

Case Studies for Reporting for the 2006 Partial Updating of the TSCA Chemical Inventory Database

U.S. Environmental Protection Agency
Office of Pollution Prevention and Toxics
Economics, Exposure and Technology Division

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INTRODUCTION

This document presents detailed case studies to illustrate how to report IUR information using Form U. EPA designed the case studies to cover a variety of reporting scenarios. **These case studies are not based on actual data, but are hypothetical situations generated to assist submitters in completing Form U.** This document is not a substitute for the Inventory Update Reporting (IUR) regulations located at 40 CFR Part 710, Subpart C. Additional information on the IUR reporting requirements is located in the *Instructions for Reporting for the 2006 Partial Updating of the TSCA Chemical Inventory Database (Instructions for Reporting)*. If you have specific questions about your reporting requirements after reviewing the IUR guidance materials you may call the TSCA Hotline at (202) 554-1404 or contact the TSCA Hotline by email at tsca-hotline@epa.gov.

Table 1 presents an index of topics addressed in each case study.

Table 1. Index of Case Study Topics

Topic	A	B	C	D	E	F	G	H	I	J	K
Determining which chemicals should be reported										X	
Completing Part I of Form U										X	
Completing Part II of Form U	X	X	X	X	X	X	X	X	X	X	X
Site-limited chemicals	X										
Importing a chemical or mixture		X			X						
Importing and manufacturing at the same site					X						
Reporting hydrates of inorganic salts						X					
Sending a chemical off-site in more than one concentration					X		X		X		X
Sending a chemical off-site in more than one physical form					X		X				
Completing Part III Section A	X	X	X				X	X	X		X
Exporting a chemical			X								
Multiple downstream uses							X	X	X		X
Use as a chemical intermediate (reacted)	X	X	X						X		
Completing Part III Section B							X	X	X		X
Aggregating similar entries											X
Intended for use in children's product(s)							X				
TSCA exempt uses						X			X		
Part III Partial Exemptions				X	X	X				X	
Inorganic substances					X	X				X	
Other partially exempt chemicals				X							

APPROACH FOR COMPLETING FORM U

These case studies provide examples of how the IUR regulations would be applied to particular fact situations, explain how these facts should be analyzed under the IUR regulations, and how the information required should be reported to EPA on Form U. The specific approach used in these examples to determine IUR reporting obligations is not required and other approaches may be used. Each case study is divided into the four sections described below.

Scenario

The scenario section of each case study outlines the known or reasonably ascertainable manufacturing-related information and lists potential sources for readily obtainable processing and use information. Figures are included where appropriate to illustrate the scenario and clarify the reporting of manufacturing, processing, and use information.

Determining the Reporting Requirements

In these case studies, EPA employed a simplified three step approach that companies can use to determine their reporting requirements. For purposes of these case studies, these reporting steps are evaluated for each chemical substance which is manufactured or imported in the scenario. These steps are listed below and are explained in greater detail in Chapter 2 of the Instructions for Reporting.

- Step I: Is your substance subject to the IUR regulation?
- Step II: Are you a manufacturer (or importer) who is required to report?
- Step III: What information do you need to report?

Figures 1 through 3 present decision logic diagrams to assist you in analyzing these reporting steps. References to the IUR regulation found in Part 710, subpart C of Title 40 of the Code of Federal Regulations are included for each decision point.

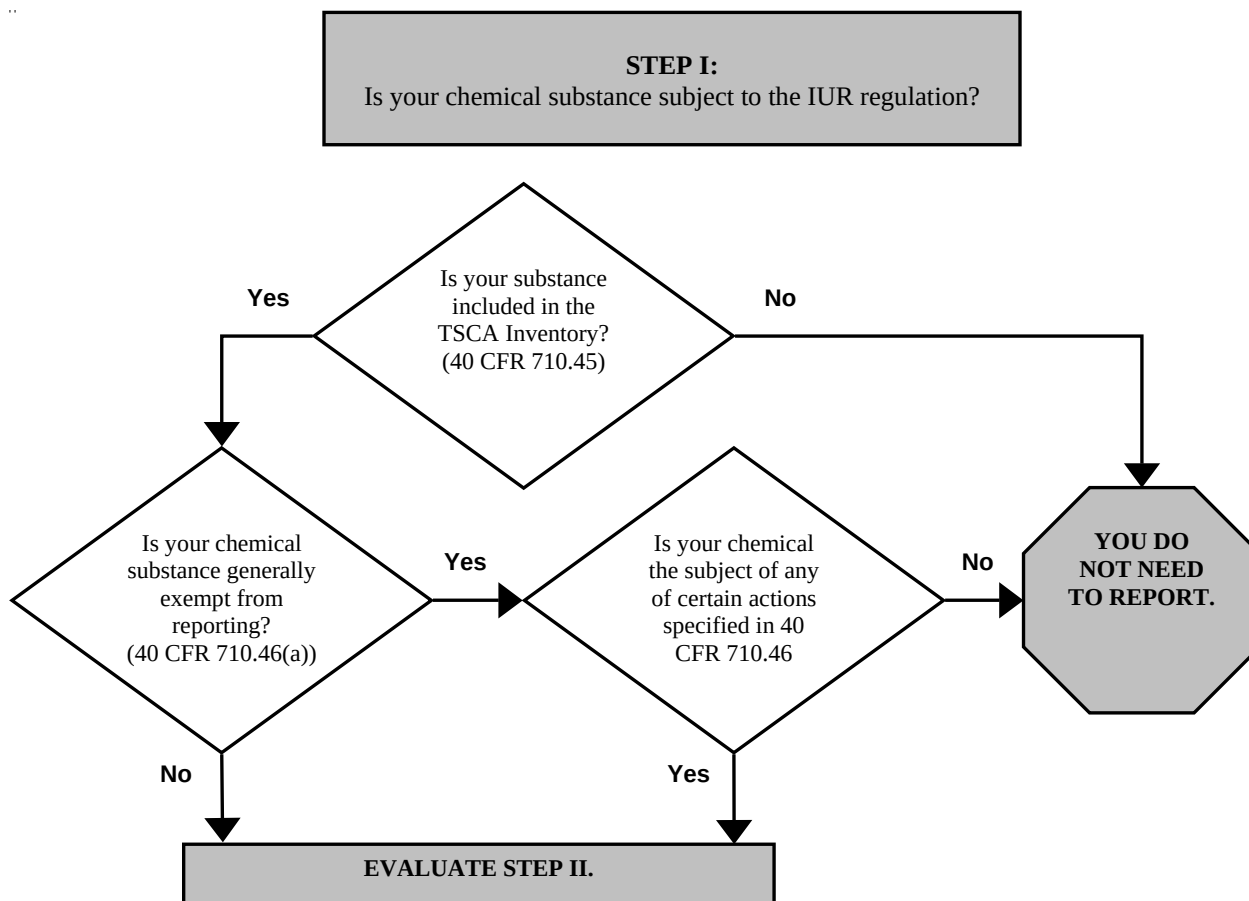


Figure 1. Decision Logic Diagram for Evaluating Step I

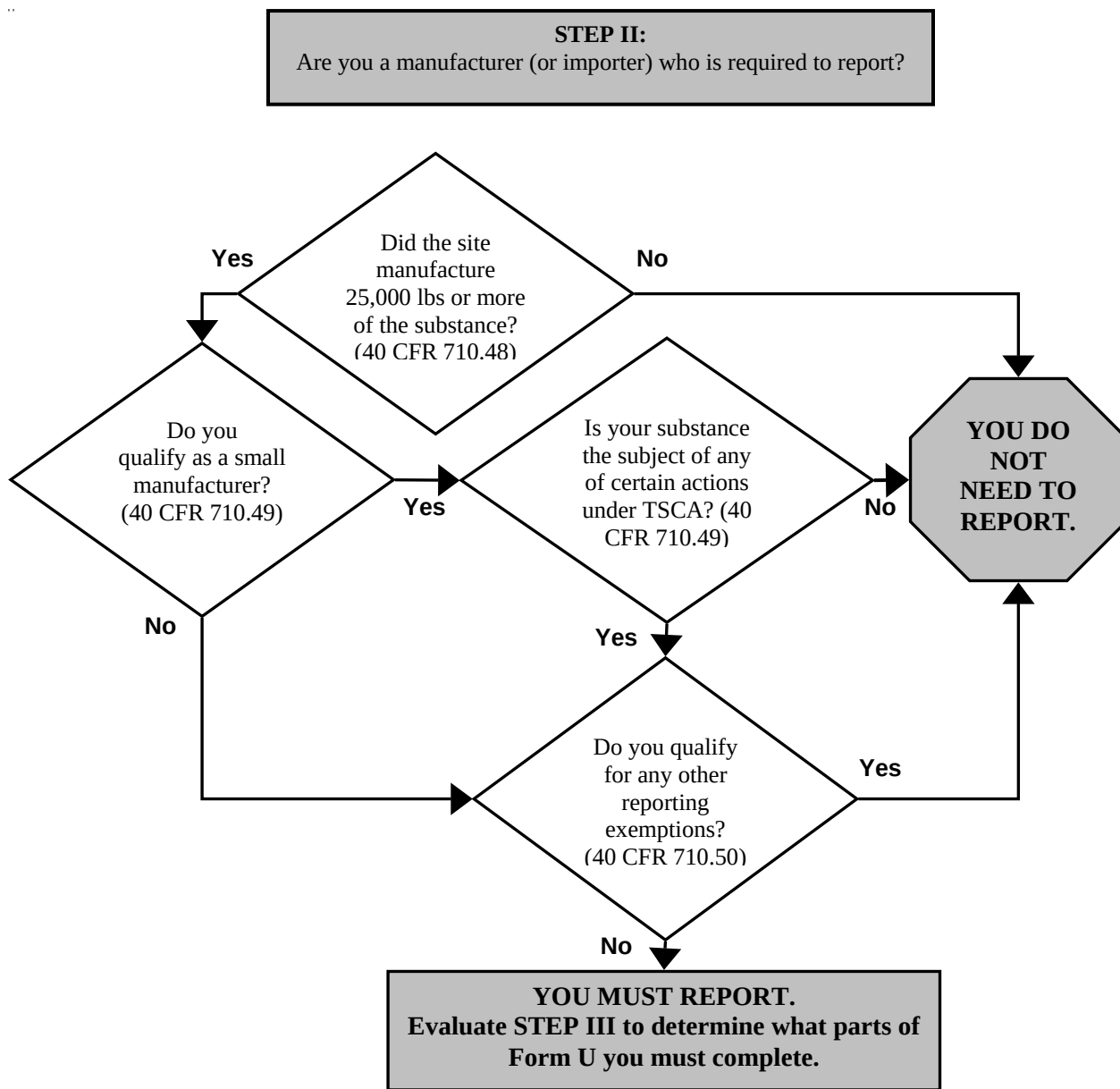


Figure 2. Decision Logic Diagram for Evaluating Step II

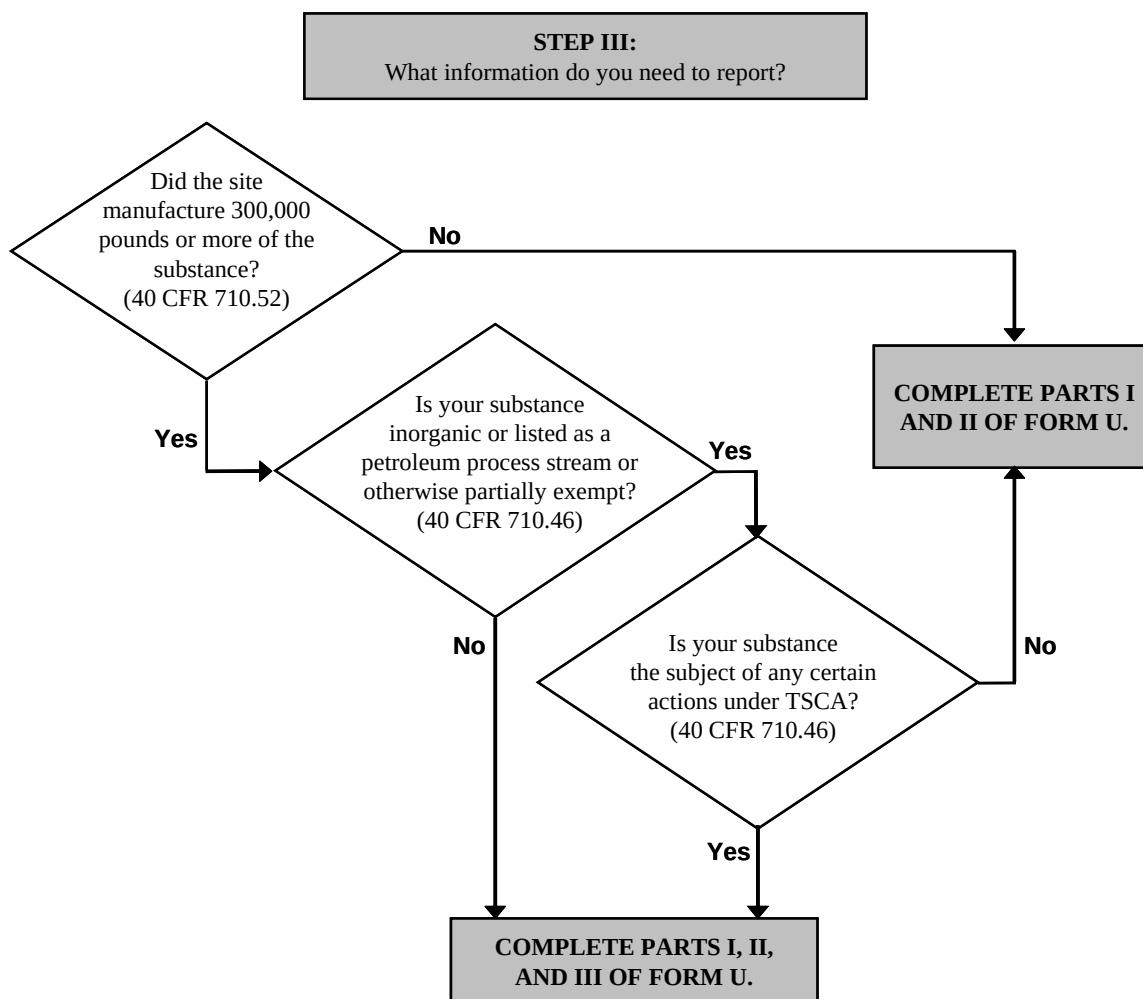


Figure 3. Decision Logic Diagram for Evaluating Step III

Completing Form U:

After you gather all relevant information and determine the information you need to report, you can complete Form U. The section entitled “Completing Form U” of each case study is designed to guide you through this process using flow diagrams and worksheets. You may wish to develop similar reporting aids when completing Form U. Key points are highlighted throughout the case studies. For more information on how to report the required information, please see Chapter 4 of the Instructions for Reporting.

Form U

A completed Form U is presented at the end of each case study. Because the information reported on Page 1 of Form U is similar for all of the case studies, a completed Page 1 is provided for only a few case studies. All case studies include a completed Page 2 of Form U.

Case Study A - Reporting a Site-Limited Intermediate Monomer

Scenario:

Company A manufactured 1,100,000 lbs/yr of hexamethylene diamine (HMDA, CAS# 124-09-4) at its Richmond site during calendar year 2005. The Chemical Abstracts Index/Preferred name for HMDA is 1,6-hexanediamine. HMDA is produced at the Richmond site and used solely as a monomer for the production of a polyamide at the same site. The polyamide is subsequently used in plastic products. HMDA is manufactured as a liquid solution at 89.6% concentration (1,228,000 total lbs of solution) and transferred to an on-site storage tank for future use. HMDA is subsequently completely consumed as a reactant to produce the polyamide. Company A estimates 12 workers are reasonably likely to be exposed to HMDA during sampling, maintenance, and equipment cleaning activities. Two additional workers are reasonably likely to be exposed while transferring HMDA from the storage tank to the reactor that produces the polyamide. Four administrative workers are employed at the Richmond site but not reasonably likely to be exposed to HMDA.

John Smith is the plant manager for the Company A's Richmond site. Emil Jones is the environmental manager at the Richmond site and can answer questions concerning the information reported on Form U. The mailing address for this site is 100 Chemical Highway, Richmond, VA 23222. The Richmond site applied for a Dun & Bradstreet number on the internet (www.dnb.com/us) and received the number 999999999. The headquarters of Company A are located in Mobile, AL; the Dun & Bradstreet number for Company A is 099999999. Company A has annual sales in excess of \$4 million.

Determining the Reporting Requirements:

Step I: HMDA is listed in the TSCA Inventory. Persons manufacturing HMDA do not qualify for an exemption from IUR requirements because HMDA is not a polymer, microorganism, naturally-occurring substance, or one of certain forms of natural gas. (See 40 CFR 710.46(a))

HMDA does not qualify as a non-isolated intermediate because it is removed from the vessel in which it is produced and stored in tanks.

Step II: Company A manufactured 25,000 pounds or more of HMDA during calendar year 2005 and does not qualify for an exemption as a small manufacturer under 40 CFR 710.49 because Company A manufactures 100,000 lbs or more of HMDA and has sales of \$4 million or more. Company A does not qualify for any of the exemptions from reporting found in 40 CFR 710.50 with respect to HMDA because this chemical was not imported as part of an article, nor was it used solely for research and development, nor was it manufactured as an impurity, non-isolated intermediate, or byproduct which was not used for a commercial purpose, nor was it otherwise manufactured in a manner described in 40 CFR 720.30(g) or (h).

Step III: Company A manufactured 300,000 pounds or more of HMDA during calendar year 2005 and does not qualify for a partial exemption from reporting of HDMA under the 40 CFR 710.46(b) because HDMA is not a substance termed a petroleum process stream, a specific exempted chemical substance, or an inorganic chemical substance.

Result: Company A should complete Parts I, II, and III of Form U with respect to its production of HMDA at the Richmond site and submit the information to EPA.

Completing Form U:

Part I: Site Identification

The information has been entered onto the first page of the sample Form U on page 10.

Part II: Section A. Chemical Identification

SECTION A. CHEMICAL IDENTIFICATION				CBI*	
2.A.1	Chemical Identifying Number	124-09-4	2.A.2	ID Code	C
2.A.3	Chemical Name	1,6-hexanediamine			

Basis/Rationale:

2.A.1 - The CAS number for HMDA.

2.A.2 - Code for CAS Number.

2.A.3 - Chemical Abstracts (CA) Index/Preferred name for HMDA.

Completing Form U: (Continued)**Part II: Section B. Manufacturing Information**

SECTION B. MANUFACTURING INFORMATION									
			CBI			a. Physical Form		b. Percent of Production Volume in Each Physical Form	
2.B.1	Company Information								
2.B.2	Site Information [†]								
2.B.3	Technical Contact Information					Check All That Apply	CBI	Percent	CBI
2.B.4	Site Limited (Y/N)	Y		2.B.10	Dry Powder				
2.B.5	Activity (Check all that apply)	☒ Manufacture ☐ Import		2.B.11	Pellets or Large Crystals				
2.B.6	Manufactured Production Volume (LB)	1,100,000		2.B.12	Water or Solvent Wet Solid				
2.B.7	Imported Production Volume (LB)	0		2.B.13	Other Solid				
2.B.8	Number of Workers (code)	W2		2.B.14	Gas or Vapor				
2.B.9	Maximum Concentration (code)	M4		2.B.15	Liquid	X		100	

Basis/Rationale:

- 2.B.4** - HMDA is produced at the Richmond site and completely consumed during the reaction to produce polyamide on-site; therefore, it is a site-limited chemical.
- 2.B.5** - HMDA is produced domestically.
- 2.B.6** - Company A manufactures 1,100,000 pounds of HMDA (the amount of HMDA solution should not be reported).
- 2.B.8** - W2 - At least 10 but fewer than 25. See Table A-1.
- 2.B.9** - M4 - From 61% to 90% by weight. The manufacture of HMDA by Company A at the Richmond site is site-limited. The maximum concentration at the time the chemical is reacted on-site to produce a different chemical substance is 89.6%.
- 2.B.15** - 100% of the monomer is a liquid at the time it is reacted on-site to produce a different chemical substance.

Table A-1. Calculation of the Number of Workers Reasonably Likely to be Exposed During Manufacture of HMDA

Activity	Total Number of Workers	Basis/Rationale
Sampling, Maintenance, and Equipment Cleaning	12	Company A estimate of workers reasonably likely to be exposed.
Administrative personnel	0	Company A believes administrative personnel are not reasonably likely to be exposed to HMDA.
Total	12	

Completing Form U: (Continued)**Part III: Section A. Industrial Processing and Use Data**

SECTION A. INDUSTRIAL PROCESSING AND USE DATA									N/A			
	a. Type of Process or Use		b. (5-digit) NAICS Code		c. Industrial Function Category		d. Percent Production Volume		e. Number of Sites		f. Number of Workers	
	Code	CBI	Code	CBI	Code	CBI	Percent	CBI	Code	CBI	Code	CBI
3.A.1	PC		32619		U16		100		S1		W1	
3.A.2												
3.A.3												
3.A.4												
3.A.5												

Completing Form U: (Continued)Basis/Rationale:**3.A.1-** Production of the polyamide

- PC - Processing as a reactant.
- 32619 - Other Plastic Product Manufacturing. HMDA is used as a reactant to produce polyamide for use in plastic products.
- U16 - Intermediates.
- 100% - The entire production of the chemical is used as an intermediate.
- S1 - Less than 10. HMDA produced at this site is processed solely at the Richmond site.
- W1 - Less than 10. Company A estimates 2 workers are reasonably likely to be exposed to HMDA during transfer of the chemical to the polyamide reactor.

Part III: Section B. Commercial and Consumer Use Data

SECTION B. COMMERCIAL AND CONSUMER USE DATA							N/A		X	
	a. Commercial and Consumer Product Category		b. Used in Products Intended for Children		c. Percent Production Volume associated with each category		d. Maximum Concentration associated with each category			
	Code	CBI	Y/N/NRO	CBI	Percent	CBI	Code	CBI		
3.B.1										
3.B.2										

Basis/Rationale:

- All of the HMDA produced by Company A at the Richmond site is used as an intermediate that is completely consumed during the production of the polyamide; therefore, none of the HMDA leaves the site where it is produced for commercial or consumer use. Company A would mark the "N/A" box in the upper right-hand corner of Part III, Section B to indicate that the information reported in this section is not applicable.

Form U – Case Study A

(IMPORTANT: Type only, read instructions before completing form)

PAGE 1 of ____


FORM
U **2006**

U.S. Environmental Protection Agency
 Washington, DC 20460
Partial Updating of TSCA Inventory Data Base
Site Report
 (Section 8(a) Toxic Substances Control Act, 15 U.S.C. 2607(a))

FOR EPA USE ONLY

Report Number	
Mark "X" here if this is a revision to the previous report	

CERTIFICATION

Certification Statement: I hereby certify to the best of my knowledge and belief that Parts I and II have been completed in compliance with the requirements of 40 CFR 710.52(c)(1), (2), and (3); Part III of this form has been completed in compliance with the requirements of 40 CFR 710.52(c)(4); and any confidentiality claims are true and correct as to that information for which they have been asserted.

Signature		Date signed	
Name (printed)	John Smith	Official Title	Plant Manager

PART I. SITE IDENTIFICATION INFORMATION**SECTION A. COMPANY INFORMATION***

1.A.1	Company Name	Company A, Inc.
1.A.2	Company Dun & Bradstreet Number	099999999

SECTION B. SITE INFORMATION*

1.B.1	Site Name	Company A Richmond Site			
1.B.2	Site Dun & Bradstreet Number	999999999	EPA Facility Identification Number	For EPA Use Only Leave Blank	
1.B.3	Street Address (Line 1)	100 Chemical Highway			
1.B.4	Street Address (Line 2)				
1.B.5	City	Richmond	1.B.6	County / Parish	Chesterfield
1.B.7	State	VA	1.B.8	Zip code	23222

SECTION C. TECHNICAL CONTACT INFORMATION*

1.C.1	Name	Emil Jones	1.C.2	Telephone	555-555-5555			
1.C.3	Email Address	Emil.jones@companya.com						
1.C.4	Mailing Address (Line 1)	100 Chemical Highway						
1.C.5	Mailing Address (Line 2)							
1.C.6	City	Richmond	1.C.7	State	VA	1.C.8	Zip Code	23222

* Confidentiality claims for information in Part I, Sections A, B, and C, are made, as necessary, for each chemical substance on subsequent pages.

EPA Form Number <7740-8> (Rev 06/07/06) - Previous editions are obsolete

Form Approved OMB Number: 2070-0162 (expiration May 2009)

Form U – Case Study A

Page ____ of ____
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PART II. MANUFACTURING INFORMATION

SECTION A. CHEMICAL IDENTIFICATION				CBI*	
2.A.1	Chemical Identifying Number	124-09-4	2.A.2	ID Code	C
2.A.3	Chemical Name	1,6-hexanediamine			

SECTION B. MANUFACTURING INFORMATION									
		CBI			a. Physical Form		b. Percent of Production Volume in Each Physical Form		
2.B.1	Company Information								
2.B.2	Site Information [†]								
2.B.3	Technical Contact Information				Check All That Apply	CBI	Percent	CBI	
2.B.4	Site Limited (Y/N)	Y	2.B.10	Dry Powder					
2.B.5	Activity (Check all that apply)	☒ Manufacture ☐ Import	2.B.11	Pellets or Large Crystals					
2.B.6	Manufactured Production Volume (LB)	1,100,000	2.B.12	Water or Solvent Wet Solid					
2.B.7	Imported Production Volume (LB)	0	2.B.13	Other Solid					
2.B.8	Number of Workers (code)	W2	2.B.14	Gas or Vapor					
2.B.9	Maximum Concentration (code)	M4	2.B.15	Liquid	X		100		

PART III. PROCESSING AND USE INFORMATION

Complete Part III, Sections A and B if the sum of the production volumes noted in Blocks 2.B.6 and 2.B.7 is 300,000 pounds or more.

SECTION A. INDUSTRIAL PROCESSING AND USE DATA								N/A				
	a. Type of Process or Use		b. (5-digit) NAICS Code		c. Industrial Function Category		d. Percent Production Volume	e. Number of Sites		f. Number of Workers		
	Code	CBI	Code	CBI	Code	CBI	Percent	CBI	Code	CBI	Code	CBI
3.A.1	PC		32619		U16		100		S1		W1	
3.A.2												
3.A.3												
3.A.4												
3.A.5												
3.A.6												
3.A.7												
3.A.8												
3.A.9												
3.A.10												

SECTION B. COMMERCIAL AND CONSUMER USE DATA						N/A		X	
	a. Commercial and Consumer Product Category		b. Used in Products Intended for Children		c. Percent Production Volume associated with each category		d. Maximum Concentration associated with each category		
	Code	CBI	Y/N/NRO	CBI	Percent	CBI	Code	CBI	
3.B.1									
3.B.2									
3.B.3									
3.B.4									
3.B.5									
3.B.6									
3.B.7									
3.B.8									
3.B.9									
3.B.10									

[†]Substantiation required for CBI claims on chemical identity and site information.

Case Study B - Reporting an Imported Chemical

Scenario:

Company B imported 27,000,000 pounds of a liquid solution containing formaldehyde (CAS# 50-00-0) at 37% concentration (9,990,000 pounds of formaldehyde) to its New Jersey site during calendar year 2005. The New Jersey site arranged for the import transaction, paid all of the applicable duties, and completed and signed the documents facilitating the import transaction. Company B has sales in excess of 40 million dollars per year.

Formaldehyde is typically shipped in solution with water and methanol to prevent polymerization. This case study is limited to reporting for formaldehyde. Company B should evaluate the IUR requirements for all substances in the imported solution.

Company B sells the 37% formaldehyde solution to 12 customer sites, who use the formaldehyde to manufacture a variety of organic chemicals. Company B does not repackage the formaldehyde; however, two workers occasionally sampled the chemical and were reasonably likely to be exposed to formaldehyde.

Company B knows that some of its customers who purchase formaldehyde operate 24 hours per day throughout the year, using four shifts to support operations. Using their knowledge of use of formaldehyde at their customers' sites and best professional judgment, Company B estimates between four and six workers are reasonably likely to be exposed to formaldehyde per shift at each of their customers' sites.

Determining the Reporting Requirements:

- Step I: Formaldehyde is listed in the TSCA Inventory. Persons manufacturing formaldehyde do not qualify for an exemption from reporting under the IUR regulation because formaldehyde is not a polymer, microorganism, naturally occurring substance, or one of certain forms of natural gas. (See 40 CFR 710.46(a))
- Step II: Company B imported 25,000 pounds or more of formaldehyde during calendar year 2005 and does not qualify as a small manufacturer under 40 CFR 710.49 because its sales are \$40 million or more. Company B did not import the formaldehyde as part of an article, nor intend to use formaldehyde solely for research and development, nor qualify for any other reporting exemption found in 40 CFR 710.50.
- Step III: Company B imported 300,000 pounds or more of formaldehyde during calendar year 2005 and does not qualify for a partial exemption from reporting requirements under the IUR regulation given to persons who manufacture substances termed petroleum process streams, specific exempted chemical substances, and inorganic chemical substances. (See 40 CFR 710.46(b))
- Result: Company B should complete and submit Parts I, II, and III of Form U with respect to its importation of formaldehyde at its New Jersey site.

Completing Form U:

Because Part I is completed in the same manner as in the previous case study, it is omitted here.

Part II: Section A. Chemical Identification

SECTION A. CHEMICAL IDENTIFICATION				CBI*	
2.A.1	Chemical Identifying Number	50-00-0	2.A.2	ID Code	C
2.A.3	Chemical Name	Formaldehyde			

Basis/Rationale:

2.A.1 - The CAS number for formaldehyde.

2.A.2 - Code for CAS Number.

2.A.3 - Chemical Abstracts (CA) Index/Preferred name.

Part II: Section B. Manufacturing Information

SECTION B. MANUFACTURING INFORMATION									
			CBI			a. Physical Form		b. Percent of Production	
2.B.1	Company Information							Volume in Each	
2.B.2	Site Information [†]							Physical Form	
2.B.3	Technical Contact Information					Check All That Apply	CBI	Percent	CBI
2.B.4	Site Limited (Y/N)	N		2.B.10	Dry Powder				
2.B.5	Activity (Check all that apply)	☐ Manufacture ☒ Import		2.B.11	Pellets or Large Crystals				
2.B.6	Manufactured Production Volume (LB)	0		2.B.12	Water or Solvent Wet Solid				
2.B.7	Imported Production Volume (LB)	9,990,000		2.B.13	Other Solid				
2.B.8	Number of Workers (code)	W1		2.B.14	Gas or Vapor				
2.B.9	Maximum Concentration (code)	M3		2.B.15	Liquid	X		100	

Basis/Rationale:

2.B.4 - Formaldehyde is imported, and then shipped off-site; therefore it is not site-limited.

2.B.5 - Formaldehyde is imported; domestic manufacture of formaldehyde does not occur at this site.

2.B.7 - Company B imported 9,990,000 pounds of formaldehyde during calendar year 2005 (Company B would not report the amount of solution imported).

2.B.8 - W1- Less than 10. Two workers who occasionally sample the formaldehyde are reasonably likely to be exposed to formaldehyde.

2.B.9 - M3 - From 31% to 60% by weight. The maximum concentration when formaldehyde is sent off-site by Company B is 37%.

2.B.15 - 100% of the formaldehyde is sent off-site as a liquid.

Completing Form U: (Continued)**Part III: Section A. Industrial Processing and Use Data**

SECTION A. INDUSTRIAL PROCESSING AND USE DATA									N/A			
a. Type of Process or Use		b. (5-digit) NAICS Code		c. Industrial Function Category		d. Percent Production Volume		e. Number of Sites		f. Number of Workers		
	Code	CBI	Code	CBI	Code	CBI	Percent	CBI	Code	CBI	Code	CBI
3.A.1	PC		32519		U16		100		S2		W5	
3.A.2												
3.A.3												
3.A.4												
3.A.5												

Basis/Rationale:**3.A.1-** Production of organic chemicals:

- a. PC - Processing as a reactant.
- b. 32519 - Other Basic Organic Chemical Manufacturing.
- c. U16 - Intermediates.
- d. 100% - All of the production volume is used as an intermediate.
- e. S2 – At least 10 but less than 25. Company B sells formaldehyde to customers at 12 sites for use as a reactant to produce other chemical substances and has no readily obtainable information that formaldehyde has any use other than as a reactant at these sites.
- f. W5 - At least 100 but less than 500. Company B estimates 4 to 6 workers are reasonably likely to be exposed per shift per site. 4 to 6 workers/shift-site x 4 shifts x 12 sites = 192 to 288 workers. Note that the number of sites and number of workers are reported in ranges.

Part III: Section B. Commercial and Consumer Use Data

SECTION B. COMMERCIAL AND CONSUMER USE DATA						N/A		X	
a. Commercial and Consumer Product Category		b. Used in Products Intended for Children		c. Percent Production Volume associated with each category		d. Maximum Concentration associated with each category			
	Code	CBI	Y/N/NRO	CBI	Percent	CBI	Code	CBI	
3.B.1									
3.B.2									

Basis/Rationale:

- Using readily obtainable information, Company B believes that its customers use formaldehyde as a reactant which is completely consumed during the production of other chemical substances at the 12 customer sites and is never incorporated into products for commercial or consumer use. Therefore, Company B would check the “N/A” box in the upper, right-hand corner of Part III, Section B to indicate that the information in this section is not applicable.

Form U – Case Study B

Page ____ of ____
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PART II. MANUFACTURING INFORMATION

SECTION A. CHEMICAL IDENTIFICATION				CBI*	
2.A.1	Chemical Identifying Number	50-00-0	2.A.2	ID Code	C
2.A.3	Chemical Name	Formaldehyde			

SECTION B. MANUFACTURING INFORMATION									
		CBI			a. Physical Form		b. Percent of Production Volume in Each Physical Form		
2.B.1	Company Information								
2.B.2	Site Information [†]								
2.B.3	Technical Contact Information				Check All That Apply	CBI	Percent	CBI	
2.B.4	Site Limited (Y/N)	N	2.B.10	Dry Powder					
2.B.5	Activity (Check all that apply)	☐ Manufacture ☒ Import	2.B.11	Pellets or Large Crystals					
2.B.6	Manufactured Production Volume (LB)	0	2.B.12	Water or Solvent Wet Solid					
2.B.7	Imported Production Volume (LB)	9,990,000	2.B.13	Other Solid					
2.B.8	Number of Workers (code)	W1	2.B.14	Gas or Vapor					
2.B.9	Maximum Concentration (code)	M3	2.B.15	Liquid	X		100		

PART III. PROCESSING AND USE INFORMATION

Complete Part III, Sections A and B if the sum of the production volumes noted in Blocks 2.B.6 and 2.B.7 is 300,000 pounds or more.

SECTION A. INDUSTRIAL PROCESSING AND USE DATA								N/A				
	a. Type of Process or Use		b. (5-digit) NAICS Code		c. Industrial Function Category		d. Percent Production Volume		e. Number of Sites		f. Number of Workers	
	Code	CBI	Code	CBI	Code	CBI	Percent	CBI	Code	CBI	Code	CBI
3.A.1	PC		32519		U16		100		S2		W5	
3.A.2												
3.A.3												
3.A.4												
3.A.5												
3.A.6												
3.A.7												
3.A.8												
3.A.9												
3.A.10												

SECTION B. COMMERCIAL AND CONSUMER USE DATA						N/A		X	
	a. Commercial and Consumer Product Category		b. Used in Products Intended for Children		c. Percent Production Volume associated with each category		d. Maximum Concentration associated with each category		
	Code	CBI	Y/N/NRO	CBI	Percent	CBI	Code	CBI	
3.B.1									
3.B.2									
3.B.3									
3.B.4									
3.B.5									
3.B.6									
3.B.7									
3.B.8									
3.B.9									
3.B.10									

[†]Substantiation required for CBI claims on chemical identity and site information.

Case Study C - Reporting a Chemical that is Exported

Scenario:

Company C manufactured 1,000,000 pounds of a solution containing 85% liquid cyclohexane by fractional distillation (850,000 lbs of cyclohexane, CAS# 110-82-7) at a site in New Jersey during calendar year 2005. Company C used 600,000 pounds of solution (510,000 pounds of cyclohexane) on-site as a reactant to make other organic chemicals, such as cyclohexanol and cyclohexanone and exported 400,000 pounds of solution (340,000 pounds of cyclohexane) to a facility located outside the customs territory of the United States. Company C estimates the following workers are reasonably likely to be exposed during the distillation and separation of cyclohexane.

Only report information for manufacturing, processing, and use activities that occur domestically. You are not required to report information related to activities that occur outside the customs territory of the United States.

- 4 workers operate the manufacturing equipment, including sampling;
- 2 workers analyze the cyclohexane in the laboratory;
- 4 workers drum the cyclohexane; and
- 4 workers perform maintenance and equipment cleaning activities.

Company C estimates an additional 12 workers are reasonably likely to be exposed during processing and use of the cyclohexane:

- 4 workers unload cyclohexane from drums; and
- 8 workers operate and maintain process equipment during the manufacture of other chemicals.

Company C has sales in excess of \$4 million per year.

Determining the Reporting Requirements:

- Step I: Cyclohexane is listed in the TSCA Inventory. Cyclohexane does not qualify for an exemption from IUR reporting because it is not a polymer, microorganism, naturally occurring substance, or one of certain forms of natural gas. (See 40 CFR 710.46(a))
- Step II: Company C manufactures 25,000 pounds or more of cyclohexane and does not qualify for an exemption as a small manufacturer under 40 CFR 710.49 because it manufactures 100,000 lbs or more of cyclohexane and has total annual sales of \$4 million or more. Company C does not qualify for any of the exemptions from reporting of cyclohexane found in 40 CFR 710.50 because this chemical was not imported as part of an article, nor was it used solely for research and development, nor was it manufactured as an impurity, non-isolated intermediate, or byproduct which was not used for a commercial purpose, nor was it manufactured in any other manner described in 40 CFR 720.30(g) or (h).

Determining the Reporting Requirements: (Continued)

Step III: Company C manufactured 300,000 pounds or more of cyclohexane during calendar year 2005 and does not qualify for a partial exemption from reporting requirements under the IUR regulation given to persons who manufacture substances termed petroleum process streams, specific exempted chemical substances, and inorganic chemical substances. (See 40 CFR 710.46(b))

Result: Company C should complete Parts I, II, and III of Form U for cyclohexane and submit the information to EPA.

Completing Form U:

Because Part I is completed in the same manner as in a previous case study, it is omitted here.

Part II: Section A. Chemical Identification

SECTION A. CHEMICAL IDENTIFICATION				CBI*	
2.A.1	Chemical Identifying Number	110-82-7	2.A.2	ID Code	C
2.A.3	Chemical Name	Cyclohexane			

Basis/Rationale:

2.A.1 - The CAS number for Cyclohexane.

2.A.2 - Code for CAS Number.

2.A.3 - Chemical Abstracts (CA) Index/Preferred name.

Part II: Section B. Manufacturing Information

SECTION B. MANUFACTURING INFORMATION									
			CBI			a. Physical Form		b. Percent of Production Volume in Each Physical Form	
2.B.1	Company Information								
2.B.2	Site Information [†]								
2.B.3	Technical Contact Information					Check All That Apply	CBI	Percent	CBI
2.B.4	Site Limited (Y/N)	N		2.B.10	Dry Powder				
2.B.5	Activity (Check all that apply)	☒ Manufacture ☐ Import		2.B.11	Pellets or Large Crystals				
2.B.6	Manufactured Production Volume (LB)	850,000		2.B.12	Water or Solvent Wet Solid				
2.B.7	Imported Production Volume (LB)	0		2.B.13	Other Solid				
2.B.8	Number of Workers (code)	W2		2.B.14	Gas or Vapor				
2.B.9	Maximum Concentration (code)	M4		2.B.15	Liquid	X		100	

Completing Form U: (Continued)Basis/Rationale:

- 2.B.4** - Cyclohexane is exported; therefore, it is not site limited.
2.B.5 - Cyclohexane is produced domestically; it is not imported.
2.B.6 - Company C manufactures 850,000 pounds of cyclohexane (Company C should not report the amount of solution produced).
2.B.8 - W2 - At least 10 but less than 25. Company C estimates 14 workers are reasonably likely to be exposed during the manufacture of cyclohexane.
2.B.9 - M4 - From 61% to 90% by weight. The maximum concentration leaving the site is 85%.
2.B.15 - 100% - All of the cyclohexane is reacted on-site or leaves the site of manufacture as a liquid.

Part III: Processing and Use Information

SECTION A. INDUSTRIAL PROCESSING AND USE DATA									N/A			
	a. Type of Process or Use		b. (5-digit) NAICS Code		c. Industrial Function Category		d. Percent Production Volume		e. Number of Sites		f. Number of Workers	
	Code	CBI	Code	CBI	Code	CBI	Percent	CBI	Code	CBI	Code	CBI
3.A.1	PC		32519		U16		60		S1		W2	
3.A.2												
3.A.3												
3.A.4												
3.A.5												

Basis/Rationale:**3.A.1-** Production of organic chemicals:

- PC - Processing as a reactant. Company C uses cyclohexane as a reactant to produce other chemical substances.
- 32519 - Other Basic Organic Chemical Manufacturing.
- U16 - Intermediates. Company C uses cyclohexane as an intermediate to produce other chemical substances.
- 60% - The percentage of the production volume used to manufacture other chemicals. 40% of the total production volume is exported, but industrial processing and use information related to this amount need not be reported on Part III because the activities occurred outside the customs territory of the U.S.
- S1 – Less than 10 sites. Company C uses the cyclohexane at its own site. Company C does not need to include the number of facilities to which cyclohexane is exported.
- W2 - At least 10 but less than 25. Company C estimates 12 workers are reasonably likely to be exposed during the on-site use of cyclohexane to manufacture other chemicals.

Completing Form U: (Continued)

SECTION B. COMMERCIAL AND CONSUMER USE DATA						N/A		X	
a. Commercial and Consumer Product Category		b. Used in Products Intended for Children		c. Percent Production Volume associated with each category		d. Maximum Concentration associated with each category			
Code	CBI	Y/N/NRO	CBI	Percent	CBI	Code	CBI		
3.B.1									
3.B.2									

Basis/Rationale:

- A portion of the cyclohexane is reacted (consumed) during the production of the other chemical substances and is never directly sold for commercial or consumer use in the United States and the remainder is exported. Processing and use information should not be reported for activities occurring outside the United States. Therefore, Company C would check the “N/A” box in the upper, right-hand corner of Part III, Section B because cyclohexane is not used for commercial or consumer uses in the United States.

Form U – Case Study C

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PART II. MANUFACTURING INFORMATION

SECTION A. CHEMICAL IDENTIFICATION				CBI*	
2.A.1	Chemical Identifying Number	110-82-7	2.A.2	ID Code	C
2.A.3	Chemical Name	Cyclohexane			

SECTION B. MANUFACTURING INFORMATION									
		CBI			a. Physical Form		b. Percent of Production Volume in Each Physical Form		
2.B.1	Company Information								
2.B.2	Site Information [†]								
2.B.3	Technical Contact Information				Check All That Apply	CBI	Percent	CBI	
2.B.4	Site Limited (Y/N)	N	2.B.10	Dry Powder					
2.B.5	Activity (Check all that apply)	☒ Manufacture ☐ Import	2.B.11	Pellets or Large Crystals					
2.B.6	Manufactured Production Volume (LB)	850,000	2.B.12	Water or Solvent Wet Solid					
2.B.7	Imported Production Volume (LB)	0	2.B.13	Other Solid					
2.B.8	Number of Workers (code)	W2	2.B.14	Gas or Vapor					
2.B.9	Maximum Concentration (code)	M4	2.B.15	Liquid	X		100		

PART III. PROCESSING AND USE INFORMATION

Complete Part III, Sections A and B if the sum of the production volumes noted in Blocks 2.B.6 and 2.B.7 is 300,000 pounds or more.

SECTION A. INDUSTRIAL PROCESSING AND USE DATA									N/A			
	a. Type of Process or Use		b. (5-digit) NAICS Code		c. Industrial Function Category		d. Percent Production Volume		e. Number of Sites		f. Number of Workers	
	Code	CBI	Code	CBI	Code	CBI	Percent	CBI	Code	CBI	Code	CBI
3.A.1	PC		32519		U16		60		S1		W2	
3.A.2												
3.A.3												
3.A.4												
3.A.5												
3.A.6												
3.A.7												
3.A.8												
3.A.9												
3.A.10												

SECTION B. COMMERCIAL AND CONSUMER USE DATA							N/A		X	
	a. Commercial and Consumer Product Category		b. Used in Products Intended for Children		c. Percent Production Volume associated with each category		d. Maximum Concentration associated with each category			
	Code	CBI	Y/N/NRO	CBI	Percent	CBI	Code	CBI		
3.B.1										
3.B.2										
3.B.3										
3.B.4										
3.B.5										
3.B.6										
3.B.7										
3.B.8										
3.B.9										
3.B.10										

[†]Substantiation required for CBI claims on chemical identity and site information.

Case Study D - Reporting a Partially Exempt Chemical

Scenario:

Company D produced 5,000,000 lbs/yr of benzene, mono-C14-16-alkyl derivatives (CAS # 129813-60-1) in liquid solutions at concentrations up to 95% (at least 5,260,000 lbs of solution) at a site in Louisiana during calendar year 2005. Company D distributed the entire amount produced (5,000,000 lbs) to 12 detergent manufacturers for sulfonation and formulation into laundry detergents. Company D had sales in excess of four million dollars in calendar year 2005.

Benzene, mono-C14-16-alkyl derivs., is listed as a partially exempt chemical in 40 CFR 710.46(b)(2)(iv) and is not the subject of any of certain actions under TSCA listed in the initial paragraph of 40 CFR 710.46; therefore, Part III reporting is not required and Company D does not need to evaluate downstream processing and use information.

Company D has two production lines that operate 24 hours per day, 5 days per week employing 3 shifts of workers. Table D-1 shows the number of workers reasonably likely to be exposed to benzene, mono-C14-16-alkyl derivs. during manufacturing activities.

Table D-1. Activity and Number of Workers Reasonably Likely to be Exposed

Activity	Number of workers per line per shift	Number of shifts per day	Total number of workers for two production lines
Operate and monitor manufacturing process, including equipment cleaning and sampling	3	3	18
Lab technician analyzing sample*	1	1	1
Package product*	1	3	3
Maintenance*	1	3	3
Engineering staff*	1	1	1
Total			26

*The same staff support both production lines for these activities.

Determining the Reporting Requirements:

Step I: Benzene, mono-C14-16-alkyl derivs. is listed in the TSCA Inventory. Persons manufacturing this chemical do not qualify for an exemption from reporting under the IUR regulation because the chemical is not a polymer, microorganism, naturally-occurring substance, or one of certain forms of natural gas. (See 40 CFR 710.46(a))

- Step II:** Company D manufactured 25,000 pounds or more of benzene, mono-C14-16-alkyl derivs. during calendar year 2005 and does not qualify as a small manufacturer under 40 CFR 710.49 because Company D manufactured 100,000 lbs or more of the chemical and had revenues of \$4 million or more. Company D does not qualify for any of the exemptions from reporting of this chemical substance listed in 40 CFR 710.50 because this chemical was not imported as part of an article, nor was it used solely for research and development, nor was it manufactured in a manner described in 40 CFR 720.30(g) or (h).
- Step III:** Company D manufactured 300,000 pounds or more of benzene, mono-C14-16-alkyl derivs. during calendar year 2005. Benzene, mono-C14-16-alkyl derivs. is listed as a specific exempted chemical substance in 40 CFR 710.46(b)(2)(iv) and is not the subject of any of certain actions under TSCA listed in the initial paragraph of 40 CFR 710.46.
- Result:** Company D should complete and submit Parts I and II of Form U with respect to its production of benzene, mono-C14-16-alkyl derivs. Company D is not required to complete Part III of Form U because this chemical substance is partially exempt from the reporting requirements.

Completing Form U:

Because Part I is completed in the same manner as in a previous case study, it is omitted here.

Part II: Section A. Chemical Identification

SECTION A. CHEMICAL IDENTIFICATION				CBI*	
2.A.1	Chemical Identifying Number	129813-60-1	2.A.2	ID Code	C
2.A.3	Chemical Name	Benzene, Mono-C14-16-Alkyl Derivs			

Basis/Rationale:

2.A.1 - The CAS number for benzene, mono-C14-16-alkyl derivs.

2.A.2 - Code for CAS Number.

2.A.3 - Chemical Abstracts (CA) Index/Preferred name.

Completing Form U: (Continued)**Part II: Section B. Manufacturing Information**

SECTION B. MANUFACTURING INFORMATION									
				CBI			a. Physical Form		b. Percent of Production Volume in Each Physical Form
2.B.1	Company Information								
2.B.2	Site Information [†]								
2.B.3	Technical Contact Information						Check All That Apply	CBI	Percent
2.B.4	Site Limited (Y/N)	N			2.B.10	Dry Powder			
2.B.5	Activity (Check all that apply)	☒ Manufacture ☐ Import			2.B.11	Pellets or Large Crystals			
2.B.6	Manufactured Production Volume (LB)	5,000,000			2.B.12	Water or Solvent Wet Solid			
2.B.7	Imported Production Volume (LB)	0			2.B.13	Other Solid			
2.B.8	Number of Workers (code)	W3			2.B.14	Gas or Vapor			
2.B.9	Maximum Concentration (code)	M5			2.B.15	Liquid	X		100

Basis/Rationale:

- 2.B.4** - Benzene, mono-C14-16-alkyl derivs. is shipped off-site; therefore, it is not site limited.
- 2.B.5** - All of the Benzene, mono-C14-16-alkyl derivs. is manufactured domestically; it is not imported.
- 2.B.6** - Company D produced 5 million pounds of benzene, mono-C14-16-alkyl derivs. (Company D should not report the amount of solution produced).
- 2.B.8** - W3 - At least 25 but less than 50. Company D estimates 26 workers are reasonably likely to be exposed to the chemical substance during manufacturing; see Table D-1.
- 2.B.9** - M5 - Greater than 90% by weight. The maximum concentration leaving the site is 95%.
- 2.B.15** - 100% of the chemical leaves the manufacturing site as a liquid.

Completing Form U: (Continued)**Part III: Processing and Use Information**

SECTION A. INDUSTRIAL PROCESSING AND USE DATA									N/A		X	
	a. Type of Process or Use		b. (5-digit) NAICS Code		c. Industrial Function Category		d. Percent Production Volume		e. Number of Sites		f. Number of Workers	
	Code	CBI	Code	CBI	Code	CBI	Percent	CBI	Code	CBI	Code	CBI
3.A.1												
3.A.2												

SECTION B. COMMERCIAL AND CONSUMER USE DATA							N/A		X	
	a. Commercial and Consumer Product Category		b. Used in Products Intended for Children		c. Percent Production Volume associated with each category		d. Maximum Concentration associated with each category			
	Code	CBI	Y/N/NRO	CBI	Percent	CBI	Code	CBI		
3.B.1										
3.B.2										

Basis/Rationale:

- Benzene, mono-C14-16-alkyl derivs. is partially exempt from IUR because it is listed in 40 CFR 710.46(b)(2)(iv) and is not the subject of any of certain actions under TSCA listed in the initial paragraph of 40 CFR 710.46; therefore, Company D would check the two “N/A” boxes in the upper, right hand corner of Sections A and B of Part III to indicate that these sections are not applicable.

Form U – Case Study D

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PART II. MANUFACTURING INFORMATION

SECTION A. CHEMICAL IDENTIFICATION				CBI*	
2.A.1	Chemical Identifying Number	129813-60-1	2.A.2	ID Code	C
2.A.3	Chemical Name	Benzene, Mono-C14-16-Alkyl Derivs.			

SECTION B. MANUFACTURING INFORMATION										
				CBI			a. Physical Form		b. Percent of Production Volume in Each Physical Form	
2.B.1	Company Information									
2.B.2	Site Information†									
2.B.3	Technical Contact Information						Check All That Apply	CBI	Percent	CBI
2.B.4	Site Limited (Y/N)	N			2.B.10	Dry Powder				
2.B.5	Activity (Check all that apply)	☒ Manufacture ☐ Import			2.B.11	Pellets or Large Crystals				
2.B.6	Manufactured Production Volume (LB)	5,000,000			2.B.12	Water or Solvent Wet Solid				
2.B.7	Imported Production Volume (LB)	0			2.B.13	Other Solid				
2.B.8	Number of Workers (code)	W3			2.B.14	Gas or Vapor				
2.B.9	Maximum Concentration (code)	M5			2.B.15	Liquid	X		100	

PART III. PROCESSING AND USE INFORMATION

Complete Part III, Sections A and B if the sum of the production volumes noted in Blocks 2.B.6 and 2.B.7 is 300,000 pounds or more.

SECTION A. INDUSTRIAL PROCESSING AND USE DATA								N/A		X		
a. Type of Process or Use		b. (5-digit) NAICS Code		c. Industrial Function Category		d. Percent Production Volume		e. Number of Sites		f. Number of Workers		
	Code	CBI	Code	CBI	Code	CBI	Percent	CBI	Code	CBI	Code	CBI
3.A.1												
3.A.2												
3.A.3												
3.A.4												
3.A.5												
3.A.6												
3.A.7												
3.A.8												
3.A.9												
3.A.10												

SECTION B. COMMERCIAL AND CONSUMER USE DATA						N/A		X	
a. Commercial and Consumer Product Category		b. Used in Products Intended for Children		c. Percent Production Volume associated with each category		d. Maximum Concentration associated with each category			
	Code	CBI	Y/N/NRO	CBI	Percent	CBI	Code	CBI	
3.B.1									
3.B.2									
3.B.3									
3.B.4									
3.B.5									
3.B.6									
3.B.7									
3.B.8									
3.B.9									
3.B.10									

†Substantiation required for CBI claims on chemical identity and site information..

Case Study E - Reporting a Chemical Produced at and Imported by the Same Site

Scenario:

Company E both produces and imports sodium hydroxide (NaOH, CAS # 1310-73-2) as an aqueous solution which it sells for laboratory and industrial uses. Company E produced 8,000,000 pounds of a 48% sodium hydroxide solution at its Delaware site during calendar year 2005; the Delaware site also arranged for the import, completed and signed all of the necessary forms for the import transaction, paid the import duties, and received from a foreign source an additional 2,000,000 pounds of the 48% sodium hydroxide solution during calendar year 2005. Company E had total annual sales in excess of \$4 million in calendar year 2005.

The sodium hydroxide solution produced by Company E is transferred directly to a holding tank where it combined with the imported sodium hydroxide solution for subsequent operations. Company E uses 4,000,000 pounds per year of the 48% NaOH solution for the production of a 72% solution. Company E uses 600,000 pounds of the 48% NaOH solution for the production of solid crystals at greater than 99% concentration. The remaining 5,400,000 pounds of aqueous sodium hydroxide solution is packaged and sold. All of the sodium hydroxide is sold to customers and none of the chemical is used at the manufacturing site.

Company E's Delaware site operates 24 hours/day throughout the year. Four shifts of workers support Company E's manufacturing operations. Company E estimated that two equipment operators on each shift are reasonably likely to be exposed to sodium hydroxide. In addition, one engineer and one maintenance technician are assigned to the sodium hydroxide production facility and are reasonably likely to be exposed to sodium hydroxide.

Because EPA cannot ensure that protective equipment will be available to all employees and, if available, will be used in a well managed hygiene program, the potential risk encountered in the manufacturing, processing, or use of a chemical substance is initially assessed by EPA in the absence of PPE information.

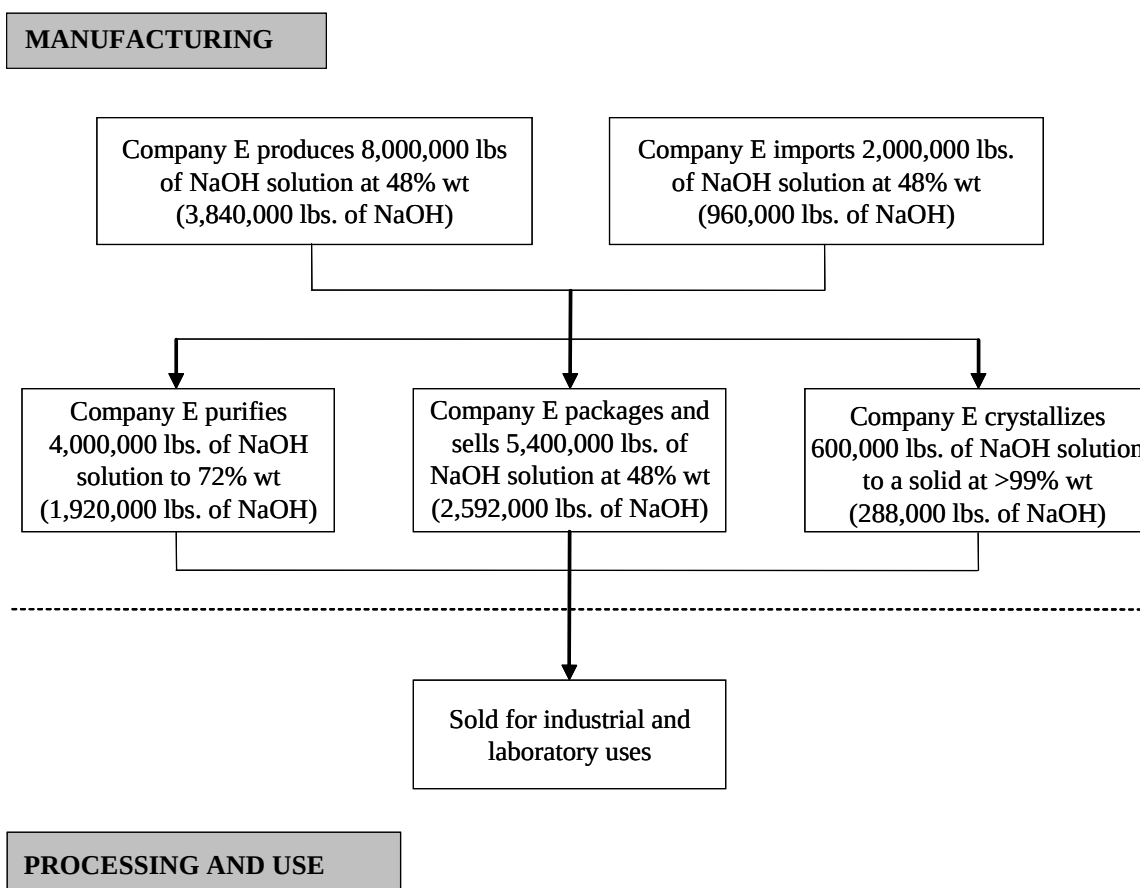
Determining the Reporting Requirements

- Step I: Sodium hydroxide is listed in the TSCA Inventory. Persons manufacturing NaOH do not qualify for an exemption from reporting under the IUR regulation because NaOH is not a polymer, microorganism, naturally occurring substance, or one of certain forms of natural gas. (See 40 CFR 710.46(a))
- Step II: Company E manufactured (including imported) 25,000 pounds or more of NaOH and does not qualify as a small manufacturer under 40 CFR 710.49 because it manufactured 100,000 lbs or more of NaOH and had sales of \$4 million or more in 2005. Company E does not qualify for any of the additional reporting exemptions listed in 40 CFR 710.50 with respect to sodium hydroxide because this chemical was not imported as part of an article, nor was it used solely for research and development, nor was it otherwise manufactured in a manner described in 40 CFR 720.30(g) or (h).

Step III: Company E manufactured (including imported) 300,000 pounds or more of NaOH during calendar year 2005. NaOH is an inorganic chemical substance. During the 2006 submission period, manufacturers are exempted from the reporting requirements under 40 CFR 710.52(c)(4) with respect to inorganic chemical substances which are not the subject of any of certain actions under TSCA listed in the first paragraph of 40 CFR 710.46 (See 40 CFR 710.46(b)(3)). Manufacturers of NaOH qualify for this exclusion.

Result: Company E should report the IUR information identified on Parts I and II of Form U providing the company and site information and describing the manufacture of sodium hydroxide but is not required to provide information on the processing and use of sodium hydroxide identified on Part III of Form U. Note: the partial exemption from reporting for inorganic chemical substances applies only to the 2006 submission period.

Case Study E - Flow Diagram



Completing Form U:

Because Part I is completed in the same manner as in a previous case study, it is omitted here.

Part II: Section A. Chemical Identification

SECTION A. CHEMICAL IDENTIFICATION				CBI*	
2.A.1	Chemical Identifying Number	1310-73-2	2.A.2	ID Code	C
2.A.3	Chemical Name	Sodium hydroxide			

Basis/Rationale:

2.A.1 - The CAS number for sodium hydroxide.

2.A.2 - Code for CAS Number.

2.A.3 - Chemical Abstracts (CA) Index/Preferred name.

Part II: Section B. Manufacturing Information

SECTION B. MANUFACTURING INFORMATION									
				CBI			a. Physical Form		b. Percent of Production Volume in Each Physical Form
2.B.1	Company Information								
2.B.2	Site Information [†]								
2.B.3	Technical Contact InformationN						Check All That Apply	CBI	Percent CBI
2.B.4	Site Limited (Y/N)	N			2.B.10	Dry Powder			
2.B.5	Activity (Check all that apply)	☒ Manufacture ☒ Import			2.B.11	Pellets or Large Crystals	X		10
2.B.6	Manufactured Production Volume (LB)	3,840,000			2.B.12	Water or Solvent Wet Solid			
2.B.7	Imported Production Volume (LB)	960,000			2.B.13	Other Solid			
2.B.8	Number of Workers (code)	W2			2.B.14	Gas or Vapor			
2.B.9	Maximum Concentration (code)	M5			2.B.15	Liquid	X		90

Basis/Rationale:

2.B.4 - Sodium hydroxide is both imported and shipped off-site; therefore, it is not site limited.

2.B.5 - Sodium hydroxide is both produced domestically and imported.

2.B.6 - Company E produced 3,840,000 pounds of sodium hydroxide during calendar year 2005. Company E should not report the amount of solution produced.

2.B.7 - Company E imported 960,000 pounds of sodium hydroxide.

Because Company E manufactured and shipped off-site solid NaOH at greater than 90% concentration, the code M5 should be reported, even though this concentration only accounts for 6% of the production volume.

Completing Form U: (Continued)

- 2.B.8** - W2 - At least 10 but fewer than 25. Company E estimates 10 workers are reasonably likely to be exposed to NaOH during the manufacturing process: 2 equipment operators/shift x 4 shifts + 1 engineer + 1 maintenance technician = 10 workers.
- 2.B.9** - M5 - Greater than 90% by weight. NaOH crystals are sent off-site at greater than 99% concentration.
- 2.B.11** - $288,000 \text{ lbs} \div 4,800,000 \text{ total lbs} = 6\%$ of the NaOH is sent off-site in the form of crystals. Round to 10%.
- 2.B.15** - $4,512,000 \text{ lbs} \div 4,800,000 \text{ lbs} = 94\%$ of the sodium hydroxide is sent off-site in the form of a liquid solution. Round to 90%.

Part III: Processing and Use Information

SECTION A. INDUSTRIAL PROCESSING AND USE DATA									N/A		X	
	a. Type of Process or Use		b. (5-digit) NAICS Code		c. Industrial Function Category		d. Percent Production Volume		e. Number of Sites		f. Number of Workers	
	Code	CBI	Code	CBI	Code	CBI	Percent	CBI	Code	CBI	Code	CBI
3.A.1												
3.A.2												

SECTION B. COMMERCIAL AND CONSUMER USE DATA							N/A		X	
	a. Commercial and Consumer Product Category		b. Used in Products Intended for Children		c. Percent Production Volume associated with each category		d. Maximum Concentration associated with each category			
	Code	CBI	Y/N/NRO	CBI	Percent	CBI	Code	CBI		
3.B.1										
3.B.2										

Basis/Rationale:

- Sodium hydroxide is an inorganic substance. For the 2006 reporting year, manufacturers of inorganic substances are exempted from the requirement to report processing and use information unless the substance is the subject of any of certain actions under TSCA listed in the first paragraph of 40 CFR 710.46. Sodium hydroxide is not the subject of any action listed in the initial paragraph of 40 CFR 710.46 so only Parts I and II should be completed and submitted; therefore Company E would check the two “N/A” boxes in the upper, right-hand corners of Sections A and B of Part III to indicate that these sections are not applicable.

Form U – Case Study E

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PART II. MANUFACTURING INFORMATION

SECTION A. CHEMICAL IDENTIFICATION					CBI*		
2.A.1	Chemical Identifying Number	1310-73-2			2.A.2	ID Code	C
2.A.3	Chemical Name	Sodium hydroxide					

SECTION B. MANUFACTURING INFORMATION										
				CBI			a. Physical Form		b. Percent of Production Volume in Each Physical Form	
2.B.1	Company Information									
2.B.2	Site Information†									
2.B.3	Technical Contact Information						Check All That Apply	CBI	Percent	CBI
2.B.4	Site Limited (Y/N)	N			2.B.10	Dry Powder				
2.B.5	Activity (Check all that apply)	☒ Manufacture ☒ Import			2.B.11	Pellets or Large Crystals	X		10	
2.B.6	Manufactured Production Volume (LB)	3,840,000			2.B.12	Water or Solvent Wet Solid				
2.B.7	Imported Production Volume (LB)	960,000			2.B.13	Other Solid				
2.B.8	Number of Workers (code)	W2			2.B.14	Gas or Vapor				
2.B.9	Maximum Concentration (code)	M5			2.B.15	Liquid	X		90	

PART III. PROCESSING AND USE INFORMATION

Complete Part III, Sections A and B if the sum of the production volumes noted in Blocks 2.B.6 and 2.B.7 is 300,000 pounds or more.

SECTION A. INDUSTRIAL PROCESSING AND USE DATA									N/A		X	
	a. Type of Process or Use		b. (5-digit) NAICS Code		c. Industrial Function Category		d. Percent Production Volume		e. Number of Sites		f. Number of Workers	
	Code	CBI	Code	CBI	Code	CBI	Percent	CBI	Code	CBI	Code	CBI
3.A.1												
3.A.2												
3.A.3												
3.A.4												
3.A.5												
3.A.6												
3.A.7												
3.A.8												
3.A.9												
3.A.10												

SECTION B. COMMERCIAL AND CONSUMER USE DATA							N/A		X	
	a. Commercial and Consumer Product Category		b. Used in Products Intended for Children		c. Percent Production Volume associated with each category		d. Maximum Concentration associated with each category			
	Code	CBI	Y/N/NRO	CBI	Percent	CBI	Code	CBI		
3.B.1										
3.B.2										
3.B.3										
3.B.4										
3.B.5										
3.B.6										
3.B.7										
3.B.8										
3.B.9										
3.B.10										

†Substantiation required for CBI claims on chemical identity and site information.

Case Study F - Reporting a Hydrated Substance

Scenario:

Company F produces 800,000 lbs/yr of copper (II) sulfate pentahydrate ($\text{CuSO}_4 \cdot 5\text{H}_2\text{O}$) crystals of 100% purity at a site in Ohio which it sells to ten companies for metal electroplating. The manufacturing site employs 20 workers, and all of whom are reasonably likely to be exposed to copper sulfate pentahydrate. The sales of Company F exceeded four million dollars in 2005.

Determining the Reporting Requirements

Step I: Copper (II) sulfate pentahydrate is a hydrate and, as such, is not listed in the TSCA Inventory. However, copper (II) sulfate is listed in the TSCA Inventory and is not exempted from IUR requirements. Persons manufacturing copper sulfate do not qualify for an exemption from reporting because copper sulfate is not a polymer, microorganism, naturally-occurring substance, or one of certain forms of natural gas.

This material is a hydrate, therefore only the weight fraction of anhydrous copper sulfate (CuSO_4) (CAS# 7758-98-7) should be reported. To determine the anhydrous production volume, multiply the production volume of the copper sulfate pentahydrate by the molecular weight ratio of copper sulfate (CuSO_4) to copper sulfate pentahydrate ($\text{CuSO}_4 \cdot 5\text{H}_2\text{O}$).

Calculation:

$$\frac{800,000 \text{ lbs } \text{CuSO}_4 \cdot 5\text{H}_2\text{O}}{\text{yr}} \times \frac{159.6 \text{ lbs/lb} \cdot \text{mole } \text{CuSO}_4}{249.7 \text{ lbs/lb} \cdot \text{mole } \text{CuSO}_4 \cdot 5\text{H}_2\text{O}} = \frac{511,334 \text{ lbs } \text{CuSO}_4}{\text{yr}}$$

(See 40 CFR 710.46(a))

Before evaluating Step II and III, Company F should compute the anhydrous production volume.

Step II: Company F manufactures 25,000 pounds or more of anhydrous copper (II) sulfate (not copper sulfate pentahydrate) and does not qualify as a small manufacturer because the amount of copper(II) sulfate produced is 100,000 lbs or more and the total sales of Company F are \$4 million or more (40 CFR 710.49). Company F does not qualify for any of the exemptions from reporting for copper (II) sulfate found in 40 CFR 710.50, including the exemptions for a non-isolated intermediate or for chemicals used solely for research and development.

Step III: Company F manufactures 300,000 pounds or more of anhydrous copper (II) sulfate, an inorganic chemical substance. During the 2006 submission period, manufacturers are excluded from the reporting requirements under 40 CFR 710.52(c)(4) for inorganic chemical substances if the substance is not subject of any of certain actions under TSCA listed in the first paragraph of 40 CFR 710.46 (See 40 CFR 710.46(b)(3)). Manufacturers of copper (II) sulfate qualify for this exclusion.

Result: Company F should complete and submit Parts I and II of Form U for copper (II) sulfate and is not required to complete Part III. Please note that the partial exemption for inorganic substances applies only for the 2006 submission period.

Completing Form U:

Part II: Section A. Chemical Identification

SECTION A. CHEMICAL IDENTIFICATION				CBI*	
2.A.1	Chemical Identifying Number	7758-98-7	2.A.2	ID Code	C
2.A.3	Chemical Name	Sulfuric acid copper (2+) salt (1:1)			

Basis/Rationale:

2.A.1 - CAS number for copper (II) sulfate.

2.A.2 - Code for CAS Number.

2.A.3 - Chemical Abstracts (CA) Index/Preferred name for copper sulfate.

Part II: Section B. Manufacturing Information

SECTION B. MANUFACTURING INFORMATION									
				CBI			a. Physical Form		b. Percent of Production Volume in Each Physical Form
2.B.1	Company Information								
2.B.2	Site Information [†]								
2.B.3	Technical Contact Information						Check All That Apply	CBI	Percent CBI
2.B.4	Site Limited (Y/N)	N			2.B.10	Dry Powder			
2.B.5	Activity (Check all that apply)	☒ Manufacture			2.B.11	Pellets or Large Crystals	X		100
		☐ Import							
2.B.6	Manufactured Production Volume (LB)	511,334			2.B.12	Water or Solvent Wet Solid			
2.B.7	Imported Production Volume (LB)	0			2.B.13	Other Solid			
2.B.8	Number of Workers (code)	W2			2.B.14	Gas or Vapor			
2.B.9	Maximum Concentration (code)	M4			2.B.15	Liquid			

Basis/Rationale:

2.B.4 - Copper sulfate is shipped off-site; therefore, it is not site limited.

2.B.5 - Copper sulfate is produced domestically.

2.B.6 - Company F manufactures a total of 511,334 pounds of anhydrous copper sulfate.

2.B.8 - W2 - At least 10 but less than 25. Company F estimates 20 workers are reasonably likely to be exposed during manufacture of the chemical substance.

2.B.9 - M4 - From 61% to 90% by weight. The maximum concentration leaving the site is 63.9%. See calculation in the box below.

2.B.11 - All of the copper sulfate is produced as large crystals.

Completing Form U: (Continued)

To determine the maximum concentration of copper sulfate leaving the manufacturing site, calculate the weight percent of anhydrous copper sulfate (not copper sulfate pentahydrate) in the product. Remember, hydrates are defined as ‘mixtures’ under TSCA, therefore you should think of a copper sulfate pentahydrate as being a mixture of copper sulfate and water.

$$\frac{357,934 \text{ lbs CuSO}_4}{560,000 \text{ lbs CuSO}_4 \cdot 5 \text{ H}_2\text{O}} = 63.9\% \text{ by weight}$$

Part III: Processing and Use Information

SECTION A. INDUSTRIAL PROCESSING AND USE DATA									N/A		X	
	a. Type of Process or Use		b. (5-digit) NAICS Code		c. Industrial Function Category		d. Percent Production Volume		e. Number of Sites		f. Number of Workers	
	Code	CBI	Code	CBI	Code	CBI	Percent	CBI	Code	CBI	Code	CBI
3.A.1												
3.A.2												

SECTION B. COMMERCIAL AND CONSUMER USE DATA							N/A		X	
	a. Commercial and Consumer Product Category		b. Used in Products Intended for Children		c. Percent Production Volume associated with each category		d. Maximum Concentration associated with each category			
	Code	CBI	Y/N/NRO	CBI	Percent	CBI	Code	CBI		
3.B.1										
3.B.2										

Basis/Rationale:

- Copper sulfate is an inorganic substance. For the 2006 reporting year, manufacturers of inorganic chemical substances are exempted from the requirement to report processing and use information for these substances unless the substance is the subject of any of certain actions under TSCA listed in the initial paragraph of 40 CFR 710.46. Copper sulfate is not the subject of any of the actions listed in 40 CFR 710.46 so only Parts I and II should be completed; therefore check the “N/A” boxes in the upper, right-hand corners of Sections A and B of Part III.

Form U – Case Study F

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PART II. MANUFACTURING INFORMATION

SECTION A. CHEMICAL IDENTIFICATION				CBI*	
2.A.1	Chemical Identifying Number	7758-98-7	2.A.2	ID Code	C
2.A.3	Chemical Name	Sulfuric acid copper (2+) salt (1:1)			

SECTION B. MANUFACTURING INFORMATION									
			CBI			a. Physical Form		b. Percent of Production Volume in Each Physical Form	
2.B.1	Company Information								
2.B.2	Site Information†								
2.B.3	Technical Contact Information					Check All That Apply	CBI	Percent	CBI
2.B.4	Site Limited (Y/N)	N		2.B.10	Dry Powder				
2.B.5	Activity (Check all that apply)	☒ Manufacture ☐ Import		2.B.11	Pellets or Large Crystals	X		100	
2.B.6	Manufactured Production Volume (LB)	511,334		2.B.12	Water or Solvent Wet Solid				
2.B.7	Imported Production Volume (LB)	0		2.B.13	Other Solid				
2.B.8	Number of Workers (code)	W2		2.B.14	Gas or Vapor				
2.B.9	Maximum Concentration (code)	M4		2.B.15	Liquid				

PART III. PROCESSING AND USE INFORMATION

Complete Part III, Sections A and B if the sum of the production volumes noted in Blocks 2.B.6 and 2.B.7 is 300,000 pounds or more.

SECTION A. INDUSTRIAL PROCESSING AND USE DATA									N/A		X	
	a. Type of Process or Use		b. (5-digit) NAICS Code		c. Industrial Function Category		d. Percent Production Volume		e. Number of Sites		f. Number of Workers	
	Code	CBI	Code	CBI	Code	CBI	Percent	CBI	Code	CBI	Code	CBI
3.A.1												
3.A.2												
3.A.3												
3.A.4												
3.A.5												
3.A.6												
3.A.7												
3.A.8												
3.A.9												
3.A.10												

SECTION B. COMMERCIAL AND CONSUMER USE DATA						N/A		X	
	a. Commercial and Consumer Product Category		b. Used in Products Intended for Children		c. Percent Production Volume associated with each category		d. Maximum Concentration associated with each category		
	Code	CBI	Y/N/NRO	CBI	Percent	CBI	Code	CBI	
3.B.1									
3.B.2									
3.B.3									
3.B.4									
3.B.5									
3.B.6									
3.B.7									
3.B.8									
3.B.9									
3.B.10									

*Substantiation required for CBI claims on chemical identity and site information.

Case Study G - Reporting a Chemical Produced in Multiple Physical Forms

Scenario:

At a site in Rhode Island, Company G manufactured 800,000 lbs of C.I. Pigment Yellow 100 (CAS# 12225-21-7), an organic pigment, during calendar year 2005. The pigment is produced as a solid suspended in an organic liquid. Company G sold 500,000 lbs of C.I. Pigment Yellow 100 as a solid-liquid suspension at concentrations between 1% and 30% to approximately 50 paint formulators. Company G dried the remaining 300,000 lbs of C.I. Pigment Yellow 100 and sold it as a dry powder (100% concentration) to 6 sites that incorporate the pigment into plastic pellets at less than 1% concentration. The plastic pellets were molded into articles which were sold to consumers. Company G had sales in excess of \$4 million in 2005.

The paint formulators incorporate the solid-liquid suspension containing C.I. Pigment Yellow 100 into their products as a coloring agent. The maximum concentration of C.I. Pigment Yellow 100 in the formulated paints is 15%. Company G estimates that 80% of the paint (500,000 lbs/yr sold to paint formulators $\times$ 80% = 400,000 lbs of C.I. Pigment Yellow 100) is sold to consumers and the remaining 20% of the paint (500,000 lbs/yr sold to paint formulators $\times$ 20% = 100,000 lbs of C.I. Pigment Yellow 100) is sold to 15 to 20 wood toy manufacturers. The wood toys are then sold to consumers and are intended for use by children up to the age of 14.

Company G based its estimates for the number of downstream workers on its understanding of how its customers process and use C.I. Pigment Yellow 100.

Company G estimates 16 workers are reasonably likely to be exposed to C.I. Pigment Yellow 100 at the Rhode Island site during manufacturing operations, as shown in Table G-1. Based on its knowledge of downstream processing, Company G estimates 2 to 3 workers are reasonably likely to be exposed at each plastic pellet manufacturing site while handling and loading C.I. Pigment Yellow 100 into the hoppers and 3 to 6 workers are reasonably likely to be exposed at each paint formulation site while unloading solutions containing C.I. Pigment Yellow 100. Company G has determined that the number of workers reasonably likely to be exposed at the toy manufacturers is not readily obtainable.

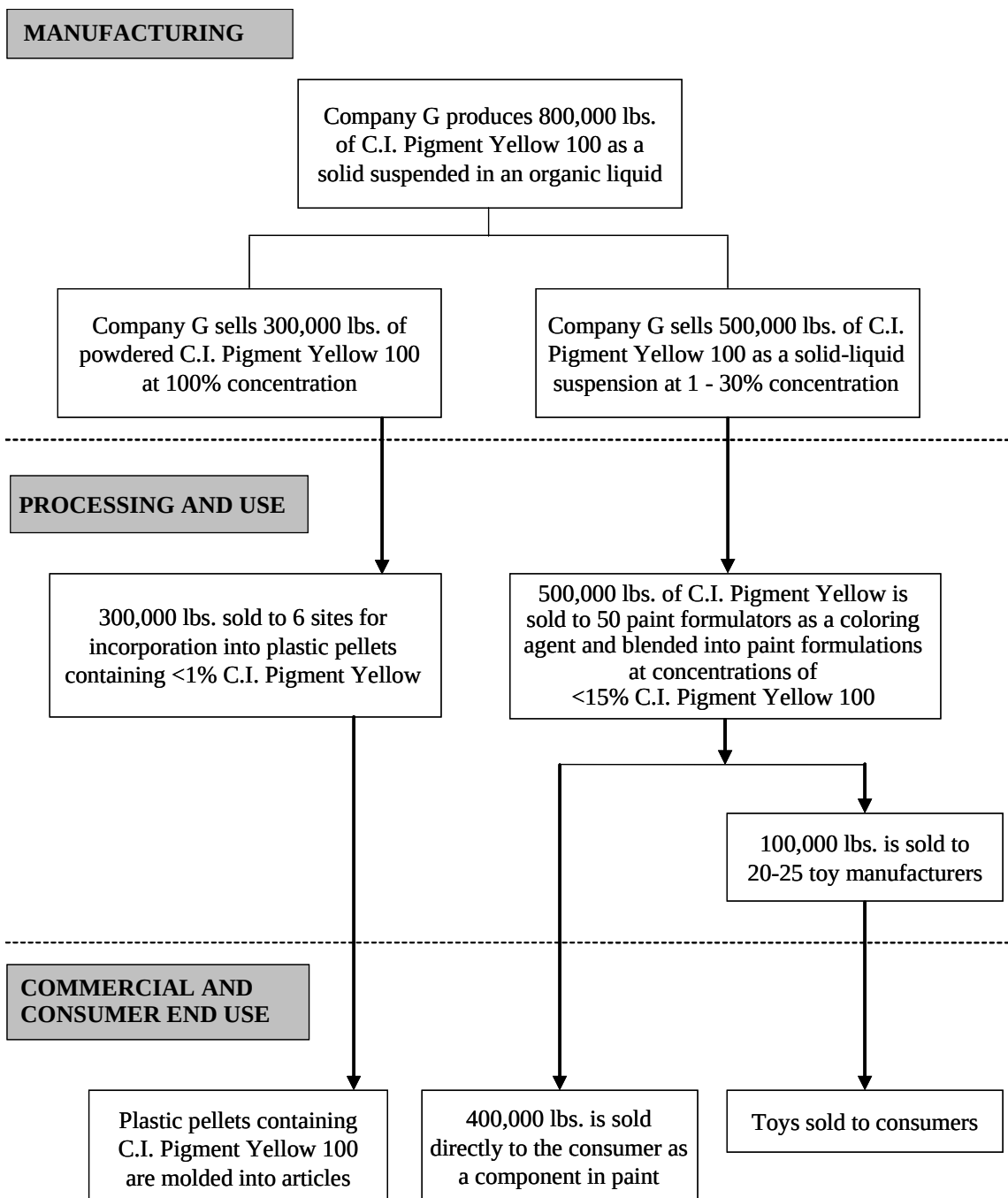
Table G-1. Number of Workers Reasonably Likely to be Exposed during Manufacturing

Activity	Number of Workers per Line per Shift	Number of Shifts per Day	Total Number of Workers
Operating and monitoring equipment	2	2	4
Sampling C.I. Pigment Yellow 100	1	2	2
Maintenance and equipment cleaning	1	1	1
Drumming C.I. Pigment Yellow 100 as a solid-liquid suspension	1	2	2
Operating and monitoring drying process	2	2	4
Drumming the powder form of C.I. Pigment Yellow 100	1	2	2
Engineering staff	1	1	1
Total			16

Determining the Reporting Requirements:

- Step I: C.I. Pigment Yellow 100 is listed in the TSCA Inventory. Persons manufacturing C.I. Pigment Yellow do not qualify for an exemption from reporting because this chemical substance is not a polymer, microorganism, naturally-occurring substance, or one of certain forms of natural gas. (See 40 CFR 710.46(a))
- Step II: Company G manufactures 25,000 pounds or more of C.I. Pigment Yellow 100. Company G does not qualify for exclusion from reporting as a small manufacturer under 40 CFR 710.49 because it produced more than 100,000 lbs of C.I. Pigment Yellow 100 during calendar year 2005 and had sales of \$4 million or more. Company G does not qualify for any additional exemptions from reporting requirements listed in 40 CFR 710.50 with respect to C.I. Pigment Yellow 100 because this chemical was not imported as part of an article, nor was it used solely for research and development, nor was it manufactured in a manner described in 40 CFR 720.30(g) or (h).
- Step III: Company G manufactured 300,000 pounds or more of C.I. Pigment Yellow 100 during calendar year 2005. C.I. Pigment Yellow 100 does not qualify for a partial exemption from reporting requirements under 40 CFR 710.46(b) because it is not a chemical substance termed a petroleum process stream, a specific exempted chemical substance, or an inorganic chemical substance.
- Result: Company G should complete and submit Parts I, II, and III of Form U for C.I. Pigment Yellow 100.

Case Study G Flow Diagram



Completing Form U:

Because Part I is completed in the same manner as in a previous case study, it is omitted here.

Part II: Section A. Chemical Identification

SECTION A. CHEMICAL IDENTIFICATION				CBI*	
2.A.1	Chemical Identifying Number	12225-21-7	2.A.2	ID Code	C
2.A.3	Chemical Name	C. I. Pigment Yellow 100			

Basis/Rationale:

2.A.1- The CAS number for C. I. Pigment Yellow 100.

2.A.2 - Code for CAS Number.

2.A.3 - Chemical Abstracts (CA) Index/Preferred name.

Part II: Section B. Manufacturing Information

SECTION B. MANUFACTURING INFORMATION									
			CBI			a. Physical Form		b. Percent of Production Volume in Each Physical Form	
2.B.1	Company Information								
2.B.2	Site Information [†]								
2.B.3	Technical Contact Information					Check All That Apply	CBI	Percent	CBI
2.B.4	Site Limited (Y/N)	N		2.B.10	Dry Powder	X		40	
2.B.5	Activity (Check all that apply)	☒ Manufacture ☐ Import		2.B.11	Pellets or Large Crystals				
2.B.6	Manufactured Production Volume (LB)	800,000		2.B.12	Water or Solvent Wet Solid	X		60	
2.B.7	Imported Production Volume (LB)	0		2.B.13	Other Solid				
2.B.8	Number of Workers (code)	W2		2.B.14	Gas or Vapor				
2.B.9	Maximum Concentration (code)	M5		2.B.15	Liquid				

Basis/Rationale:

2.B.4 - C. I. Pigment Yellow 100 is shipped off-site; therefore, it is not site limited.

2.B.5 - C. I. Pigment Yellow 100 is produced domestically. It is not imported.

2.B.6 - The amount of C. I. Pigment Yellow 100 manufactured by Company G.

2.B.8 - W2 - At least 10 but less than 25. Company G estimates 16 workers are reasonably likely to be exposed to C.I. Pigment 100 at the Rhode Island manufacturing site; see Table G-1 for more details.

2.B.9 - M5 - Greater than 90% by weight. The maximum concentration leaving the site is 100%.

2.B.10 - 300,000 of the total 800,000 lbs (37.5%) of the product is produced as a dry powder. Round up to 40%.

2.B.12 - 500,000 of the total 800,000 lbs (62.5%) of the product is produced as a solid-liquid suspension. Round down to 60%

Completing Form U: (Continued)**Part III: Section A. Industrial Processing and Use Data**

SECTION A. INDUSTRIAL PROCESSING AND USE DATA									N/A			
	a. Type of Process or Use		b. (5-digit) NAICS Code		c. Industrial Function Category		d. Percent Production Volume		e. Number of Sites		f. Number of Workers	
	Code	CBI	Code	CBI	Code	CBI	Percent	CBI	Code	CBI	Code	CBI
3.A.1	PF		32619		U08		40		S1		W2	
3.A.2	PF		32551		U08		60		S3		W5	
3.A.3	PA		33993		U08		10		S2		NRO	
3.A.4												
3.A.5												

Basis/Rationale:

3.A.1 - This accounts for the 300,000 lbs of powdered C.I. Pigment Yellow 100 incorporated into plastic pellets.

- PF - Processing; incorporation into formulation, mixture, or reaction product.
- 32619 - Other Plastic Products Manufacturing.
- U08 - Coloring agents, pigments.
- 40% - 300,000 lbs of the total 800,000 lbs (38%) is sold for this use. Round up to 40%.
- S1 - Less than 10 sites. Company G sells C.I. Pigment Yellow to 6 customer sites for this use.
- W2 - At least 10 but less than 25. Company G estimates between 2 and 3 workers are reasonably likely to be exposed at each site where plastic pellets are produced. 2 to 3 workers/site x 6 sites = 12 to 18 workers.

3.A.2 - This accounts for the 500,000 lbs of solid-liquid suspension containing C.I. Pigment Yellow 100 incorporated into paint products.

- PF - Processing; incorporation into formulation, mixture, or reaction product.
- 32551 - Paint and Coating Manufacturing.
- U08 - Coloring agents, pigments.
- 60% - 500,000 lbs of the 800,000 total lbs (63%) is used for this use. Round down to 60%.
- S3 - At least 25 but less than 100 sites. Company G estimates 50 paint manufacturers use their product.
- W5 - At least 100 but less than 500. Company G estimates between 3 and 6 workers are exposed per site. 3 to 6 workers/site x 50 sites = 150 to 300 workers.

Completing Form U: (Continued)

- 3.A.3** - This accounts for the 100,000 lbs of pigment in paint products sold to wood toy manufacturers.
- PA - Processing; incorporation into an article.
 - 33993 - Doll, Toy, and Game Manufacturing.
 - U08 - Coloring agents, pigments.
 - 10% - 100,000 lbs of the total 800,000 lbs (13%) is used for this use. Round down to 10%.
 - S2 – At least 10 but less than 25. Company G estimates 15-20 toy manufacturers use paint formulations containing C.I. Pigment Yellow 100 on their products.
 - NRO - Company G has determined this information is not readily obtainable.

Part III: Section B. Commercial and Consumer End-Use Exposure Related Data

SECTION B. COMMERCIAL AND CONSUMER USE DATA						N/A	
a. Commercial and Consumer Product Category		b. Used in Products Intended for Children		c. Percent Production Volume associated with each category		d. Maximum Concentration associated with each category	
Code	CBI	Y/N/NRO	CBI	Percent	CBI	Code	CBI
3.B.1	C16		NRO	40		M1	
3.B.2	C12		N	50		M2	
3.B.3	C19		Y	10		M1	
3.B.4							
3.B.5							

Basis/Rationale:

- 3.B.1** - This accounts for the 300,000 lbs of C.I. Pigment Yellow 100 incorporated into plastic articles sold to consumers.
- C16 - Rubber and plastic products.
 - NRO – Company G cannot readily obtain information to know if these plastic products are intended for use by children.
 - 40% - 300,000 of the total 800,000 lbs (38%) are incorporated into plastic products. Round to 40%.
 - M1 - Less than 1% by weight. C.I. Pigment Yellow 100 is incorporated into plastics at less than 1% concentration.
- 3.B.2** - This accounts for the 400,000 lbs of C.I. Pigment Yellow 100 incorporated into paint sold directly to consumers.
- C12 - Paints and coatings.
 - N - Paints sold directly to consumers are not intended to be used by children.
 - 50% - 400,000 of the total 800,000 lbs (50%) are incorporated into paints sold directly to consumers.
 - M2 - From 1% to 30% by weight. The maximum concentration in paint formulations is 15%.

Completing Form U: (Continued)

- 3.B.3** - This accounts for the 100,000 lbs of C.I. Pigment Yellow 100 incorporated into paint sold to wood toy manufacturers and used to paint wooden toys.
- a. C19 - Wood and Wood Furniture.
 - b. Y - Toys are intended to be used by children.
 - c. 10% - 100,000 of the total 800,000 lbs (13%) are used in paint for wooden toys. Round to 10%.
 - d. M1 - Less than 1% by weight. The maximum concentration in paint formulations is 15%. However, Company G estimates the final concentration of C.I. Pigment Yellow 100 in the consumer article, i.e. toys, is less than 1%.

Form U – Case Study G

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PART II. MANUFACTURING INFORMATION

SECTION A. CHEMICAL IDENTIFICATION				CBI*	
2.A.1	Chemical Identifying Number	12225-21-7	2.A.2	ID Code	C
2.A.3	Chemical Name	C. I. Pigment Yellow 100			

SECTION B. MANUFACTURING INFORMATION

		CBI			a. Physical Form		b. Percent of Production Volume in Each Physical Form	
2.B.1	Company Information							
2.B.2	Site Information†							
2.B.3	Technical Contact Information				Check All That Apply	CBI	Percent	CBI
2.B.4	Site Limited (Y/N)	N	2.B.10	Dry Powder	X		40	
2.B.5	Activity (Check all that apply)	☒ Manufacture ☐ Import	2.B.11	Pellets or Large Crystals				
2.B.6	Manufactured Production Volume (LB)	800,000	2.B.12	Water or Solvent Wet Solid	X		60	
2.B.7	Imported Production Volume (LB)	0	2.B.13	Other Solid				
2.B.8	Number of Workers (code)	W2	2.B.14	Gas or Vapor				
2.B.9	Maximum Concentration (code)	M5	2.B.15	Liquid				

PART III. PROCESSING AND USE INFORMATION

Complete Part III, Sections A and B if the sum of the production volumes noted in Blocks 2.B.6 and 2.B.7 is 300,000 pounds or more.

SECTION A. INDUSTRIAL PROCESSING AND USE DATA									N/A			
	a. Type of Process or Use		b. (5-digit) NAICS Code		c. Industrial Function Category		d. Percent Production Volume		e. Number of Sites		f. Number of Workers	
	Code	CBI	Code	CBI	Code	CBI	Percent	CBI	Code	CBI	Code	CBI
3.A.1	PF		32619		U08		40		S1		W2	
3.A.2	PF		32551		U08		60		S3		W5	
3.A.3	PA		33993		U08		10		S2		NRO	
3.A.4												
3.A.5												
3.A.6												
3.A.7												
3.A.8												
3.A.9												
3.A.10												

SECTION B. COMMERCIAL AND CONSUMER USE DATA							N/A		X	
	a. Commercial and Consumer Product Category		b. Used in Products Intended for Children		c. Percent Production Volume associated with each category		d. Maximum Concentration associated with each category			
	Code	CBI	Y/N/NRO	CBI	Percent	CBI	Code	CBI		
3.B.1	C16		NRO		40		M1			
3.B.2	C12		N		50		M2			
3.B.3	C19		Y		10		M1			
3.B.4										
3.B.5										
3.B.6										
3.B.7										
3.B.8										
3.B.9										
3.B.10										

†Substantiation required for CBI claims on chemical identity and site information.

Case Study H - Reporting an Organic Fertilizer (Urea)

Scenario:

Company H manufactures and formulates fertilizers for the agriculture industry at a site in Nebraska. It manufactured 3,000,000 pounds of urea (CAS # 57-13-6) in solid form as large crystals and 2,000,000 pounds of urea in liquid solution during calendar year 2005 at concentrations up to 100 percent. Company H estimates 25 workers were reasonably likely to be exposed to urea during manufacturing operations. After manufacturing, the urea was stored on-site until blended into fertilizer formulations.

During this reporting year, Company H incorporated 3,000,000 pounds of solid urea into solid fertilizer formulations at concentrations up to 95 percent urea. The 2,000,000 lbs of liquid solutions containing urea were blended into liquid fertilizer formulations at concentrations up to 50 weight percent urea. Company H estimates 60 workers were reasonably likely to be exposed during formulating and packaging operations.

Company H sells 80% of the solid fertilizer formulations (2,400,000 pounds of urea) and all of the liquid fertilizer formulations (2,000,000 pounds of urea) to eight agricultural supply wholesalers who repackage the product and sell it for use in agricultural production. Based on Company H's knowledge of agricultural wholesalers, Company H estimates that up to 50 workers per site are reasonably likely to be exposed to urea while handling bags and packages containing the urea-based fertilizer. The remaining solid fertilizer formulations (600,000 pounds of urea) containing up to 30 percent urea are sold by Company H to about 50 retail lawn and garden stores for sale (without repackaging) to consumers for lawn and garden applications.

Company H had sales of in excess of \$4 million in 2005.

Determining the Reporting Requirements:

- Step I: Urea is listed in the TSCA Inventory. Persons manufacturing urea do not qualify for an exemption from IUR requirements because urea is not a polymer, microorganism, or one of certain forms of natural gas, and is not naturally-occurring when commercially manufactured by chemical synthesis. (See 40 CFR 710.46(a))
- Step II: Company H manufactured 25,000 pounds or more of urea during calendar year 2005. Company H does not qualify for an exemption from IUR requirements as a small manufacturer because Company H manufactured at least 100,000 lbs of urea and had sales of at least \$4 million. Company H does not qualify for any exemption found in 40 CFR 710.50 with respect to urea for chemicals contained in imported articles, used solely for research and development, or which are impurities, non-isolated intermediates, or byproducts which are not used for commercial purpose.

Step III: Company H manufactured 300,000 pounds or more of urea during calendar year 2005 and does not qualify for a partial exemption from reporting requirements under the IUR regulation given to persons who manufacture substances termed petroleum process streams, specific exempted chemical substances, and inorganic chemical substances. (See 40 CFR 710.46(b))

Result: Company H should complete and submit Parts I, II, and III of Form U for urea.

Completing Form U:

Because Part I is completed in the same manner as in a previous case study, it is omitted here.

Part II: Section A. Chemical Identification

SECTION A. CHEMICAL IDENTIFICATION				CBI*	
2.A.1	Chemical Identifying Number	57-13-6	2.A.2	ID Code	C
2.A.3	Chemical Name	Urea			

Basis/Rationale:

2.A.1 - The CAS number for urea.

2.A.2 - Code for CAS Number.

2.A.3 - Chemical Abstracts (CA) Index/Preferred name.

Part II: Section B. Manufacturing Information

SECTION B. MANUFACTURING INFORMATION									
			CBI			a. Physical Form		b. Percent of Production Volume in Each Physical Form	
2.B.1	Company Information								
2.B.2	Site Information†								
2.B.3	Technical Contact Information					Check All That Apply	CBI	Percent	CBI
2.B.4	Site Limited (Y/N)	N		2.B.10	Dry Powder				
2.B.5	Activity (Check all that apply)	☒ Manufacture ☐ Import		2.B.11	Pellets or Large Crystals	X		60	
2.B.6	Manufactured Production Volume (LB)	5,000,000		2.B.12	Water or Solvent Wet Solid				
2.B.7	Imported Production Volume (LB)	0		2.B.13	Other Solid				
2.B.8	Number of Workers (code)	W3		2.B.14	Gas or Vapor				
2.B.9	Maximum Concentration (code)	M5		2.B.15	Liquid	X		40	

Completing Form U: (Continued)Basis/Rationale:

- 2.B.4** - Urea is shipped off-site; therefore, it is not site limited.
2.B.5 - Urea is manufactured domestically. It is not imported.
2.B.6 - Company H manufactured 5 million pounds of urea.
2.B.8 - W3 - At least 25 but less than 50. Company H estimates 25 workers are reasonably likely to be exposed during the manufacturing process.
2.B.9 - M5 - Greater than 90% by weight. The maximum concentration leaving the site is 95%.
2.B.11 - 3,000,000 lbs solid urea produced ÷ 5,000,000 lbs total = 60%.
2.B.15 - 2,000,000 lbs liquid urea produced ÷ 5,000,000 lbs total = 40%.

Part III: Section A. Industrial Processing and Use Data

SECTION A. INDUSTRIAL PROCESSING AND USE DATA									N/A			
	a. Type of Process or Use		b. (5-digit) NAICS Code		c. Industrial Function Category		d. Percent Production Volume		e. Number of Sites		f. Number of Workers	
	Code	CBI	Code	CBI	Code	CBI	Percent	CBI	Code	CBI	Code	CBI
3.A.1	PF		32531		U04		100		S1		W4	
3.A.2	PK		42491		U04		90		S1		W5	
3.A.3												
3.A.4												
3.A.5												

Basis/Rationale:

- 3.A.1-** This represents the urea formulated into fertilizer at the Company H facility after manufacture.
- PF - Processing - incorporation into formulation or mixture.
 - 32531 - Fertilizer manufacturing.
 - U04 - Agricultural chemicals (nonpesticidal).
 - 100% - Company H formulates all of the urea it manufactures into fertilizer formulations.
 - S1 - Less than 10. The formulation operations occur only at Company H's facility.
 - W4 - At least 50 but less than 100. Company H estimates 60 workers are reasonably likely to be exposed at its site during formulating and packaging operations.
- 3.A.2-** This represents the urea sold to the 8 agricultural wholesalers.
- PK - Processing - repackaging.
 - 42491 - Farm Supplies Wholesalers.
 - U04 - Agricultural Chemicals (non-pesticidal)
 - 90% - Company H sells all of the liquid fertilizer formulations (2,000,000 lbs of urea) and 80% of the 3,000,000 lbs urea in solid fertilizer formulations to wholesalers. $(2,000,000 \text{ lbs} + (80\% \times 3,000,000 \text{ lbs})) \div 5,000,000 \text{ lbs total} = 88\%$. Round to 90%.
 - S1 - Less than 10. Company H sells to 8 agricultural wholesaler sites.
 - W5 - At least 100 but less than 500. Company H estimates up to 50 workers are reasonably likely to be exposed for each site. $50 \text{ workers/site} \times 8 \text{ sites} = \text{up to } 400 \text{ workers}$.

Completing Form U: (Continued)

For purposes of IUR, the last processing and use activity that must be reported for the fertilizer chemicals is the application of the fertilizer to land. You should not report the sale of food grown using fertilizers as part of the processing and use of the fertilizer chemicals.

Part III: Section B. Commercial and Consumer End-Use Exposure Related Data

SECTION B. COMMERCIAL AND CONSUMER USE DATA						N/A		
	a. Commercial and Consumer Product Category		b. Used in Products Intended for Children		c. Percent Production Volume associated with each category		d. Maximum Concentration associated with each category	
	Code	CBI	Y/N/NRO	CBI	Percent	CBI	Code	CBI
3.B.1	C02		N		90		M5	
3.B.2	C08		N		10		M2	
3.B.3								
3.B.4								
3.B.5								

Basis/Rationale:

3.B.1 - This represents the urea sold by agricultural supply wholesalers to farmers for agricultural application.

- a. C02 - Agricultural products (non-pesticidal).
- b. N - While children may be exposed to the fertilizer, it is not intended to be used by children age 14 or younger.
- c. 90% - Company H sells all of the liquid fertilizer formulations (2,000,000 lbs of urea) and 2,400,000 lbs of urea in solid formulations to agricultural suppliers who resell the fertilizer to agricultural producers. $4,400,000 \text{ lbs} / 5,000,000 \text{ lbs} = 88\%$; round to 90%.
- d. M5 - Greater than 90% by weight. The maximum concentration of the urea in the solid fertilizer formulations is 95% by weight.

3.B.2 - This represents the urea sold by retail garden stores to consumers for application to lawns and gardens.

- a. C08 - Lawn and garden products (non-pesticidal).
- b. N - While children may be exposed to lawn and garden products, these products are not intended for use by children up to the age of 14.
- c. 10%- Company H sells 600,000 lbs of solid urea in various formulations to retail lawn and garden stores. $600,000 \text{ lbs} / 5,000,000 \text{ lbs} = 12\%$; round to 10%.
- d. M2 - From 1 to 30% by weight. The maximum concentration of the urea in the formulations for lawn and garden applications is 30%.

Form U – Case Study H

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PART II. MANUFACTURING INFORMATION

SECTION A. CHEMICAL IDENTIFICATION				CBI*	
2.A.1	Chemical Identifying Number	57-13-6	2.A.2	ID Code	C
2.A.3	Chemical Name	Urea			

SECTION B. MANUFACTURING INFORMATION									
		CBI			a. Physical Form		b. Percent of Production Volume in Each Physical Form		
2.B.1	Company Information								
2.B.2	Site Information [†]								
2.B.3	Technical Contact Information				Check All That Apply	CBI	Percent	CBI	
2.B.4	Site Limited (Y/N)	N	2.B.10	Dry Powder					
2.B.5	Activity (Check all that apply)	☒ Manufacture ☐ Import	2.B.11	Pellets or Large Crystals	X		60		
2.B.6	Manufactured Production Volume (LB)	5,000,000	2.B.12	Water or Solvent Wet Solid					
2.B.7	Imported Production Volume (LB)	0	2.B.13	Other Solid					
2.B.8	Number of Workers (code)	W3	2.B.14	Gas or Vapor					
2.B.9	Maximum Concentration (code)	M5	2.B.15	Liquid	X		40		

PART III. PROCESSING AND USE INFORMATION

Complete Part III, Sections A and B if the sum of the production volumes noted in Blocks 2.B.6 and 2.B.7 is 300,000 pounds or more.

SECTION A. INDUSTRIAL PROCESSING AND USE DATA								N/A				
	a. Type of Process or Use		b. (5-digit) NAICS Code		c. Industrial Function Category		d. Percent Production Volume	e. Number of Sites		f. Number of Workers		
	Code	CBI	Code	CBI	Code	CBI	Percent	CBI	Code	CBI	Code	CBI
3.A.1	PF		32531		U04		100		S1		W4	
3.A.2	PK		42491		U04		90		S1		W5	
3.A.3												
3.A.4												
3.A.5												
3.A.6												
3.A.7												
3.A.8												
3.A.9												
3.A.10												

SECTION B. COMMERCIAL AND CONSUMER USE DATA						N/A		X	
	a. Commercial and Consumer Product Category		b. Used in Products Intended for Children		c. Percent Production Volume associated with each category		d. Maximum Concentration associated with each category		
	Code	CBI	Y/N/NRO	CBI	Percent	CBI	Code	CBI	
3.B.1	C02		N		90		M5		
3.B.2	C08		N		10		M2		
3.B.3									
3.B.4									
3.B.5									
3.B.6									
3.B.7									
3.B.8									
3.B.9									
3.B.10									

[†]Substantiation required for CBI claims on chemical identity and site information.

Case Study I - Reporting Multiple Processes and Uses for Xylene

Scenario:

Company I produced 20,000,000 pounds of xylene, mixed isomers (CAS# 1330-20-7), referred to as xylene throughout this case study, at its Louisiana site during calendar year 2005. The Chemical Abstracts Index/Preferred name for xylene is dimethylbenzene. The xylene is manufactured as a liquid at concentrations exceeding 99 percent purity. Company I estimates 60 workers are reasonably likely to be exposed to xylene during manufacturing operations, as shown in Table I-1.

Company I sells 6,000,000 pounds of liquid xylene to three chemical manufacturing facilities located at other sites at 99%+ concentration to be used as a chemical reactant. Based on its chemical manufacturing experience, Company I estimated 6 to 8 workers are reasonably likely to be exposed to xylene at each manufacturing facility while transferring xylene from shipping containers to bulk storage tanks and reactors.

Company I ships 14,000,000 pounds of liquid xylene to 27 different formulator sites. These companies formulate the xylene to lower concentrations. Company I estimates an average of 10 workers are reasonably likely to be exposed at each formulator site.

Company I completed Part III using its knowledge of how its customers use xylene. However, some information about the processing and use of xylene by paint formulators was not readily obtainable.

Of the 14,000,000 pounds, 10 formulators collectively sell 6,000,000 pounds at 95% xylene to 150 to 200 hardware manufacturing sites for use as a metal degreaser. Company I estimates between 10 and 20 workers are reasonably likely to be exposed to xylene per hardware manufacturer.

The formulators incorporate the remaining 8,000,000 pounds of xylene into final products for commercial and consumer uses at concentrations between 0.5% and 95% by weight. 5,000,000 pounds are incorporated into automotive care products (35% maximum concentration) by formulators at 5 sites. 2,000,000 pounds are added to pesticide formulations (10% maximum conc.) by formulators at 3 sites. 800,000 pounds are processed into paints and coatings (15% maximum conc.) by formulators at 3 sites. 200,000 pounds are sold as a component of sealant products for consumer use, typically rubber cements and adhesives (up to 5% concentration) produced at 6 formulator processing sites.

For this case study, xylene is not a pesticide active ingredient; rather, it is a solvent (inert ingredient) in the pesticide formulation. The 2,000,000 pounds of xylene should be reported on Form U until incorporated into a pesticide formulation regulated by FIFRA. The use of the FIFRA-regulated pesticide formulation should not be reported under IUR.

Total sales of Company I during calendar year 2005 exceeded \$40 million.

Case Study I Flow Diagram

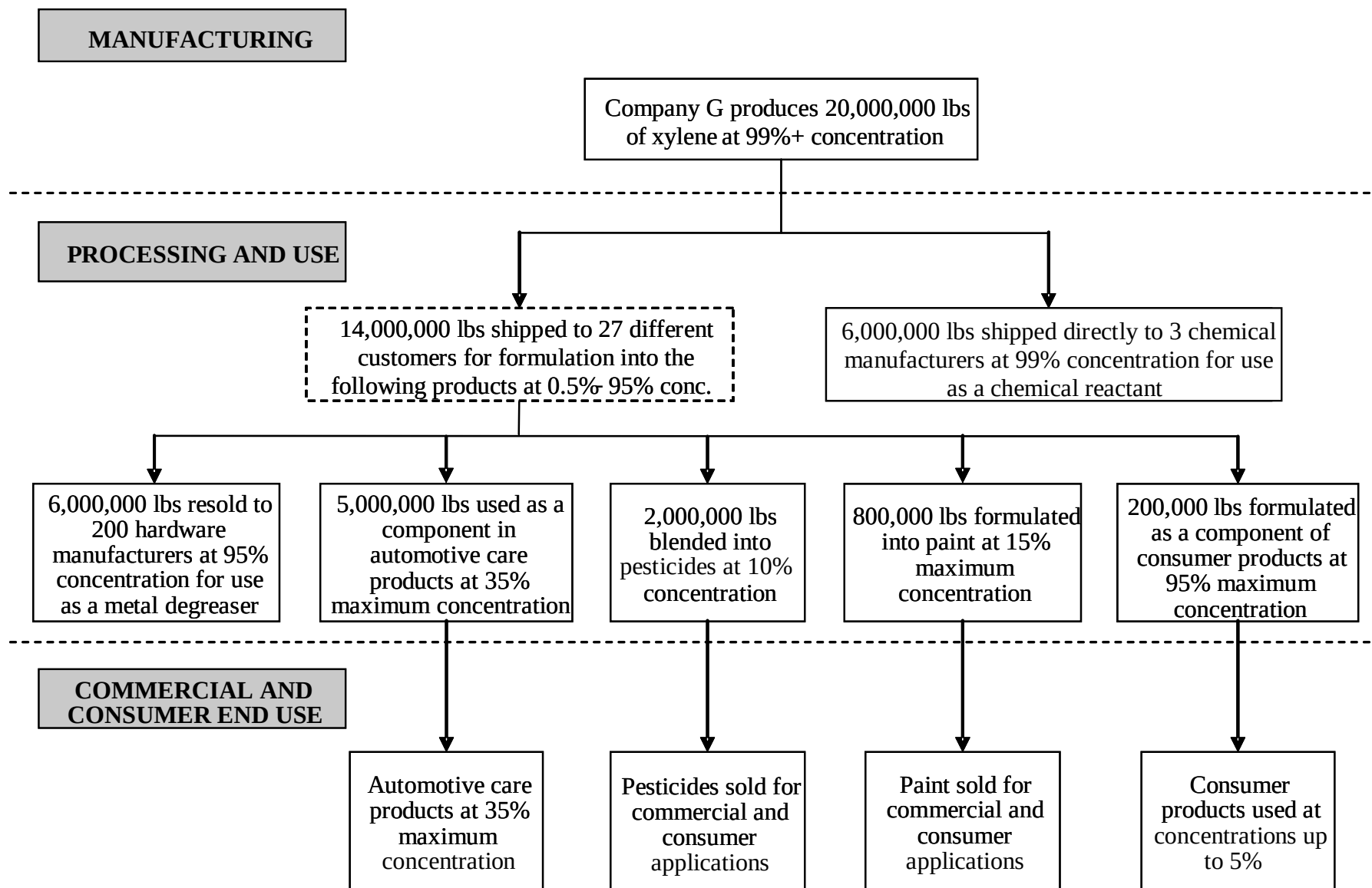


Table I-1. Number of Workers Reasonably Likely to be Exposed During Manufacturing

Activity	Number of Workers per Shift	Number of Shifts per Day	Total Number of Exposed Workers
Operating and monitoring equipment for the manufacture of xylene	8	3	24
Analyze samples (lab technicians)	2	1	2
Maintenance and equipment cleaning	2	3	6
Drumming xylene	4	3	12
Transferring xylene to bulk storage tank	2	3	6
Loading tank trucks and rail cars from bulk storage (including truck drivers)	6	1	6
Engineering staff	4	1	4
Total			60

Determining the Reporting Requirements:

- Step I:** Dimethylbenzene or xylene is listed in the TSCA Inventory. Persons manufacturing xylene do not qualify for an exemption from IUR requirements because xylene is not a polymer, microorganism, or one of certain forms of natural gas. Although xylene may be present in naturally-occurring substances including crude oil, when xylene is produced by chemical synthesis or separated by processes other than those listed in 40 CFR 710.4(b), it is not considered to be a naturally-occurring chemical substance for purposes of IUR.
- Step II:** Company I manufactured 25,000 pounds or more of xylene during calendar year 2005. Company I does not qualify for an exemption from IUR requirements as a small manufacturer because Company I had sales of \$40 million or more during calendar year 2005. Company I does not qualify for any exemption from IUR requirements found in 40 CFR 710.50 with respect to xylene because this chemical was not imported as part of an article, nor was it used solely for research and development, nor was it manufactured as an impurity, non-isolated intermediate, or byproduct which was not used for a commercial purpose.
- Step III:** Company I manufactured 300,000 pounds or more of xylene during calendar year 2005. Xylene is not included in the list of substances termed petroleum process streams in 40 CFR 710.46(b)(1) nor is this substance included in the list of specific exempted chemical substances in 40 CFR 710.46(b)(2). Xylene is not an inorganic chemical substance as defined in 40 CFR 710.46(b)(3).
- Result:** Company I should complete and submit Parts I, II, and III of Form U for xylene, mixed isomers.

Completing Form U:

Because Part I of Form U is completed in the same manner as in a previous case study, it is omitted here.

Part II: Section A. Chemical Identification

SECTION A. CHEMICAL IDENTIFICATION				CBI*	
2.A.1	Chemical Identifying Number	1330-20-7	2.A.2	ID Code	C
2.A.3	Chemical Name	Benzene, dimethyl			

Basis/Rationale:

2.A.1 - The CAS number for xylene, mixed isomers

2.A.2 - Code for CAS Number.

2.A.3 - Chemical Abstracts (CA) Index/Preferred name.

Part II: Section B. Manufacturing Information

SECTION B. MANUFACTURING INFORMATION									
				CBI			a. Physical Form		b. Percent of Production Volume in Each Physical Form
2.B.1	Company Information								
2.B.2	Site Information [†]								
2.B.3	Technical Contact Information						Check All That Apply	CBI	Percent CBI
2.B.4	Site Limited (Y/N)	N			2.B.10	Dry Powder			
2.B.5	Activity (Check all that apply)	☒ Manufacture ☐ Import			2.B.11	Pellets or Large Crystals			
2.B.6	Manufactured Production Volume (LB)	20,000,000			2.B.12	Water or Solvent Wet Solid			
2.B.7	Imported Production Volume (LB)	0			2.B.13	Other Solid			
2.B.8	Number of Workers (code)	W4			2.B.14	Gas or Vapor			
2.B.9	Maximum Concentration (code)	M5			2.B.15	Liquid	X		100

Basis/Rationale:

2.B.4 - Xylene is shipped off-site; therefore, it is not site limited.

2.B.5 - Xylene is produced domestically. It is not imported.

2.B.6 - Company I manufactured 20 million pounds of xylene.

2.B.8 - W4 - At least 50 but less than 100. Company I estimated 60 workers were reasonably likely to be exposed to xylene.

2.B.9 - M5 - Greater than 90% by weight. The maximum concentration leaving the site is 99%+.

2.B.15 - 100% of the xylene is produced as a liquid.

Completing Form U: (Continued)**Part III: Section A. Industrial Processing and Use Data**

SECTION A. INDUSTRIAL PROCESSING AND USE DATA									N/A			
	a. Type of Process or Use		b. (5-digit) NAICS Code		c. Industrial Function Category		d. Percent Production Volume		e. Number of Sites		f. Number of Workers	
	Code	CBI	Code	CBI	Code	CBI	Percent	CBI	Code	CBI	Code	CBI
3.A.1	PC		32519		U16		30		S1		W2	
3.A.2	U		33251		U27		30		S4		W7	
3.A.3	PF		32561		U28		30		S1		W4	
3.A.4	PF		32532		U04		10		S1		W3	
3.A.5	PF		32551		U28		4		S1		W3	
3.A.6	PF		32552		U02		0		S1		W4	

Basis/Rationale:

3.A.1- Represents the 6,000,000 lbs of xylene sold as a chemical reactant to 3 chemical manufacturers.

- PC - Processing as a reactant.
- 32519 - Other Basic Organic Chemical Manufacturing.
- U16 - Intermediates.
- $6,000,000 \text{ lbs} \div 20,000,000 \text{ total lbs} = 30\%$.
- S1 - Less than 10 sites. Company I sells to 3 chemical manufacturing sites.
- W2 - At least 10 but less than 25. Company I estimates 6 to 8 workers are reasonably likely to be exposed per site. $6 \text{ to } 8 \text{ workers/site} \times 3 \text{ sites} = 18 \text{ to } 24 \text{ workers}$.

3.A.2 - Represents the 6,000,000 lbs of xylene used at hardware manufacturers as a metal degreaser.

- U - Use; nonincorporative uses.
- 33251 - Hardware Manufacturing.
- U27 - Solvents (for cleaning and degreasing).
- $6,000,000 \text{ lbs} \div 20,000,000 \text{ total lbs} = 30\%$.
- S4 - At least 100 but less than 250 sites; Company I estimates 150 to 200 hardware manufacturers use xylene as a metal degreaser.
- W7 - At least 1,000 but less than 10,000 workers. Company I estimates between 10 and 20 workers are reasonably likely to be exposed per site. $10 \text{ to } 20 \text{ workers/site} \times 150 \text{ to } 200 \text{ sites} = 1,500 \text{ to } 4,000 \text{ workers}$.

3.A.3 - Represents the 5,000,000 lbs of xylene formulated into automotive care products.

- PF - Processing - incorporation into formulation or mixture.
- 32561 - Soap and Cleaning Compound Manufacturing.
- U28 - Solvents (which become part of the formulation or mixture).
- $5,000,000 \text{ lbs} \div 20,000,000 \text{ total lbs} = 25\%$; Round to 30%.
- S1 - Less than 10 sites; there are 5 automotive care products formulator sites.
- W4 - At least 50 but fewer than 100. Company I estimates 10 workers are exposed per site. $10 \text{ workers/site} \times 5 \text{ sites} = 50 \text{ workers}$.

Completing Form U: (Continued)

3.A.4 - Represents the 2,000,000 lbs of xylene formulated into pesticides.

- a. PF - Processing - incorporation into formulation or mixture.
- b. 32532 – Pesticide and Other Agricultural Chemical Manufacturing.
- c. U04 – Agricultural Chemicals.
- d. $2,000,000 \text{ lbs} \div 20,000,000 \text{ total lbs} = 10\%$.
- e. S1 – Less than 10 sites; there are 3 pesticide formulator sites.
- f. W3 - At least 25 but fewer than 50. Company I estimates 10 workers are reasonably likely to be exposed per site. $10 \text{ workers/site} \times 3 \text{ sites} = 30 \text{ workers}$.

Pesticides are excluded from the definition of a chemical substance under TSCA; therefore, once xylene is incorporated into a formulation regulated by FIFRA, further uses of this formulation should not be reported on Form U.

3.A.5 - Represents the 800,000 lbs of xylene used in paint formulations.

- a. PF - Processing, incorporation into formulation, mixture, or reaction product.
- b. 32551 - Paint and Coating Manufacturing.
- c. U28 - Solvents (which become part of a product formulation or mixture).
- d. $800,000 \text{ lbs} \div 20,000,000 \text{ total lbs} = 4\%$.
- e. S1 – Less than 10 sites; there are 3 paint formulator sites.
- f. W3 - At least 25 but fewer than 50 workers. Company I estimates 10 workers are reasonably likely to be exposed per site. $10 \text{ workers/site} \times 3 \text{ sites} = 30 \text{ workers}$.

3.A.6 - Represents the 200,000 lbs. of xylene used in consumer products.

- a. PF – Processing, incorporation into formulation, mixture or reaction product.
- b. 32552 – Adhesive Manufacturing.
- c. U02 - Adhesives and binding agents.
- d. $200,000 \text{ lbs} \div 20,000,000 \text{ total lbs} = 1\%$; round to zero since less than 10% of total and amount used in this application is less than 300,000 lbs.
- e. S1 – Less than 10 sites; there are 6 consumer products formulator sites.
- f. W4 – At least 50 but fewer than 100 workers. Company I estimates 10 workers are reasonably likely to be exposed per site. $10 \text{ workers/site} \times 6 \text{ sites} = 60 \text{ workers}$.

Completing Form U: (Continued)**Part III: Section B. Commercial and Consumer End-Use Exposure Related Data**

SECTION B. COMMERCIAL AND CONSUMER USE DATA						N/A		
	a. Commercial and Consumer Product Category		b. Used in Products Intended for Children		c. Percent Production Volume associated with each category		d. Maximum Concentration associated with each category	
	Code	CBI	Y/N/NRO	CBI	Percent	CBI	Code	CBI
3.B.1	C04		N		30		M3	
3.B.2	C12		N		4		M2	
3.B.3	C01		N		0		M5	
3.B.4								
3.B.5								

Basis/Rationale:

3.B.1 - Represents the 5,000,000 lbs sold for consumer and commercial use in automotive care products.

- C04 - Automotive care products.
- N - While children may be exposed to the products, it is not intended to be used by children up to the age of 14.
- $30\% - 5,000,000 \text{ lbs} \div 20,000,000 \text{ lbs} = 25\%$. Round to 30%
- M3 - From 31% to 60% by weight. The maximum concentration of xylene in the automotive care products is 35%.

3.B.2 - Represents the 800,000 lbs sold for consumer and commercial use in paint formulations.

- C12 - Paints and coatings.
- N - While children may be exposed to the products, it is not intended to be used by children up to the age of 14.
- $4\% - 800,000 \text{ lbs} \div 20,000,000 \text{ lbs} = 4\%$.
- M2 - From 1% to 30% by weight. The maximum concentration of xylene in paint formulations is 15%.

3.B.3 - Represents the 200,000 lbs incorporated into adhesives sold to consumers.

- C01 - Adhesives and sealants.
- N - While children may be exposed to the products, they are not intended to be used by children up to 14 years of age.
- 0% - Less than 5% of production and less than 300,000 lbs used in this application.
- M2 - From 1% to 30 % by weight. The maximum concentration of xylene in the sealant products is 5%.

Form U – Case Study I

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PART II. MANUFACTURING INFORMATION

SECTION A. CHEMICAL IDENTIFICATION				CBI*	
2.A.1	Chemical Identifying Number	1330-20-7	2.A.2	ID Code	C
2.A.3	Chemical Name	Benzene, dimethyl-			

SECTION B. MANUFACTURING INFORMATION										
				CBI			a. Physical Form		b. Percent of Production Volume in Each Physical Form	
2.B.1	Company Information									
2.B.2	Site Information [†]									
2.B.3	Technical Contact Information						Check All That Apply	CBI	Percent	CBI
2.B.4	Site Limited (Y/N)	N			2.B.10	Dry Powder				
2.B.5	Activity (Check all that apply)	☒ Manufacture ☐ Import			2.B.11	Pellets or Large Crystals				
2.B.6	Manufactured Production Volume (LB)	20,000,000			2.B.12	Water or Solvent Wet Solid				
2.B.7	Imported Production Volume (LB)	0			2.B.13	Other Solid				
2.B.8	Number of Workers (code)	W4			2.B.14	Gas or Vapor				
2.B.9	Maximum Concentration (code)	M5			2.B.15	Liquid	X		100	

PART III. PROCESSING AND USE INFORMATION

Complete Part III, Sections A and B if the sum of the production volumes noted in Blocks 2.B.6 and 2.B.7 is 300,000 pounds or more.

SECTION A. INDUSTRIAL PROCESSING AND USE DATA								N/A				
	a. Type of Process or Use		b. (5-digit) NAICS Code		c. Industrial Function Category		d. Percent Production Volume		e. Number of Sites		f. Number of Workers	
	Code	CBI	Code	CBI	Code	CBI	Percent	CBI	Code	CBI	Code	CBI
3.A.1	PC		32519		U16		30		S1		W2	
3.A.2	U		33251		U27		30		S4		W7	
3.A.3	PF		32561		U28		30		S2		W4	
3.A.4	PF		32532		U04		10		S2		W3	
3.A.5	PF		32551		U28		4		S2		W3	
3.A.6	PF		32552		U02		0		S1		W4	
3.A.7												
3.A.8												
3.A.9												
3.A.10												

SECTION B. COMMERCIAL AND CONSUMER USE DATA						N/A			
	a. Commercial and Consumer Product Category		b. Used in Products Intended for Children		c. Percent Production Volume associated with each category		d. Maximum Concentration associated with each category		
	Code	CBI	Y/N/NRO	CBI	Percent	CBI	Code	CBI	
3.B.1	C04		N		30		M3		
3.B.2	C12		N		4		M2		
3.B.3	C01		N		0		M2		
3.B.4									
3.B.5									
3.B.6									
3.B.7									
3.B.8									
3.B.9									
3.B.10									

[†]Substantiation required for CBI claims on chemical identity and site information.

Case Study J - Reporting an Inorganic Fertilizer (Ammonium Phosphate)

Scenario:

PQR Fertilizer Company, located at 321 Tombstone Road, Sierra Vista, Cochise County, Arizona, 85635, is a subsidiary of the XYZ Corporation of Salt Lake City, Utah. Phosphate ores are mined at the PQR Fertilizer facility, slurried, and reacted with sulfuric acid to produce phosphoric acid. The phosphoric acid is then reacted with liquid ammonia produced at the PQR facility to produce ammonium phosphate fertilizer. PQR produced 1.5 billion pounds of ammonium phosphate fertilizer in 2005 and employed 250 persons. The plant manager is John Smith and the technical contact for IUR submissions is Tom Jones. The production process is described below.

Mining Operation - The phosphate rock is mined at the PQR Fertilizer site by surface mining and transported by truck to adjacent processing facilities. Approximately 4 billion pounds of phosphate rock containing 25% net phosphate are mined each year. Forty persons are employed in the mining operation.

Beneficiation Plant - At the beneficiation plant on the PQR Fertilizer site, the phosphate rock is crushed, washed, and then deslimed. The ore is transferred to a ball mill and ground to form 2.9 billion pounds of phosphate slurry annually. The slurry is then filtered and stored until needed for phosphoric acid production. The slurry product contains 35% net phosphate. Sixty persons are employed in the beneficiation plant.

Sulfuric Acid Plant - At a nearby copper mine owned and operated by KLM Mining Company, sulfur dioxide, emitted during copper smelting operations, is collected and cleaned in a two-stage gas scrubbing process prior to being oxidized to sulfur trioxide which is absorbed in a water spray to produce liquid sulfuric acid. Sulfur trioxide is not isolated or stored during the manufacturing of sulfuric acid. The acid is piped to storage tanks and subsequently transported by rail to the PQR Fertilizer site where it is stored in tanks until needed. The sulfuric acid plant produces 2.1 billion pounds of 98% sulfuric acid and employs 65 persons.

Phosphoric Acid Plant - PQR Fertilizer manufactures phosphoric acid by combining the phosphate slurry from the beneficiation plant with sulfuric acid. The acid reacts with the slurry in large reactors and produces 1.65 billion pounds of liquid product which is 78% phosphoric acid by weight. During this reaction, 2.7 billion pounds of calcium sulfate [gypsum crystals] are formed annually. The calcium sulfate [gypsum crystals (>99% anhydrous CaSO_4)] formed as a byproduct of this process is recovered, dewatered, and sold to a facility that manufactures wallboard. Forty persons are employed in the phosphoric acid plant.

Ammonia Plant - In the ammonia plant, hydrogen (manufactured from natural gas) and nitrogen (extracted from air) are reacted to form high-purity liquid ammonia in a closed-loop continuous reactor. The ammonia is stored at atmospheric pressure in a large tank. PQR Fertilizer produces 235 million pounds of ammonia per annum. Thirty persons are employed in the ammonia plant.

Granulation Plant - The final phase of fertilizer production takes place in the granulation plant where the phosphoric acid is combined with the liquid ammonia to form liquid phosphate slurry. The slurry is pumped into the granulator where it forms granules of fertilizer which are dried and screened. The process manufactures 1.5 billion pounds of the fertilizer which contains 98% ammonium phosphate and approximately 2% diammonium phosphate which is a byproduct formed during the production of ammonium phosphate. The final fertilizer product is transported by rail to customers. Forty persons working in the granulation plant are reasonably likely to be exposed to ammonium phosphate.

Both the PQR Fertilizer Company and the KLM Mining Company are wholly owned subsidiaries of XYZ Corporation. XYZ Corporation had sales in excess of \$40 million in calendar year 2005.

Determining the Reporting Requirements:

Each chemical substance listed in the scenario above should be evaluated individually.

Phosphate rock ore

- Step I: Phosphate rock ore is a naturally occurring chemical substance as defined in 40 CFR 710.4 (See 40 CFR 710.46(a)). Therefore, phosphate rock is exempted from IUR requirements.
- Step II: Not applicable.
- Step III: Not applicable.
- Result: PQR Fertilizer Company does not need to complete Form U for phosphate rock ore.

Phosphate ore slurry following beneficiation

- Step I: The phosphate ore is crushed, washed with water, deslimed, ground in the presence of water to produce a slurry, filtered, and stored. Since the ore is processed only by manual, mechanical, and gravitational means, and by washing with water, the resulting slurry continues to meet the definition of a naturally occurring chemical substance. Therefore, the phosphate ore slurry is exempted from IUR requirements.
- Step II: Not applicable.
- Step III: Not applicable.
- Result: PQR Fertilizer Company does not need to complete Form U for the phosphate ore slurry following beneficiation.

Determining the Reporting Requirements: (Continued)

Sulfur Dioxide

- Step I: Sulfur dioxide is listed in the TSCA Inventory. Persons manufacturing sulfur dioxide do not qualify for an exemption from IUR requirements because manufactured sulfur dioxide is not a polymer, microorganism, a naturally-occurring substance, or one of certain forms of natural gas. (See 40 CFR 710.46(a))
- Step II: KLM Mining Company manufactured more than 25,000 pounds of sulfur dioxide during calendar year 2005. KLM does not qualify for an exemption as a small manufacturer because its parent, XYZ Corporation, had total sales of \$40 million or more during calendar year 2005. Even though sulfur dioxide is a waste product from the copper smelting operation, it does not qualify for an exemption from IUR reporting as a byproduct because it is subsequently used for a commercial purpose (to manufacture sulfur trioxide). However, in this case study, sulfur dioxide is manufactured and consumed as a non-isolated intermediate and therefore KLM is exempt from IUR reporting for sulfur dioxide under 40 CFR 710.50 which references 40 CFR 720.30(h)(8).
- Step III: Not applicable
- Result: KLM Mining Company is not required to report for sulfur dioxide on Form U.

Sulfuric Trioxide

- Step I: Sulfur trioxide is listed in the TSCA Inventory. Persons manufacturing sulfur trioxide do not qualify for an exemption from IUR requirements because manufactured sulfur trioxide is not a polymer, microorganism, a naturally-occurring substance, or one of certain forms of natural gas. (See 40 CFR 710.46(a))
- Step II: KLM Mining Company produced more than 25,000 of sulfur trioxide during calendar year 2005. KLM does not qualify for an exemption as a small manufacturer because its parent, XYZ Corporation, had total sales of \$40 million or more during calendar year 2005. In this case study, sulfur trioxide is manufactured and consumed as a non-isolated intermediate and therefore KLM is exempt from IUR reporting for sulfur trioxide under 40 CFR 710.50 which references 40 CFR 720.30(h)(8).
- Step III: Not applicable
- Result: PQR Fertilizer Company does not need to complete Form U.

Determining the Reporting Requirements: (Continued)

Sulfuric acid

- Step I: Sulfuric acid is listed in the TSCA Inventory. Persons manufacturing sulfuric acid do not qualify for an exemption from IUR requirements because manufactured sulfuric acid is not a polymer, microorganism, a naturally-occurring substance, or one of certain forms of natural gas. (See 40 CFR 710.46(a))
- Step II: KLM Mining Company manufactured more than 25,000 pounds of sulfuric acid during calendar year 2005. KLM does not qualify for an exemption as a small manufacturer because its parent, XYZ Corporation, had total sales of \$40 million or more during calendar year 2005. KLM does not qualify for any exemption from IUR requirements found in 40 CFR 710.50 with respect to sulfuric acid because this chemical was not imported as part of an article, nor was it used solely for research and development, nor was it manufactured as an impurity, non-isolated intermediate, or byproduct which was not used for a commercial purpose.
- Step III: KLM Mining Company manufactured more than 300,000 pounds of sulfuric acid. However, sulfuric acid is an inorganic substance, as defined in 40 CFR 710.46(b)(3), which is not the subject of any of certain actions under TSCA listed in 40 CFR 710.46; therefore, completing Part III of Form U for sulfuric acid is not required for the 2006 submission period.
- Result: The KLM Mining Company manufacturing site, not PQR Fertilizer Company, should complete and submit Parts I and II of Form U for sulfuric acid.

Phosphoric acid

- Step I: Phosphoric acid is listed in the TSCA Inventory. Persons manufacturing phosphoric acid do not qualify for an exemption from IUR requirements because phosphoric acid is not a polymer, microorganism, a naturally-occurring substance, or one of certain forms of natural gas. (See 40 CFR 710.46(a))
- Step II: PQR Fertilizer Company manufactured more than 25,000 pounds of phosphoric acid during calendar year 2005. PQR does not qualify for an exemption as a small manufacturer because its parent, XYZ Corporation, had total sales of \$40 million or more during calendar year 2005. PQR does not qualify for any exemption from IUR requirements found in 40 CFR 710.50 with respect to phosphoric acid because this chemical was not imported as part of an article, nor was it used solely for research and development, nor was it manufactured as an impurity, non-isolated intermediate, or byproduct which was not used for a commercial purpose.
- Step III: PQR Fertilizer Company manufactured more than 300,000 pounds of phosphoric acid but phosphoric acid is an inorganic substance, as defined in 40 CFR 710.46(b)(3), which is not the subject of any of certain actions under TSCA listed in 40 CFR 710.46; therefore, completing Part III of Form U for phosphoric acid is not required for the 2006 submission period.
- Result: PQR Fertilizer Company should complete and submit Parts I and II of Form U for phosphoric acid because phosphoric acid is an inorganic substance listed on the TSCA Inventory which PQR manufactured in an amount of 25,000 lbs or more during calendar year 2005.

Determining the Reporting Requirements: (Continued)

Calcium Sulfate (Gypsum)

- Step I: Calcium sulfate is listed in the TSCA Inventory. Persons manufacturing calcium sulfate do not qualify for an exemption from IUR requirements because calcium sulfate is not a polymer, microorganism, a naturally-occurring substance, or one of certain forms of natural gas. (See 40 CFR 710.46(a))
- Step II: PQR Fertilizer Company manufactured more than 25,000 pounds of calcium sulfate during calendar year 2005. PQR does not qualify for an exemption as a small manufacturer because its parent, XYZ Corporation, had total sales of \$40 million or more during calendar year 2005. PQR does not qualify for any exemption from IUR requirements found in 40 CFR 710.50 with respect to calcium sulfate because this chemical was not imported as part of an article, nor was it used solely for research and development, nor was it manufactured as an impurity, non-isolated intermediate, or byproduct which was not used for a commercial purpose. The gypsum is manufactured as a byproduct used for commercial purposes (to manufacture wallboard) and is therefore not exempt from IUR reporting.
- Step III: PQR Fertilizer Company manufactured more than 300,000 pounds of calcium sulfate but calcium sulfate is an inorganic substance, as defined in 40 CFR 710.46(b)(3), which is not the subject of any of certain actions under TSCA listed in 40 CFR 710.46; therefore, completing Part III of Form U is not required for the 2006 submission period.
- Result: PQR Fertilizer Company should complete Parts I and II of Form U for calcium sulfate.

Hydrogen

- Step I: Hydrogen is listed in the TSCA Inventory. Persons manufacturing hydrogen by stripping from natural gas do not qualify for an exemption from IUR reporting under 40 CFR 710.46(a).
- Step II: PQR Fertilizer Company manufactured more than 25,000 lbs of hydrogen during calendar year 2005. PQR does not qualify for an exclusion from the IUR regulation as a small manufacturer because its parent, XYZ Corporation, has sales of \$40 million or more. However, PQR does qualify for an exemption from IUR requirements for hydrogen because, in this case study, hydrogen is manufactured as a non-isolated intermediate. (See 40 CFR 710.50 which references 40 CFR 720.30(h)).
- Step III: Not applicable.
- Result: PQR Fertilizer Company does not need to complete Form U for hydrogen.

Determining the Reporting Requirements: (Continued)

Nitrogen

Step I: Nitrogen is listed in the TSCA Inventory. In this case study, nitrogen is extracted from air and therefore meets the definition of a naturally occurring chemical substance under 40 CFR 710.4. Because nitrogen is naturally occurring, it is exempted from IUR requirements in accordance with 40 CFR 710.46(a)(3).

Step II: Not applicable.

Step III: Not applicable.

Result: PQR Fertilizer Company does not need to complete Form U for nitrogen.

Ammonia

Step I: Ammonia is listed in the TSCA Inventory. Persons manufacturing ammonia do not qualify for an exemption from IUR requirements because ammonia is not a polymer, microorganism, a naturally-occurring substance, or one of certain forms of natural gas. (See 40 CFR 710.46(a))

Step II: PQR Fertilizer Company manufactured more than 25,000 pounds of ammonia during calendar year 2005. PQR does not qualify for an exemption as a small manufacturer because its parent, XYZ Corporation, had total sales of \$40 million or more during calendar year 2005. PQR does not qualify for any exemption from IUR requirements found in 40 CFR 710.50 with respect to ammonia because this chemical was not imported as part of an article, nor was it used solely for research and development, nor was it manufactured as an impurity, non-isolated intermediate, or byproduct which was not used for a commercial purpose.

Step III: PQR Fertilizer Company manufactured more than 300,000 pounds of ammonia during calendar year 2005. However, ammonia is an inorganic substance, as defined in 40 CFR 710.46(b)(3), and is not the subject of any of certain actions under TSCA listed in 40 CFR 710.46; therefore, in accordance with 40 CFR 710.46(b)(3), completion of Part III of Form U is not required for the 2006 submission period.

Result: PQR Fertilizer Company should complete and submit Parts I and II of Form U since ammonia is an inorganic substance.

Determining the Reporting Requirements: (Continued)

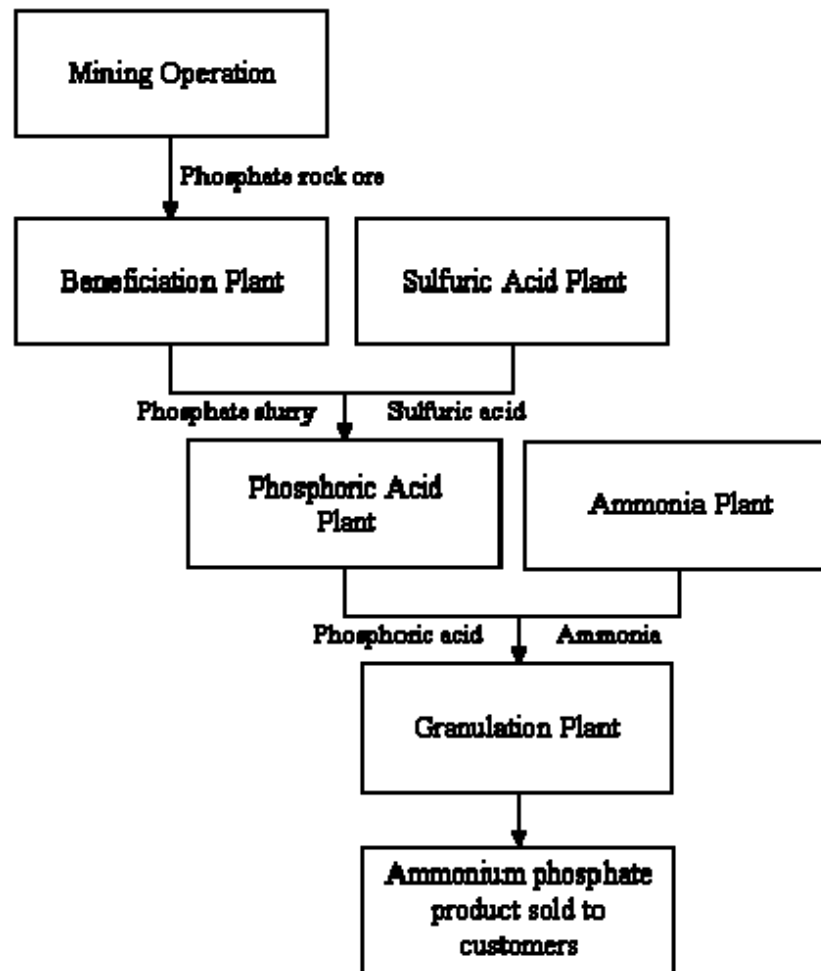
Ammonium phosphate (CAS# 7722-76-1)

- Step I: Ammonium phosphate is listed in the TSCA Inventory. Persons manufacturing ammonium phosphate do not qualify for an exemption from IUR requirements because ammonium phosphate is not a polymer, microorganism, a naturally-occurring substance, or one of certain forms of natural gas. (See 40 CFR 710.46(a))
- Step II: PQR Fertilizer Company manufactured more than 25,000 pounds of ammonium phosphate during calendar year 2005. PQR does not qualify for an exemption as a small manufacturer because its parent, XYZ Corporation, had total sales of \$40 million or more during calendar year 2005. PQR does not qualify for any exemption from IUR requirements found in 40 CFR 710.50 with respect to ammonium phosphate because this chemical was not imported as part of an article, nor was it used solely for research and development, nor was it manufactured as an impurity, non-isolated intermediate, or byproduct which was not used for a commercial purpose.
- Step III: PQR Fertilizer Company manufactured more than 300,000 pounds of ammonium phosphate during calendar year 2005. However, ammonium phosphate is an inorganic substance, as defined in 40 CFR 710.46(b)(3), and is not the subject of any of certain actions under TSCA listed in 40 CFR 710.46; therefore, in accordance with 40 CFR 710.46(b)(3), completion of Part III of Form U is not required for the 2006 submission period.
- Result: PQR Fertilizer Company should complete and submit Parts I and II of Form U since ammonium phosphate is an inorganic substance listed on the TSCA Inventory which PQR manufactured in an amount of 25,000 lbs or more during calendar year 2005.

Diammonium phosphate (CAS# 7783-28-0)

- Step I: Diammonium phosphate is listed in the TSCA Inventory. Persons manufacturing ammonium phosphate do not qualify for an exemption from IUR requirements because ammonium phosphate is not a polymer, microorganism, a naturally-occurring substance, or one of certain forms of natural gas. (See 40 CFR 710.46(a))
- Step II: PQR Fertilizer Company manufactured more than 25,000 pounds of diammonium phosphate during calendar year 2005. PQR does not qualify for an exemption as a small manufacturer because its parent, XYZ Corporation, had total sales of \$40 million or more during calendar year 2005. However diammonium phosphate is manufactured as a byproduct that is not manufactured for distribution in commerce as a chemical substance per se and has no commercial purpose separate from the commercial fertilizer. For this scenario, diammonium phosphate is exempt from IUR reporting because it is a byproduct which is no used for a commercial purpose separate from the commercial fertilizer product(see 40 CFR 710.50(c) which references 40 CFR 720.30(h)(2)).
- Step III: Not applicable.
- Result: PQR Fertilizer Company does not need to complete Form U for diammonium phosphate.

Case Study J Flow Diagram



Completing Form U:

Form U is completed below for the manufacture of ammonium phosphate described in this case study.

Part I: Site Identification

The information collected on Part I of Form U has been entered onto the sample form on page 67.

Part II: Section A. Chemical Identification

SECTION A. CHEMICAL IDENTIFICATION				CBI*	
2.A.1	Chemical Identifying Number	7722-76-1	2.A.2	ID Code	C
2.A.3	Chemical Name	Phosphoric acid, monoammonium salt			

Basis/Rationale:

2.A.1 - The CAS number for ammonium phosphate is 7722-76-1.

2.A.2 - Code for CAS Number.

2.A.3 - The Chemical Abstracts (CA) Index/Preferred name is Phosphoric acid, monoammonium salt.

Part II: Section B. Manufacturing Information

SECTION B. MANUFACTURING INFORMATION									
			CBI			a. Physical Form		b. Percent of Production Volume in Each Physical Form	
2.B.1	Company Information								
2.B.2	Site Information [†]								
2.B.3	Technical Contact Information					Check All That Apply	CBI	Percent	CBI
2.B.4	Site Limited (Y/N)	N		2.B.10	Dry Powder				
2.B.5	Activity (Check all that apply)	☒ Manufacture ☐ Import		2.B.11	Pellets or Large Crystals	X		100	
2.B.6	Manufactured Production Volume (LB)	1,470,000,000		2.B.12	Water or Solvent Wet Solid				
2.B.7	Imported Production Volume (LB)	0		2.B.13	Other Solid				
2.B.8	Number of Workers (code)	W3		2.B.14	Gas or Vapor				
2.B.9	Maximum Concentration (code)	M5		2.B.15	Liquid				

Completing Form U: (Continued)Basis/Rationale:

- 2.B.4** - Ammonium phosphate is shipped off-site; therefore, it is not site limited.
- 2.B.5** - Ammonium phosphate is manufactured domestically at PQR Fertilizer Company.
- 2.B.6** - PQR manufactures 1,470 million pounds of ammonium phosphate. (1,500 million pounds x 98% = 1,470 million pounds)
- 2.B.8** - W3 - At least 25 but less than 50. PQR Fertilizer Company estimates 40 workers are reasonably likely to be exposed during the production of ammonium phosphate.
- 2.B.9** - M5 - Greater than 90% by weight. The maximum concentration leaving the site is 98%.
- 2.B.11** - 100% of the ammonium phosphate is produced as granules.

Part III: Processing and Use Information

SECTION A. INDUSTRIAL PROCESSING AND USE DATA									N/A		X	
	a. Type of Process or Use		b. (5-digit) NAICS Code		c. Industrial Function Category		d. Percent Production Volume		e. Number of Sites		f. Number of Workers	
	Code	CBI	Code	CBI	Code	CBI	Percent	CBI	Code	CBI	Code	CBI
3.A.1												
3.A.2												

SECTION B. COMMERCIAL AND CONSUMER USE DATA							N/A		X	
	a. Commercial and Consumer Product Category		b. Used in Products Intended for Children		c. Percent Production Volume associated with each category		d. Maximum Concentration associated with each category			
	Code	CBI	Y/N/NRO	CBI	Percent	CBI	Code	CBI		
3.B.1										
3.B.2										

Basis/Rationale:

- Ammonium phosphate is an inorganic substance and is partially exempt from reporting for the 2006 submission period; therefore, check the “N/A” boxes in the upper right-hand corner of Sections A and B of Part III.

Form U – Case Study J

(IMPORTANT: Type only, read instructions before completing form)


**FORM
U** 2006

U.S. Environmental Protection Agency
Washington, DC 20460
Partial Updating of TSCA Inventory Data Base
Site Report
(Section 8(a) Toxic Substances Control Act, 15 U.S.C. 2607(a))

PAGE 1 of ____

FOR EPA USE ONLY

Report Number	
Mark "X" here if this is a revision to the previous report	

CERTIFICATION

Certification Statement: I hereby certify to the best of my knowledge and belief that Parts I and II have been completed in compliance with the requirements of 40 CFR 710.52(c)(1), (2), and (3); Part III of this form has been completed in compliance with the requirements of 40 CFR 710.52(c)(4); and any confidentiality claims are true and correct as to that information for which they have been asserted.

Signature		Date signed	
Name (printed)	John Smith	Official Title	Plant Manager

PART I. SITE IDENTIFICATION INFORMATION**SECTION A. COMPANY INFORMATION***

1.A.1	Company Name	XYZ Corporation
1.A.2	Company Dun & Bradstreet Number	153426785

SECTION B. SITE INFORMATION*

1.B.1	Site Name	PQR Fertilizer Company			
1.B.2	Site Dun & Bradstreet Number	598316473	EPA Facility Identification Number	For EPA Use Only Leave Blank	
1.B.3	Street Address (Line 1)	321 Tombstone Road			
1.B.4	Street Address (Line 2)				
1.B.5	City	Sierra Vista	1.B.6	County / Parish	Cochise
1.B.7	State	AZ	1.B.8	Zip code	85635

SECTION C. TECHNICAL CONTACT INFORMATION*

1.C.1	Name	Tom Jones	1.C.2	Telephone	502-555-1400
1.C.3	Email Address	jones.tom@pqr.com			
1.C.4	Mailing Address (Line 1)	321 Tombstone Road			
1.C.5	Mailing Address (Line 2)	Mailcode 8A			
1.C.6	City	Sierra Vista	1.C.7	State	AZ
			1.C.8	Zip Code	85635

* Confidentiality claims for information in Part I, Sections A, B, and C, are made, as necessary, for each chemical substance on subsequent pages.
EPA Form Number <7740-8> (Rev 06/07/06) - Previous editions are obsolete
Form Approved OMB Number: 2070-0162 (expiration May 2009)

Form U – Case Study J

Page ____ of ____
FOR EPA USE ONLY

PART II. MANUFACTURING INFORMATION

SECTION A. CHEMICAL IDENTIFICATION				CBI*	
2.A.1	Chemical Identifying Number	7722-76-1	2.A.2	ID Code	C
2.A.3	Chemical Name	Phosphoric acid, monoammonium salt			

SECTION B. MANUFACTURING INFORMATION										
				CBI			a. Physical Form	b. Percent of Production Volume in Each Physical Form		
2.B.1	Company Information									
2.B.2	Site Information [†]									
2.B.3	Technical Contact Information						Check All That Apply	CBI	Percent	CBI
2.B.4	Site Limited (Y/N)	N			2.B.10	Dry Powder				
2.B.5	Activity (Check all that apply)	☒ Manufacture ☐ Import			2.B.11	Pellets or Large Crystals	X		100	
2.B.6	Manufactured Production Volume (LB)	1,470,000,000			2.B.12	Water or Solvent Wet Solid				
2.B.7	Imported Production Volume (LB)	0			2.B.13	Other Solid				
2.B.8	Number of Workers (code)	W3			2.B.14	Gas or Vapor				
2.B.9	Maximum Concentration (code)	M5			2.B.15	Liquid				

PART III. PROCESSING AND USE INFORMATION

Complete Part III, Sections A and B if the sum of the production volumes noted in Blocks 2.B.6 and 2.B.7 is 300,000 pounds or more.

SECTION A. INDUSTRIAL PROCESSING AND USE DATA								N/A		X		
a. Type of Process or Use		b. (5-digit) NAICS Code		c. Industrial Function Category		d. Percent Production Volume		e. Number of Sites		f. Number of Workers		
	Code	CBI	Code	CBI	Code	CBI	Percent	CBI	Code	CBI	Code	CBI
3.A.1												
3.A.2												
3.A.3												
3.A.4												
3.A.5												
3.A.6												
3.A.7												
3.A.8												
3.A.9												
3.A.10												

SECTION B. COMMERCIAL AND CONSUMER USE DATA						N/A		X	
a. Commercial and Consumer Product Category		b. Used in Products Intended for Children		c. Percent Production Volume associated with each category		d. Maximum Concentration associated with each category			
	Code	CBI	Y/N/NRO	CBI	Percent	CBI	Code	CBI	
3.B.1									
3.B.2									
3.B.3									
3.B.4									
3.B.5									
3.B.6									
3.B.7									
3.B.8									
3.B.9									
3.B.10									

[†]Substantiation required for CBI claims on chemical identity and site information..

Case Study K - Reporting Tetrasodium-EDTA

Scenario:

Chelant Chemical Company (CCC) manufactured thirty million lbs of tetrasodium-EDTA (chemical abstracts/preferred name is glycine, N,N'-1,2-ethanediylbis[N-(carboxymethyl)-, tetrasodium salt, CAS#64-02-8) at its New Jersey site during calendar year 2005. The following text and diagrams describe the manufacturing, industrial processing and use, and commercial and consumer use of tetrasodium-EDTA manufactured by CCC. CCC's wholesalers and customers may also purchase tetrasodium-EDTA from other suppliers. CCC had sales in excess of \$40 million in 2005.

On-Site Manufacturing Activities

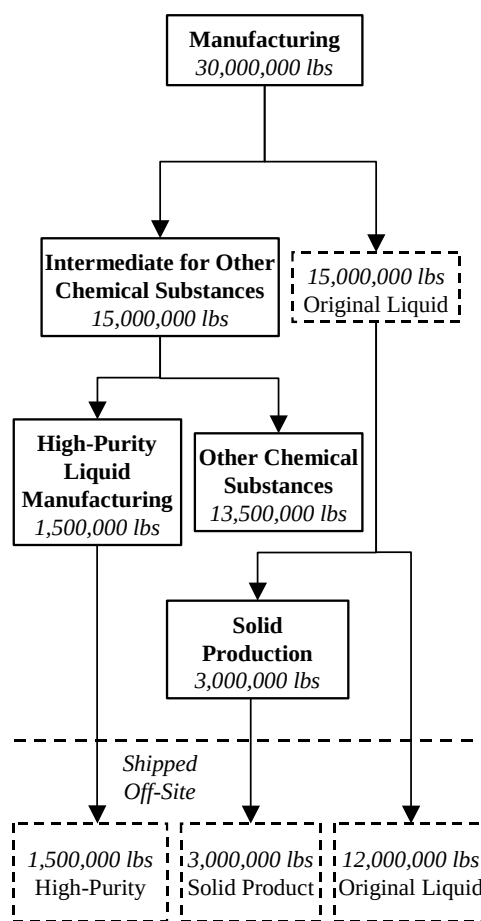
Manufacturing: CCC manufactures 30,000,000 pounds of tetrasodium-EDTA in liquid solution at 40 percent concentration (75,000,000 total pounds of solution) and transfers it directly to storage tanks. Manufacturing operations occur 24 hours per day throughout the year, supported by four shifts. One worker per shift samples the solution, and one worker per shift is responsible for transfers. Both workers are reasonably likely to be exposed to tetrasodium-EDTA.

Reacted to Other Chemical Substances: CCC transfers 15,000,000 pounds per year of liquid solution containing tetrasodium-EDTA through closed piping for use as a chemical intermediate to produce other chemical substances on-site. CCC believes no workers are reasonably likely to be exposed to the substance as part of the transfer operations.

High-Purity Liquid Manufacturing: Of the 15,000,000 pounds reacted to produce other substances, 1,500,000 pounds of EDTA is precipitated to remove the impurities that remain in the liquid supernatant. The salt is redissolved to produce a high-purity liquid tetra-sodium EDTA (still at 40 percent concentration, but impurities and byproducts are removed). Two workers per shift are reasonably likely to be exposed to the product, which is produced in batches, 24 hours per day using four shifts to support operations.

Other Chemical Substances: CCC converts 13,500,000 pounds of tetrasodium-EDTA to other chemicals that are either sold to customers or used on-site. CCC believes that no workers are reasonably likely to be exposed to tetrasodium-EDTA during conversion of tetrasodium-EDTA to other substances. CCC should evaluate the IUR reporting requirements for the manufacture of these other chemical substances.

Solid Production: CCC transfers 3,000,000 pounds of the original liquid through enclosed equipment for the production of solid tetrasodium-EDTA (100 percent concentration). This process also operates 24 hours per day throughout the year, supported by four shifts. One worker per shift samples the solution, and two workers per shift package the dry product. These workers are reasonably likely to be exposed to tetrasodium-EDTA.

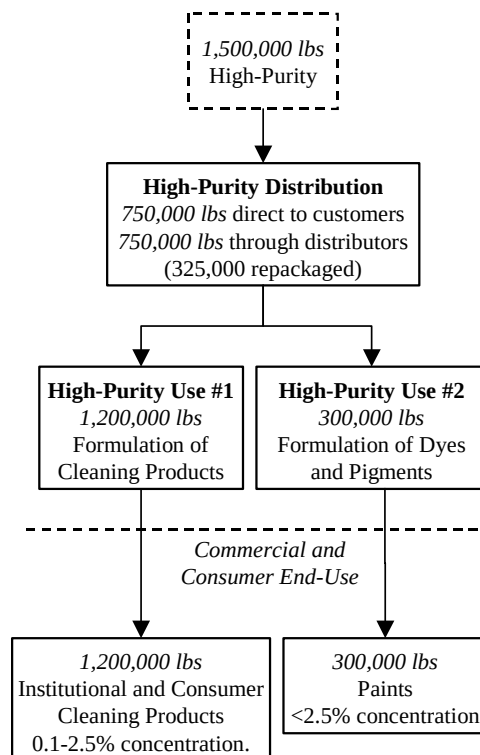


High-Purity Liquid Processing and Use

High-Purity Distribution: CCC sells 750,000 pounds of high-purity liquid to 20 wholesalers. The wholesalers repackage half (325,000 pounds) of this tetrasodium-EDTA and resell the other half. CCC estimates two workers are reasonably likely to be exposed at each wholesaler site. The remaining 750,000 pounds of high purity liquid are sold directly to customers. The high-purity liquid may either be sold through wholesalers or directly shipped to customers for both High-Purity Uses #1 and #2.

High-Purity Use#1: CCC estimates 1,200,000 pounds of high-purity liquid are used to formulate commercial and consumer cleaning products at concentrations of 0.1-2.5 percent tetrasodium-EDTA. CCC estimates the total number of formulator sites receiving tetrasodium-EDTA via direct shipment or distribution is less than 100 sites. Based on their experience with direct customers, approximately five workers per site are reasonably likely to be exposed to the high-purity liquid. Using their knowledge of similar customer sites, CCC assumes five workers per site are also reasonably likely to be exposed at the formulator sites that purchase tetrasodium-EDTA from distributors who, in turn, purchased tetrasodium-EDTA from CCC. While children may be exposed to the cleaning products, the products are not intended for use by or directly marketed to children.

High-Purity Use#2: The remaining 300,000 pounds of high-purity liquid are used to formulate synthetic dyes and pigments for paint formulation at concentrations less than 2.5 percent tetrasodium-EDTA. CCC estimates the total number of formulation sites via direct shipment or distribution to be less than 20 sites. Based on their experience with direct customers, approximately five workers per site are reasonably likely to be exposed to the high-purity liquid. Using their knowledge of other customer sites, CCC assumes five workers per site are also reasonably likely to be exposed at the formulator sites receiving tetrasodium-EDTA from distributors. While children may be exposed to the paints, the products are not intended for use by or directly marketed to children.

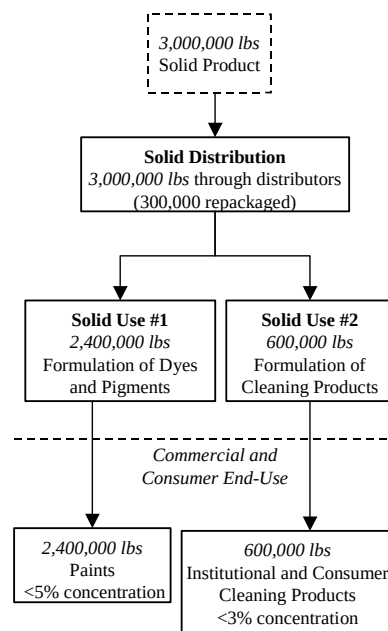


Solid Product Processing and Use

Solid Distribution: CCC sells the 3,000,000 pounds of solid product exclusively to wholesalers. Most of the product remains in the packaging as delivered to the wholesaler; however, CCC estimates 300,000 pounds of the solid product is repackaged by fewer than five wholesalers. For those wholesalers who do not repackage, worker exposure is not reasonably likely. The number of workers reasonably likely to be exposed to tetrasodium-EDTA while repackaging the dry product is not readily obtainable by CCC.

Solid Use#1: CCC estimates 2,400,000 pounds of the solid product is formulated into synthetic dyes and pigments for paint formulation at concentrations less than five percent tetrasodium-EDTA. CCC does not know the exact number of sites to which the solid product is distributed, but believes the number of sites is less than 500. CCC has determined the number of exposed workers per site is not readily obtainable. While children may be exposed to the paints, the products are not intended for use by or directly marketed to children.

Solid Use#2: The remaining 600,000 pounds of the solid product is formulated into commercial and consumer cleaning products at approximately 75 sites at concentrations less than three percent tetrasodium-EDTA. CCC has determined the number of workers per site reasonably likely to be exposed to the chemical is not readily obtainable. While children may be exposed to the cleaning products, the products are not intended for use by or directly marketed to children.



Original Liquid Product Processing and Use

CCC Terminals: CCC operates five regional terminal sites to supply customers in different geographic regions. Approximately 9,000,000 pounds of the liquid is shipped from the manufacturing site to the terminals where two workers per shift per site (two shifts) are reasonably likely to be exposed during transfer and repackaging activities. The remaining 3,000,000 pounds is shipped directly to customers.

Liquid Wholesalers: CCC sells 4,000,000 pounds of original liquid to the same 20 wholesalers of the high-purity liquid. The wholesalers repack nearly all of this volume, with two workers per site reasonably likely to be exposed to tetrasodium-EDTA. The wholesalers sell the entire volume for Liquid Use #1.

Liquid Use #1: The wholesalers sell 4,000,000 pounds to approximately 500 formulators of commercial and consumer cleaning products. Using best professional judgment, CCC estimates three workers or less are reasonably likely to be exposed per site. Tetrasodium-EDTA may be present at concentrations ranging from 0.1 to 5 percent in the final commercial and consumer products. While children may be exposed to the cleaning products, the products are not intended for use by or directly marketed to children.

Liquid Use#2: CCC sells 4,800,000 pounds to 25 pulp and paper mill facilities where the substance stabilizes peroxide during the bleaching process. CCC estimates three workers per site per shift are reasonably likely to be exposed at less than five percent concentration. Four shifts support continuous operations.

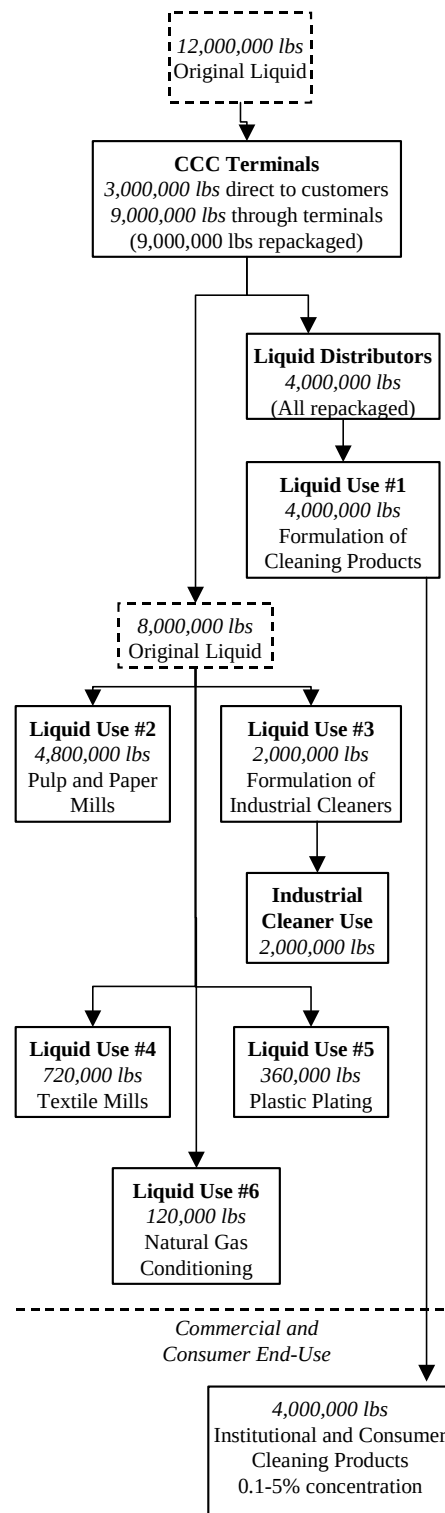
Liquid Use#3: CCC sells 2,000,000 pounds to approximately 50 formulators of industrial cleaners. Three workers per site are reasonably likely to be exposed to the chemical at each formulator site. Tetrasodium-EDTA may be present at concentrations up to five percent in the industrial cleaner.

Industrial Cleaner Use: It is unknown how or by whom the industrial cleaners are used, and CCC has determined that this information is not readily obtainable.

Liquid Use #4: CCC sells 720,000 pounds of tetrasodium-EDTA to 10 textile manufacturing sites where the substance is used to stabilize peroxide during the bleaching process. CCC estimates three workers per site per shift are reasonably likely to be exposed to tetrasodium-EDTA. Four shifts support continuous operations.

Liquid Use #5: CCC sells 360,000 pounds of tetrasodium-EDTA to four plastic plating facilities where the substance is used to chelate metal ions. Two workers per site per shift are reasonably likely to be exposed to the chemical. Four shifts are assumed to support continuous operations.

Liquid Use #6: The remaining 120,000 pounds are sold to five natural gas conditioning sites where tetrasodium-EDTA is used to oxidize sulfides. Two workers per site per shift are reasonably likely to be exposed to tetrasodium-EDTA at less than one percent concentration. Four shifts of workers support continuous operations.



Determining the Reporting Requirements:

- Step I: Tetrasodium-EDTA is listed in the TSCA Inventory. Persons manufacturing tetrasodium-EDTA do not qualify for an exemption from IUR requirements because this substance is not a polymer, microorganism, a naturally-occurring substance, or one of certain forms of natural gas. (See 40 CFR 710.46(a))
- Step II: CCC manufactures 25,000 pounds or more of tetrasodium-EDTA. CCC does not qualify for an exemption as a small manufacturer because the company had total sales of \$40 million or more during calendar year 2005. CCC does not qualify for any exemption from IUR requirements found in 40 CFR 710.50 with respect to tetrasodium-EDTA because this chemical was not imported as part of an article, nor was it used solely for research and development, nor was it manufactured as an impurity, non-isolated intermediate, or byproduct which was not used for a commercial purpose.
- Step III: CCC manufactures 300,000 pounds or more of tetrasodium-EDTA. Tetrasodium-EDTA is not included in the list of substances termed petroleum process streams in 40 CFR 710.46(b)(1) nor is this substance included in the list of specific exempted chemical substances in 40 CFR 710.46(b)(2). Tetrasodium-EDTA is not an inorganic chemical substance as defined in 40 CFR 710.46(b)(3).
- Result: CCC should complete and submit Parts I, II, and III of Form U for tetrasodium-EDTA.

Table K-1 illustrates the number of the number of workers reasonably likely to be exposed during production of tetrasodium-EDTA.

Table K-1. Number of Workers Reasonably Likely to be Exposed for Case Study K

Activity	Number of Exposed Workers per Shift	Number of Shifts	Total Number of Exposed Workers
Manufacturing (sampling and transfers)	2	4	8
High-Purity Liquid (operations)	2	4	8
Solid Production (sampling and packaging)	3	4	12
Total			28

Completing Form U:

Because Part I is completed in the same manner as in a previous case study, it is omitted here.

Part II: Section A. Chemical Identification

SECTION A. CHEMICAL IDENTIFICATION				CBI*	
2.A.1	Chemical Identifying Number	64-02-8	2.A.2	ID Code	C
2.A.3	Chemical Name	Glycine, N,N'-1,2-ethanediylbis[N-(carboxymethyl)-, tetrasodium salt			

Basis/Rationale:

2.A.1 - The CAS number for tetrasodium-EDTA is 64-02-8.

2.A.2 - Code for CAS Number.

2.A.3 - The Chemical Abstracts (CA) Index/Preferred name for tetrasodium-EDTA is glycine, N,N'-1,2-ethanediylbis[N-(carboxymethyl)-, tetrasodium salt.

Part II: Section B. Manufacturing Information

SECTION B. MANUFACTURING INFORMATION									
			CBI			a. Physical Form		b. Percent of Production Volume in Each Physical Form	
2.B.1	Company Information								
2.B.2	Site Information [†]								
2.B.3	Technical Contact Information					Check All That Apply	CBI	Percent	CBI
2.B.4	Site Limited (Y/N)	N		2.B.10	Dry Powder	X		10	
2.B.5	Activity (Check all that apply)	☒ Manufacture ☐ Import		2.B.11	Pellets or Large Crystals				
2.B.6	Manufactured Production Volume (LB)	31,500,000		2.B.12	Water or Solvent Wet Solid				
2.B.7	Imported Production Volume (LB)	0		2.B.13	Other Solid				
2.B.8	Number of Workers (code)	W3		2.B.14	Gas or Vapor				
2.B.9	Maximum Concentration (code)	M5		2.B.15	Liquid	X		90	

Block Explanation:

2.B.4 - Tetrasodium-EDTA is shipped off-site; therefore, it is not site limited.

2.B.5 - Tetrasodium-EDTA is manufactured domestically at CCC. It is not imported.

2.B.6 - CCC manufactures 31.5 million pounds of tetrasodium-EDTA which includes the 30 million pounds produced in the manufacturing process and the 1.5 million pounds of high-purity tetrasodium-EDTA reconverted after being transformed into another chemical substance. Under TSCA, any change in the molecular identity of a chemical substance results in the production of a different chemical substance.

2.B.8 - W3 - At least 25 but less than 50. CCC estimates 28 workers are reasonably likely to be exposed during the production of tetrasodium-EDTA. See Table K-1.

2.B.9 - M5 - Greater than 90% by weight. Even though most of the PV is shipped off-site at 40% concentration, the solid product is shipped at 100% concentration; therefore, the maximum concentration leaving the site is 100%.

Completing Form U: (Continued)

2.B.10 - CCC ships 10% of the PV as a dry powder (3,000,000 lbs ÷ 31,500,000 total lbs = 9.5%; round to the nearest 10%).

2.B.15 - CCC ships 90% of the PV as a liquid (28,500,000 lbs ÷ 31,500,000 total lbs = 90.5%; round to the nearest 10%).

Part III: Section A. Industrial Processing and Use Information

This case study details 16 different industrial processing and use operations, and some of these operations should be aggregated before completing Form U. The following table summarizes production volume and corresponding codes, number of sites, and number of workers for each industrial processing and use operation.

Table K-2. List of All Industrial Processing and Use Operations for Case Study M

Process/Use Description	Amount (pounds)	Type of Process or Use Code	NAICS Code	IFC Code	Number of Sites	Number of Workers
Intermediate for Other Chemicals	15,000,000	PC	32519	U16	1	0
High-Purity Wholesalers	325,000	PK	42469	U33	20	40
High-Purity Use #1	1,200,000	PF	32561	U09	<100	<500
High-Purity Use #2	300,000	PF	32562	U09	20	100
Solid Wholesalers	300,000	PK	42469	U33	5	NRO
Solid Use #1	2,400,000	PF	32562	U09	<500	NRO
Solid Use #2	600,000	PF	32561	U09	75	NRO
CCC Terminals	9,000,000	PK	42469	U33	5	20
Liquid Wholesalers	4,000,000	PK	42469	U33	20	40
Liquid Use #1	4,000,000	PF	32561	U09 U30	<100	<500
Liquid Use #2	4,800,000	U	32212	U30	25	300
Liquid Use #3	2,000,000	PF	32561	U09	50	150
Industrial Cleaner Use	2,000,000	U	NRO	U09	NRO	NRO
Liquid Use #4	720,000	U	31331	U30	10	120
Liquid Use #5	360,000	U	32619	U09	4	32
Liquid Use #6	120,000	X	X	X	X	X

Only the amount repackaged should be reported for CCC Terminals. Likewise, the amount of liquid and high-purity solid repackaged by wholesalers should be reported in the industrial processing and use section.

Completing Form U: (Continued)**Data Aggregation**

For identical combinations of Process or Use, NAICS, and IFC codes in Table M-2, the production volume, number of sites, and number of workers should be combined as shown in the following tables. The aggregated totals of each unique code combination should be entered on Form U.

Table K-3. Aggregation of PK, NAICS 42469, and IFC U33

Process/Use Description	Amount, pounds	Sites		Workers	
		Number	Code	Number	Code
High-Purity Wholesalers	325,000	20		40	
Solid Wholesalers	300,000	<5		NRO	
CCC Terminals	9,000,000	5		20	
Liquid Wholesalers	4,000,000	20		40	
Total	13,625,000	25-30*	S3	>100*	W5

* The High-Purity Wholesalers are the same as the Liquid Wholesalers (i.e. the high-purity liquid is repackaged at the same sites as the original liquid). Therefore, the sites were not double counted when computing the total number of sites. However, different workers are associated with repackaging the two liquids. CCC estimates 2 workers per site are reasonably likely to be exposed to high-purity liquid and 2 workers/site are reasonably likely to be exposed to the original liquid. CCC determined the number of workers exposed at the Solid Wholesalers is not readily obtainable (NRO). However, adding the workers for the other uses indicates there are at least 100 workers exposed during the other repackaging operations. The code W5 (at least 100 but less than 500 workers) should be entered because readily obtainable information indicates that at least 100 workers are reasonably likely to be exposed at the <5 Solid Wholesalers while repackaging the solid tetrasodium-EDTA.

Table K-4. Aggregation of PF, NAICS 32561, and IFC U09

Process/Use Description	Amount, pounds	Sites		Workers	
		Number	Code	Number	Code
High-Purity Use #1	1,200,000	<100		<500	
Solid Use #2	600,000	75		NRO	
Liquid Use #1	4,000,000	500		<1500	
Liquid Use #3	2,000,000	50		150	
Total	7,800,000	<725	S5	~2150*	W7

*While the number of workers reasonably likely to be exposed at the Solid Use #2 is not readily obtainable (NRO), the code W7 (at least 1,000 but fewer than 10,000 workers) should be entered because readily obtainable information indicates that at least 2,150 workers are reasonably likely to be exposed.

Completing Form U: (Continued)**Table K-5. Aggregation of PF, NAICS 32562, and IFC U09**

Process/Use Description	Amount, pounds	Sites		Workers	
		Number	Code	Number	Code
High-Purity Use #2	300.000	20		100	
Solid Use #1	2,400.000	<500		NRO	
Total	2,700.000	<500	S5	NRO	NRO*

*In this case, CCC does not have sufficient information about the number of sites and number of workers per site to determine the appropriate range code for the number of workers reasonably likely to be exposed to tetrasodium-EDTA. Therefore, CCC has determined that this information is not readily obtainable (NRO).

Note: Table K-5 represents the formulation of tetrasodium-EDTA into personal care products. Some personal care products may be used in applications covered by TSCA, while other products may not be covered by TSCA (e.g., cosmetic applications). Non-TSCA uses do not have to be reported on Form U; however, if based on readily obtainable information the final uses and applications are believed to be regulated by TSCA, then CCC should include these uses of tetrasodium-EDTA in its IUR submission.

The information to be entered in Part III, Section A of Form U following aggregation of activities with identical process or use, NAICS, and industrial function category codes is shown below.

PART III. PROCESSING AND USE INFORMATION

Complete Part III, Sections A and B **only** if the production volume noted in Block 2.B.5 is greater than or equal to 300,000 lb/year.

SECTION A. INDUSTRIAL PROCESSING AND USE DATA									N/A			
	a. Type of Process or Use		b. (5-digit) NAICS Code		c. Industrial Function Category		d. Percent Production Volume		e. Number of Sites		f. Number of Workers	
	Code	CBI	Code	CBI	Code	CBI	Percent	CBI	Code	CBI	Code	CBI
3.A.1	PC		32519		U16		50		S1		W1	
3.A.2	PK		42469		U33		40		S3		W5	
3.A.3	PF		32561		U09		20		S5		W7	
3.A.4	PF		32562		U09		10		S5		NRO	
3.A.5	U		32212		U30		20		S3		W5	
3.A.6	U		NRO		U09		10		NRO		NRO	
3.A.7	U		31331		U30		2		S2		W5	
3.A.8	U		32619		U09		1		S1		W3	
3.A.9												
3.A.10												

While sixteen different industrial processes/uses were listed in Table K-3, only eight rows should be completed in Part III Section A of Form U. High-Purity Wholesalers, Solid Wholesalers, CCC Terminals, and Liquid Wholesalers should be aggregated and entered on one row, since they fall under the same process or use, NAICS, and IFC codes. Similarly, High-Purity Use #1, Solid Use #2, Liquid Use #1, and Liquid Use #3 should be aggregated and entered on one row; and High-Purity Use #2 and Solid Use #1 should be aggregated and entered on one row.

Completing Form U: (Continued)

Part III: Section B. Commercial and Consumer End-Use Information

SECTION B. COMMERCIAL AND CONSUMER USE DATA						N/A		
	a. Commercial and Consumer Product Category		b. Used in Products Intended for Children		c. Percent Production Volume associated with each category		d. Maximum Concentration associated with each category	
	Code	CBI	Y/N/NRO	CBI	Percent	CBI	Code	CBI
3.B.1	C15		N		20		M2	
3.B.2	C17		NRO		10		M2	
3.B.3								
3.B.4								
3.B.5								

Basis/Rationale:

3.B.1 - Represents the sum of 1,200,000 pounds for High-Purity Use #1 and 600,000 pounds from Solid Use #2 and 4,000,000 pounds from Liquid Use #1 for a total of 5,800,000 pounds of tetrasodium-EDTA formulated into polishes and sanitation goods.

- C15 - Polishes and sanitation goods.
- N - While children may be exposed to the cleaning products, it is not intended to be used by children up to the age of 14.
- 20% - $5,800,000 \text{ lbs} \div 31,500,000 \text{ lbs} = 18\%$; round to 20%.
- M2 - From 1% to 30% by weight. The cleaning products contain less than 5% by weight of tetrasodium-EDTA.

3.B.2 - Represents the sum of 300,000 pounds for High-Purity Use #2 and 2,400,000 pounds from Solid Use #1 for a total of 2,700,000 pounds of tetrasodium-EDTA formulated into soaps and detergents for commercial use.

- C17 - Soaps and detergents.
- NRO - While some personal care products are intended for use by children, CCC does not know if their chemical is formulated into these products.
- 10% - $2,700,000 \text{ lbs} \div 31,500,000 \text{ lbs} = 8.6\%$; round to 10%.
- M2 - From 1% to 30% by weight. The cleaning products contain less than 5% by weight of tetrasodium-EDTA.

Form U – Case Study K

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PART II. MANUFACTURING INFORMATION

SECTION A. CHEMICAL IDENTIFICATION				CBI*	
2.A.1	Chemical Identifying Number	64-02-8	2.A.2	ID Code	C
2.A.3	Chemical Name	Glycine, N,N'-1,2-ethanediylbis[N-(carboxymethyl)-,tetrasodium salt			

SECTION B. MANUFACTURING INFORMATION

		CBI			a. Physical Form		b. Percent of Production Volume in Each Physical Form	
2.B.1	Company Information							
2.B.2	Site Information†							
2.B.3	Technical Contact Information				Check All That Apply	CBI	Percent	CBI
2.B.4	Site Limited (Y/N)	N	2.B.10	Dry Powder	X		10	
2.B.5	Activity (Check all that apply)	☒ Manufacture ☐ Import	2.B.11	Pellets or Large Crystals				
2.B.6	Manufactured Production Volume (LB)	31,500,000	2.B.12	Water or Solvent Wet Solid				
2.B.7	Imported Production Volume (LB)	0	2.B.13	Other Solid				
2.B.8	Number of Workers (code)	W3	2.B.14	Gas or Vapor				
2.B.9	Maximum Concentration (code)	M5	2.B.15	Liquid	X		90	

PART III. PROCESSING AND USE INFORMATION

Complete Part III, Sections A and B if the sum of the production volumes noted in Blocks 2.B.6 and 2.B.7 is 300,000 pounds or more.

SECTION A. INDUSTRIAL PROCESSING AND USE DATA									N/A			
	a. Type of Process or Use		b. (5-digit) NAICS Code		c. Industrial Function Category		d. Percent Production Volume		e. Number of Sites		f. Number of Workers	
	Code	CBI	Code	CBI	Code	CBI	Percent	CBI	Code	CBI	Code	CBI
3.A.1	PC		32519		U16		50		S1		W1	
3.A.2	PK		42469		U33		40		S3		W5	
3.A.3	PF		32561		U09		20		S5		W7	
3.A.4	PF		32562		U09		10		S5		NRO	
3.A.5	U		32212		U30		20		S3		W5	
3.A.6	U		NRO		U09		10		NRO		NRO	
3.A.7	U		31331		U30		2		S2		W5	
3.A.8	U		32619		U09		1		S1		W3	
3.A.9												
3.A.10												

SECTION B. COMMERCIAL AND CONSUMER USE DATA							N/A		X	
	a. Commercial and Consumer Product Category		b. Used in Products Intended for Children		c. Percent Production Volume associated with each category		d. Maximum Concentration associated with each category			
	Code	CBI	Y/N/NRO	CBI	Percent	CBI	Code	CBI		
3.B.1	C15		N		20		M2			
3.B.2	C17		NRO		10		M2			
3.B.3										
3.B.4										
3.B.5										
3.B.6										
3.B.7										
3.B.8										
3.B.9										
3.B.10										

†Substantiation required for CBI claims on chemical identity and site information.