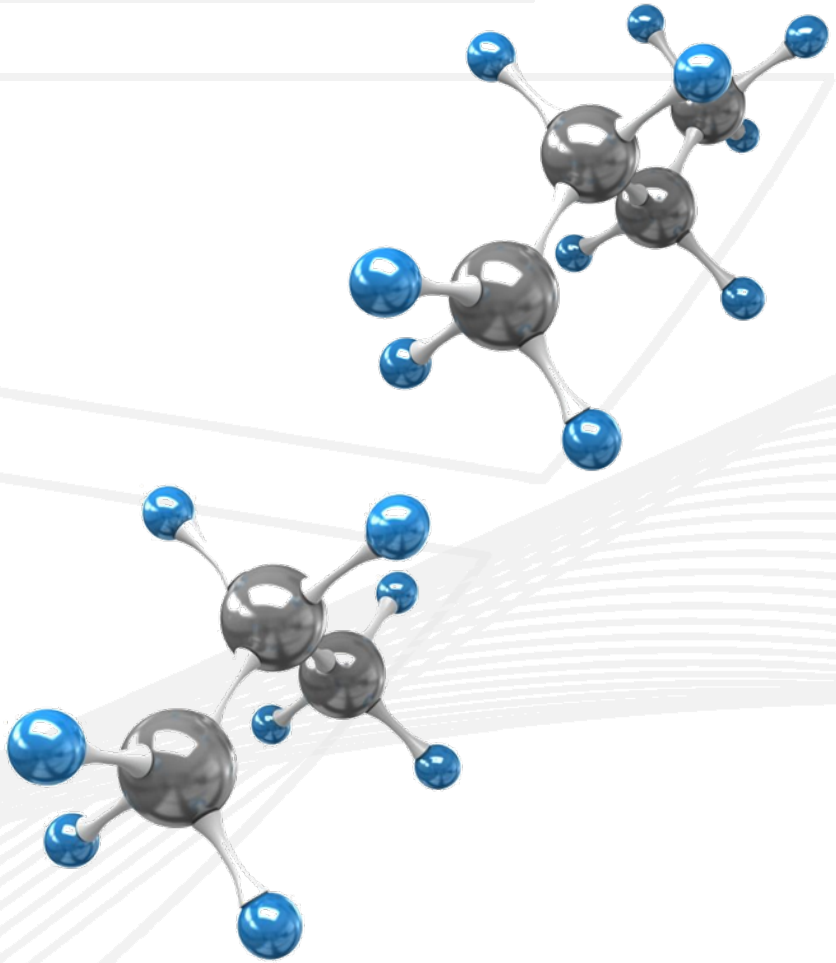
Differences in 2012 and 2016 Reporting

- Dependence on principal reporting year production volume
- Production volume thresholds for reporting, processing, and use information




Is this Reportable?

Example 1 – Is this Reportable in 2016?

- Site X produces “Chemical A” during the reporting period (2012-2015). “Chemical A” has a reportable quantity of 25,000+ lbs. The “Chemical A” production volumes were:
  - 2012 – 28,000 lbs.
  - 2013 – 26,000 lbs.
  - 2014 – 25,000 lbs.
  - 2015 – 24,000 lbs.

Example 2 – Is this Reportable in 2016?

- Site X produces and distributes benzene (CAS #: 71-43-2) off site during the reporting period (2012-2015). The benzene production volumes were:
  - 2012 – 23,000 lb.
  - 2013 – 25,000 lb.
  - 2014 – 27,000 lb.
  - 2015 – 29,000 lb.

Chemical Safety Improvement Act (CSIA)

6	2		16		39
C	He	Mi	S	Tr	Y
12.011	4.0026		32.065		88.906
Carbon	Helium		Sulfur		Yttrium

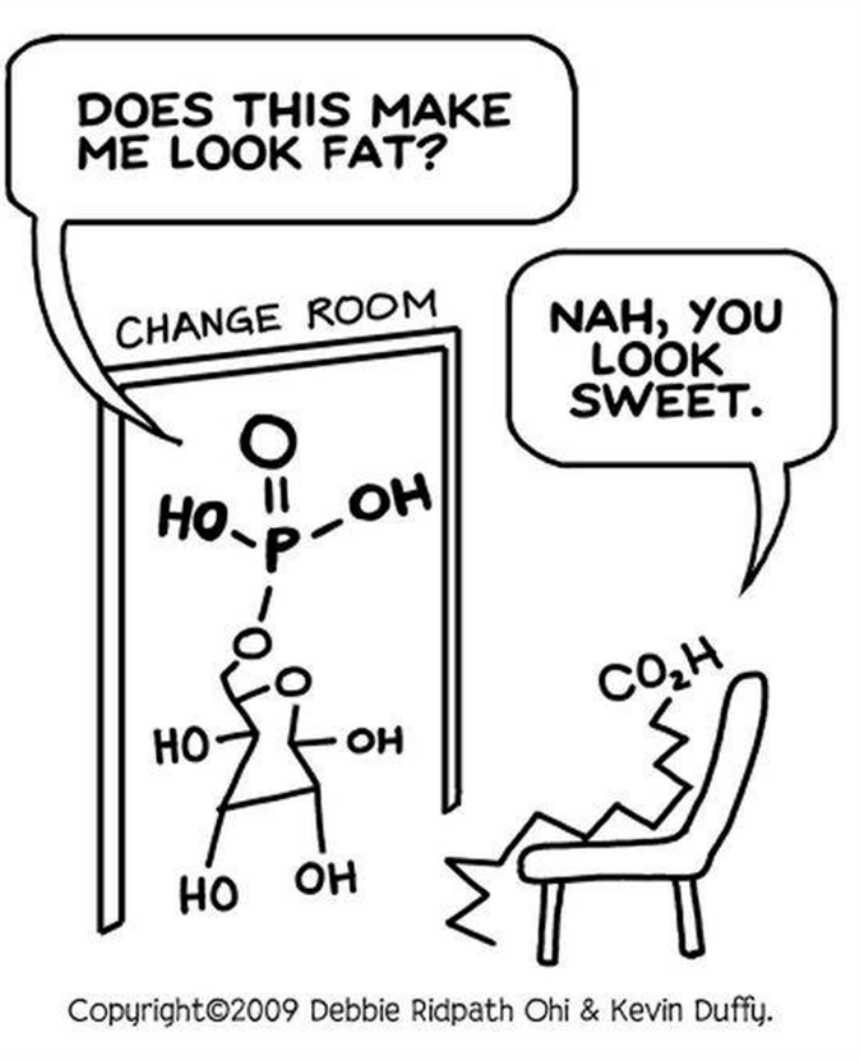
53	16
I	S
126.90	32.065
Iodine	Sulfur

27	8	
Co	O	L
58.933	15.999	
Cobalt	Oxygen	

www.granpyme.com

www.trace09.com

Modernizing TSCA



- Revamp Existing Framework
- Data Requirements Efficiencies
- Reporting Changes (active vs. inactive)
- CBI Claims

Best Practices

- Understand Process Streams
- Annual Review of Data
- Annual Data Collection
- Up-To-Date MSDS
- Reporting Cohesiveness and Consistency

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