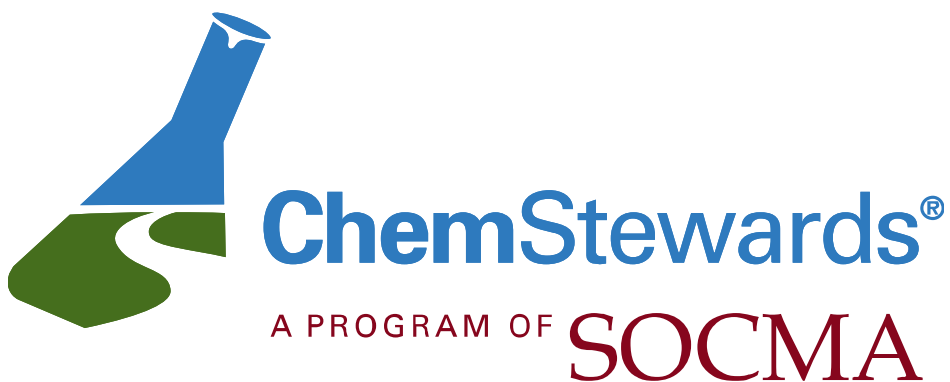


**ChemStewards[®]
Performance Metrics
Guidance Document**



Acknowledgements

SOCMA thanks its members for assisting with the development of this resource guide and contributing materials.

The following companies participated on SOCMA's first metrics' working group:

Cambrex Corporation
Chevron Phillips Chemical Company
Dixie Chemical Co. Inc.
ESCO Company Limited Partnership
Morflex Inc.
ProChem Chemicals Inc.
Syngenta Crop Protection Inc.

The following companies participated on SOCMA's metrics' guidance team:

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Borregaard Synthesis, Inc.
Cambrex Corporation
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International Specialty Products
Lubrizol Corporation
RÜTGERS Organics Corporation
Sun Chemical Corporation Colors Group
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I. Introduction

SOCMA's Performance Improvement program, ChemStewards[®], includes public reporting of performance measurements, which for some of the metrics began in 2005. Other metrics were reported publicly for the first time in 2007 and 2012. Despite the varying schedules for public reporting of the metrics, all data submitted is from the previous year.

In 2008, all metric parameters were displayed to the public on an aggregate basis on SOCMA's website. On the members-only web pages, metrics are reported as a company-by-company basis, as per member request. The intention of the public reporting is to enhance transparency and company accountability. Trending of the data provides benchmarking and drives improvement in performance for our member companies.

This guidance document should provide the necessary instructions for reporting all of the ChemStewards' required environmental, health, safety and security (EHS&S) metrics. If you have any questions, or need further information, please contact SOCMA's ChemStewards Department at 202-721-4100 or by email ChemStewards@socma.com.

II. Data Management System

This document provides guidance and forms for calculating the metrics data. Members will report all metrics data through an electronic reporting system accessible via the Internet at <http://metrics.socma.org>.

III. Definition of Terms

BTU's consumed: Total energy, in British Thermal Units (BTUs), consumed at SOCMA member company facilities.

Days Away from Work Incident Rate: Defined by OSHA as the number of lost workday incidents for each 100 full-time employees per year, based on 2,000 hours worked per employee per year. The calculation is as follows:

$$\text{Days Away from Work Incident Rate} = \frac{\# \text{ of Cases with Days Away from Work} \times 200,000 \text{ Employee Hours}}{\text{Number of Employee Hours Worked}}$$

Employees: All persons on the company or corporation's payroll. Under current OSHA rules, some contract employees are considered to be company employees for record keeping purposes and are to be included in the company's OSHA 300 log. These contractor data should also be included in the company's occupational injury and illness reporting and in reporting of the total number of employees to SOCMA.

EHS&S Training System: An EHS&S training system refers to the entire process of the 1). Identification of all risk-based and regulatory EHS&S training requisites, 2). Determination of the training goals against those needs, 3). Accomplishing required training, 4). Evaluating the competency and effectiveness of the training program at the conclusion of the required training, and

5). Performing an annual management review of the required training program [execution against the identified needs and goals].

Pounds of Hazardous Waste: A solid waste, or combination of solid wastes, which because of its quantity, concentration, or physical or chemical characteristics may cause harm to human health or the environment when improperly treated, stored, transported, or disposed of, or otherwise managed. Hazardous waste is consistent with the EPA federal hazardous waste definition. The pounds that are reported are the pounds of hazardous waste generated during the calendar year.

Process Safety Incident: An incident is reportable if it meets all three of the following tests: 1) Chemical/process involvement, 2) Reporting threshold, and 3) Location (Each is described in detail in the instructions).

Production, pounds: The pounds of material produced at North American Industry Classification System (NAICS) 325 facilities in the United States. This includes all pounds of NAICS 325 products, including intra-company transfers of products with inherent market value. This number excludes wastes and recycled materials. Production should be counted for that portion of a corporation or company that is used to determine SOCMA dues. Joint venture production is reported by the operating company.

Product Stewardship: Product Stewardship refers to the responsible management of the EHS&S aspects of a product along the supply chain which promotes communication and involvement of suppliers, customers, and others in the management of EHS&S issues such as safe transport, storage, use, and disposal.

Recordable Injury Rate: Defined by OSHA as the number of recordable incidents for each 100 full-time employees per year, based on 2,000 hours worked per employee per year. The calculation is as follows:

$$\text{Recordable Incident Rate} = \frac{\# \text{ of Recordable Cases} \times 200,000 \text{ employee hours}}{\text{Number of employee hours worked}}$$

Solid Waste: Garbage, refuse, sludge, or other discarded material (including solids, semisolids, liquids, and contained gaseous materials).

TRI Releases: Releases of chemicals listed and reported to EPA under Superfund Amendments Reauthorization Act (SARA) Section 313. Releases will include air, land, and water releases as measured and reported by individual member company on EPA's SARA 313 report. Reporting will not include underground injection or, to avoid double-counting of emissions, off-site transfers for disposal.

SOCMA EHS&S Metrics

Metric 1 - TRI Releases (Tier 1, 2 and 3 Metric)

Measurement:

Pounds of Toxic Release Inventory (TRI) releases to air, land, and water (reported separately) for each member company.

Key Definitions:

TRI releases: Releases of chemicals listed and reported to EPA under Superfund Amendments Reauthorization Act (SARA) Section 313. Releases will include air, land, and water releases as measured and reported by individual member company on EPA's SARA 313 report. Reporting will not include underground injection or, to avoid double-counting of emissions, off-site transfers for disposal.

Deadline for Reporting:

ChemStewards Department will specify the due date. All data is from the previous year.

Date of Public Reporting:

SOCMA began publicly reporting on total air, total water, and total land releases in 2005. Data will continue to be publicly reported as an aggregate on the SOCMA website and on a company by company basis on the member's side of the website.

SOCMA EHS&S Metrics

Metric 2 - Process Safety Incidents (Tier 1, 2 and 3 Metric)

Measurement:

Number of Process Safety Incidents (reported per facility).

Key Definitions:

Process Safety Incident: An incident is reportable if it meets all three of the following tests: 1) chemical/process involvement, 2) reporting threshold, and 3) location (each is described in detail below).

Chemical/Process Involvement Test

An incident satisfies *the chemical/process involvement test* if the following is true:

- ☐ A chemical or chemical process must have been directly involved in the damage produced. For this purpose, the term "process" is used broadly to comprise the equipment and technology needed for chemical production, including but not limited to: reactors, tanks, piping, boilers, cooling towers, refrigeration systems, etc. An incident with no direct chemical or process involvement [e.g., an office building fire] is not reportable even if the building is on the plant site.

An employee injury that occurs at a process location, but in which the process plays no direct part, should **NOT** be reported. The intent of this criterion is to identify those incidents that are related to process safety, as distinguished from personnel safety incidents that are not process-related. For example, a fall from a ladder resulting in a lost workday injury is not reportable just because it occurred at a process unit. However, if the fall resulted from a chemical release (or caused a release to occur), then the incident is reportable.

Reporting Threshold Test

An incident satisfies the reporting threshold test if **at least one** of the following is true:

- **Fire:** There is a fire that causes damage exceeding \$25,000, where the damage is defined as replacement cost for property or equipment on-site and off-site that is damaged in the incident. Business interruption loss, product loss, and environmental clean-up costs are not to be included;
- Or
- **Explosion:** There is an explosion that causes damage exceeding \$25,000, where damage is defined as replacement cost for property or equipment on-site and off-site that is damaged in the incident. Business interruption loss, product loss, and environmental clean-up costs are not included. For this purpose, the term "explosion" includes both detonations and overpressures;
- Or
- **Chemical Release:** There is an episodic loss of containment of greater than the reportable threshold quantity of material listed in 40 CFR 355.40 Appendix A (See **Note 1** at the end of

this section), as effective on the date of the chemical release, or an episodic loss of containment of greater than 5,000 lbs of flammable material (**Notes 2, 3, 4**);

Or

- **Injury/Fatality:**

- There is a fire, explosion, or chemical release that does not trigger the thresholds above, but that involves one or more fatalities or serious injuries. A serious injury is defined for this purpose as a "days away from work injury or illness case " (for either the facility's or a contractor's employees) for OSHA record keeping, or that which involves overnight hospitalization for persons other than employees or contractors; or
- There are one or more days away from work case or fatality of an employee or contractor that directly results from the release of energy or material from a process, including chemical storage, while the process is not in normal operation. This includes operations such as pressure testing, cleaning, and maintenance.

Examples of days away from work or fatality cases that would be reportable may include but are not limited to, a burn from steam released during cleaning, a physical injury from a cap blown off by pressure during a pressure test, or a chemical burn from a spill while taking a sample or death resulting from a process incident.

Examples of days away from work or fatality cases that *would not be reportable* include a fall from an elevated work station while performing maintenance, a burn from a fire in a laboratory or office building, or a confined space asphyxiation. None of these cases is directly due to the release of energy or material from the process.

Notes:

1. The list of Extremely Hazardous Substances under 40 CFR 355.40 Appendix A is included in Appendix E. Please note that the *extremely hazardous* substances list at 40 CFR 355 (emergency planning and notification under CERCLA) is not the same as the *hazardous* substances list at 40 CFR 302 (reportable quantities and notification requirements for hazardous substances under CERCLA). Please check the list in Appendix E to be sure a chemical is supposed to be reported.
2. The 5,000 lbs of flammable material is the combined total of the release; it does not have to be all one material. The definition of flammable materials is based on OSHA regulations at 29 CFR 1910.106. Flammable materials that should be reported are those with flash points below 100 F (Class I). Flash point information can be found in NFPA 325 and in Material Safety Data Sheets (MSDS).
3. Episodic releases associated with a single initiating event should be considered a single incident.
4. Episodic releases specifically permitted by EPA or designated state agency are not reportable process safety incidents. In addition, releases that are part of normal, routine operations, e.g. NO_x formed by flaring, are not reportable.
5. Any chemical involvement which causes fire or explosion with damage of \$25,000 or a fatality or a serious injury would require reporting whether an RQ listed chemical or not.

Location Test

An incident satisfies *the location test* if the following is true:

- The incident occurs in production, distribution, storage, utilities, pilot plant or laboratory areas of a U.S. member company facility covered under SOCMA's performance improvement obligation. This includes tank farms, ancillary support areas (e.g., boiler houses and wastewater treatment plants), and distribution piping under control of the site. Transportation incidents are not covered unless they occur within the boundary of a member company's fixed facility.

All reportable incidents occurring at a location will be reported by the company that is responsible for operating that location. This applies to incidents that may occur in contractor work areas as well as other incidents. At tolling operations and multi-party sites, the company that operates the unit where the incident initiated should file the incident report.

Instructions for Member Company Reporting:

Member companies must report to SOCMA the data required by the reporting form shown in Appendix D. In addition, Appendix B provides a decision chart to assist in determining whether incidents are reportable or not.

Deadline for Reporting:

ChemStewards Department will specify the due date. All data is from the previous year.

Date of Public Reporting:

SOCMA began publicly reporting the number of process safety incidents in 2005. Data will continue to be publicly reported as an aggregate on the SOCMA website and on a company by company basis on the member's side of the website.

SOCMA EHS&S Metrics

Metric 3 - OSHA Recordable Incident Rates for Employees (Tier 1, 2 and 3 Metric)

Measurement:

OSHA Recordable Incident Rate

Key Definitions:

Employees: All persons on the company or corporation's payroll. Under current OSHA rules, some contract employees are considered to be company employees for record keeping purposes and are to be included in the company's OSHA 300 log. These contractor data should also be included in the company's occupational injury and illness reporting, and reporting of total number of employees to SOCMA.

Recordable Injury Rate: Defined by OSHA as the number of recordable incidents for each 100 full-time employees per year, based on 2,000 hours worked per employee per year. The calculation is as follows:

$$\text{Recordable Incident Rate} = \frac{\# \text{ of Recordable Cases} \times 200,000 \text{ employee hours}}{\text{Number of employee hours worked}}$$

Days Away from Work Incident Rate: Defined by OSHA as the number of lost workday incidents for each 100 full-time employees per year, based on 2,000 hours worked per employee per year. The calculation is as follows:

$$\text{Days Away from Work Incident Rate} = \frac{\# \text{ of Days Away from Work Cases} \times 200,000 \text{ employee hours}}{\text{Number of employee hours worked}}$$

Instructions for Member Company Reporting:

Companies are required by law (Department of Labor/Occupational Safety and Health Administration (OSHA)) to document the number of recordable and days away from work injury and illness cases that they experience on a worksite. The data required for this metric are based on the information that the member company tracks for OSHA recordkeeping purposes on an annual basis. Appendix F is a sample reporting forms for employee data. All criteria for classifying injuries, illnesses, and fatalities should be consistent with those prescribed in OSHA. Additional information regarding occupational injury and illness recordkeeping can be accessed at www.osha.gov/recordkeeping. Each company must provide only two completed forms for the entire company: one for employee data and one for contractor data.

The employee data required by the OIIR form for employees shown in Appendix F are self-explanatory, given the reference to the required OSHA 300 log entry.

Deadline for Reporting:

ChemStewards Department will specify the due date. All data is from the previous year.

Date of Public Reporting:

SOCMA began publicly reporting OSHA Recordable and Days Away from Work Incident Rate for employees in 2005. Data will continue to be publicly reported as an aggregate on the SOCMA website and on a company by company basis on the member's side of the website.

SOCMA EHS&S Metrics

Metric 4 - Energy Efficiency (Tier 2 and 3 Metric)

Measurement:

Energy efficiency, expressed as millions of BTU's consumed per millions of pounds of production, referenced to a base year.

Key Definitions:

BTU's consumed: Total energy, in British Thermal Units (BTUs), consumed at SOCMA member company facilities.

Production, in pounds: The pounds of material produced at North American Industry Classification System (NAICS) 325 facilities in the United States. This includes all pounds of NAICS 325 products, including intra-company transfers of products with inherent market value. This number excludes wastes and recycled materials. Production should be counted for that portion of a corporation or company that is used to determine SOCMA dues.

Instructions for Member Company Reporting:

Members should follow the reporting instructions included in Appendix G.

Deadline for Reporting:

ChemStewards Department will specify the due date. All data is from the previous year.

Date of Public Reporting:

SOCMA began publicly reporting data for each member company in 2007 for the calendar year 2006. Data will continue to be publicly reported as an aggregate on the SOCMA website and on a company by company basis on the member's side of the website.

SOCMA EHS&S Metrics

Metric 5 – Hazardous Waste Generation (Tier 2 and 3 Metric)

Measurement:

Pounds of hazardous waste generated per pound of production.

Key Definitions:

Pounds of Hazardous Waste: a solid waste or combination of solid wastes, which because of its quantity, concentration, or physical or chemical characteristics may cause harm to human health or the environment when improperly treated, stored, transported, or disposed of, or otherwise managed. Hazardous waste is consistent with the EPA federal hazardous waste definition. The pounds that are reported are the pounds of hazardous waste generated during the calendar year.

Production, in pounds: The pounds of material produced at North American Industry Classification System (NAICS) 325 facilities in the United States. This includes all pounds of NAICS 325 products, including intra-company transfers of products with inherent market value. This number excludes wastes and recycled materials. Production should be counted for that portion of a corporation or company that is used to determine SOCMA dues. Joint venture production is reported by the operating company.

Instructions for Member Company Reporting:

Companies are required by law by Environmental Protection Agency (EPA)'s Resource Conservation and Recovery Act (RCRA) to document the quantity of hazardous waste that each facility produces. The data required for this metric is the annual pounds of hazardous waste generated that a member company records for EPA recordkeeping on an annual basis. This data is reported through such vehicles including EPA's biennial report (8700-13A) for Large Quantity Generators, Toxic Release Inventory reporting, and a Uniform Hazardous Waste Manifest - EPA Form 8700-22 (note: a generator who transports, or offers for transportation, hazardous waste for off-site treatment, storage, or disposal must prepare a Uniform Hazardous Waste Manifest. The manifest is a multiple-copy tracking document for hazardous waste shipments that is required by DOT and EPA.)

For this metric, additional reporting instructions are included in Appendix H of this guidance document.

Deadline for Reporting:

ChemStewards Department will specify the due date. All data is from the previous year.

Date of Public Reporting:

SOCMA began publicly reporting data for each member company in 2007 for the calendar year 2006. Data will continue to be publicly reported as an aggregate on the SOCMA website and on a company by company basis on the member's side of the website.

EHS&S Metrics

Metric 6 – Training Metric (Tier 2 and 3 Metric)

Measurement:

Percentage of training elements implemented.

The training metric measures the development of a member's training system. This metric ties directly to the ChemStewards Core Principle that states; "*We will train employees in their environmental, health, safety and security responsibilities and promote involvement and accountability in these areas.*" As a Tier 2 and 3 metric, it focuses on implementation of a management system, in this case an EHS&S training system for enhanced performance beyond fundamentals and regulatory compliance. It measures success in implementing a continuous improvement cycle for employee training that builds upon a Plan - Do - Check - Act approach. When using this metric, the member company decides where it is in its development of an employee training management system at each of its sites. Member company training systems are designed to ensure that employees have the capability of meeting their EHS&S responsibilities and the system includes employee and other stakeholder input.

Key Definitions:

EHS&S Training System: An EHS&S training system refers to the entire process of planning to identify all risk-based and regulatory EHS&S training needs, establishing training goals against those needs, conducting training, checking competency and training effectiveness at the conclusion of training, and conducting periodic management reviews of training program execution against the identified needs and goals

Instructions for Member Company Reporting:

Members will report on a percentage of training activities completed based on the reporting instructions included in Appendix I.

Deadline for Reporting:

ChemStewards Department will specify the due date. All data is from the previous year.

Date of Public Reporting:

Data for the training metric was reported internally for each member company in 2007 for the calendar year 2006. Data will continue to be publicly reported as an aggregate on the SOCMA website and on a company by company basis on the member's side of the website.

SOCMA EHS&S Metrics

Metric 7 – Product Stewardship Metric (Tier 2 and 3 Metric)

Measurement:

Percentage of product stewardship elements implemented.

The product stewardship metric measures the development of a member's product stewardship system. This metric ties directly to the ChemStewards Core Principle that states; "*We will promote the concepts of product stewardship throughout a product's lifecycle.*" As a Tier 2 and 3 metric, it focuses on implementation of a product stewardship management system for enhanced performance beyond fundamentals and regulatory compliance. A product stewardship management system should identify goals for risk assessment (plan), risk reduction and communication (do), conducting internal audits and qualifying partners (check), and management reviews against goals and improvement plans if needed (act). The concept of risk assessment involves collecting and assessing information on products hazards and product use. Risk reduction may include implementing improved EHS&S handling procedures or instructions while risk communication involves identifying how and to whom information will be available along the supply chain and to interested parties. Partners that should be audited or qualified may include transporters and distributors. Product stewardship should use the normal business process. The member company decides where it is in its development of a product stewardship management system what for their products and processes. Member company product stewardship systems are designed to ensure that environmental, health, safety and security (EHS&S) protection is made an integral part of designing, manufacturing, supplying and recycling or disposing of products.

Key Definitions:

Product Stewardship: Product Stewardship refers to the responsible management of the EHS&S aspects of a product along the supply chain which promotes communication and involvement of suppliers, customers, and others in the management of EHS&S issues such as safe transport, storage, use, and disposal.

Instructions for Member Company Reporting:

Members will report on a percentage of product stewardship activities completed based on the reporting instructions included in Appendix J.

Deadline for Reporting:

ChemStewards Department will specify the due date. All data is from the previous year.

Date of Public Reporting:

Data for the product stewardship metric was reported internally for each member company in 2007 for the calendar year 2006. Data will continue to be publicly reported as an aggregate on the SOCMA website and on a company by company basis on the member's side of the website.

SOCMA EHS&S Metrics

Metric 8 - Green House Gas Metric (Tier 1, 2 and 3 Metric)

Measurement:

Amount of greenhouse gases emitted.

Greenhouse Gases (GHG) are any gas that absorbs infrared radiation in the atmosphere. Greenhouse gases include, but are not limited to, water vapor, carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), chlorofluorocarbons (CFCs), hydrochlorofluorocarbons (HCFCs), ozone (O₃), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF₆). The greenhouse gas equivalencies calculator can not only help with compiling data, but also in communicating a greenhouse gas reduction strategy, reduction targets, or other initiatives aimed at reducing greenhouse gas emissions. There are two options for entering reduction data into this calculator.

Option 1: If You Don't Have Emissions Data

1. If you are starting with data in units of "gallons of gasoline consumed," "kilowatt-hours of electricity," "therms of natural gas," or "passenger vehicles per year" instead of a quantity of emissions of specific greenhouse gases, use this option.
2. Enter a quantity and pick the desired unit
3. If you are entering kilowatt-hours of electricity, please be sure to read the caveats and explanations on the [EPA Calculations and Reference page](#).
4. Please note that these estimates are approximate and should not be used for emission inventory or formal carbon footprinting exercises.

****This calculator uses an eGRID non-baseload national average emissions rate when calculating "kilowatt-hours of electricity" to "carbon dioxide equivalent."**

Option 2: If You Already Know the Quantity of Emissions: If you have already estimated the quantity of emissions (e.g., metric tons of carbon dioxide equivalent), you can input the amount of emissions and select the appropriate units for the corresponding greenhouse gas type.

Instructions for Member Company Reporting:

Members will report their grand total of CO₂ Emissions in either metric tons, kilograms, pounds or tons. They will indicate their method for reporting GHG Emissions in either emissions or energy consumption.

Deadline for Reporting:

ChemStewards Department will specify the due date. All data is from the previous year.

Date of Public Reporting:

Data will continue to be publicly reported as an aggregate on the SOCMA website and on a company by company basis on the member's side of the website.

Appendix A – Toxic Release Inventory (TRI) Reporting Form

Facility List for SOCMA TRI Reporting

Please use this form and the following slides to *assist* you in documenting your TRI data for the year.

For each facility, provide the TRI identification code, facility name and facility location (including the state). Following the TRI Chart below, please refer to the slide show on Toxic Release Inventory if help is needed in acquiring the TRI data online.

Facility List (attach additional sheets, if necessary)

TRI Facility ID	Facility Name	Location	State

Toxic Release Inventory

Step by step presentation on how to retrieve TRI data from the EPA website

1850 M Street NW
Suite 700
Washington, DC 20036-5810
(202) 721-4100 Ph
(202) 296-8120 Fax
www.socma.org

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Do you need to check a facility's TRI data on the EPA website?

1. Start by going here:

<http://www.epa.gov/triexplorer/>

The screenshot shows the EPA TRI Explorer website. At the top is the EPA logo and navigation links: LEARN THE ISSUES | SCIENCE & TECHNOLOGY | LAWS & REGULATIONS | ABOUT EPA. Below this is the 'TRI Explorer' header and a breadcrumb trail: You are here: EPA Home > TRI > TRI Explorer > Release Reports > Release Chemical Report. The main section is titled 'Release Reports' and contains tabs for 'Facility Reports', 'Chemical Reports', 'State/Regional Reports', and 'Global Reports'. Under 'Chemical Reports', there are sub-tabs for 'Chemicals', 'Facilities', 'Federal Facilities', 'Toxics', and 'Groups'. The 'Release Chemical Report' sub-tab is selected. Below this is a 'Release Chemical Report' section with a 'Year of Data' dropdown set to '2010'. There are sections for 'Geographic Location' (All of United States), 'Chemical' (All chemicals), 'Industry' (All Industries), and 'Data Set' (This default is 2010 National Release Inventory (NRI)). On the right, there are checkboxes for 'Report columns to include', with 'Total On-site Disposal or Other Releases' checked. Below this are checkboxes for 'On-site Disposal or Other Releases' (Class 1 Metals, RCRA Subtitle C Landfills, and Other On-site Landfills) and 'Total Off-site Disposal or Other Releases' (Off-site Disposal or Other Releases, RCRA Subtitle C Landfills, and Other Landfills). At the bottom, there are checkboxes for 'Off-site Disposal or Other Releases' (Off-site Disposal or Other Releases, RCRA Subtitle C Landfills, and Other Landfills) and 'Off-site Disposal or Other Releases' (Off-site Disposal or Other Releases, RCRA Subtitle C Landfills, and Other Landfills). A 'Generate Report' button is at the bottom right.

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2. Click on Facility on top

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TRI Explorer
You are here: EPA Home > TRI > TRI Explorer > Release Reports > Release Facility Report

Release Reports

Facility Reports | Release Reports | Waste Transfer Reports | Waste Quantity Reports

Chemical | **Facility** | Federal Facility | Trends | Geog

Release Facility Report

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Year of Data 2013

Geographic Location All of United States

Chemical All chemicals

Industry All Industries

Data Set The default is 2013 dataset released March 2015.
☐ Select 2012 National Analysis dataset released October 2014 (Updated Nov 24, 2014)
☐ Select 2012 National Analysis dataset released to the public in November 2013

Report columns to include

☐ TRI ID
☐ Number of Forms
☐ Number of Forms As (starting 1995)
☐ Longitude/Latitude

☒ **Total On-site Disposal or Other Releases**
 Details
☐ On-Site Disposal to Class I Wells, RCRA Subtitle C Landfills, and Other On-Site Landfills
☐ Other On-Site Disposal or Other Releases

☒ **Total Off-site Disposal or Other Releases**
 Details
☐ Off-Site Disposal to Underground Injection Wells, RCRA Subtitle C Landfills, and Other Landfills
☐ Other Off-Site Disposal or Other Releases

☒ **Total On- and Off-site Disposal or Other Releases**

[Generate Report](#)

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3. Select year and click Geographic Location.
Select "Enter a zip code"

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TRI Explorer
You are here: EPA Home > TRI > TRI Explorer > Release Reports > Release Facility Report

Release Reports

Facility Reports | Release Reports | Waste Transfer Reports | Waste Quantity Reports

Chemical | **Facility** | Federal Facility | Trends | Geog

Release Facility Report

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Year of Data 2013

Geographic Location Enter a zip code

Chemical All chemicals

Industry All Industries

Data Set The default is 2013 dataset released March 2015.
☐ Select 2012 National Analysis dataset released October 2014 (Updated Nov 24, 2014)
☐ Select 2012 National Analysis dataset released to the public in November 2013

Report columns to include

☐ TRI ID
☐ Number of Forms
☐ Number of Forms As (starting 1995)
☐ Longitude/Latitude

☒ **Total On-site Disposal or Other Releases**
 Details
☐ On-Site Disposal to Class I Wells, RCRA Subtitle C Landfills, and Other On-Site Landfills
☐ Other On-Site Disposal or Other Releases

☒ **Total Off-site Disposal or Other Releases**
 Details
☐ Off-Site Disposal to Underground Injection Wells, RCRA Subtitle C Landfills, and Other Landfills
☐ Other Off-Site Disposal or Other Releases

☒ **Total On- and Off-site Disposal or Other Releases**

[Generate Report](#)

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4. Enter a zip code and hit "Generate Report"

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5. Click the name of the member's facility you are looking for

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6. Scroll Down and click all data.



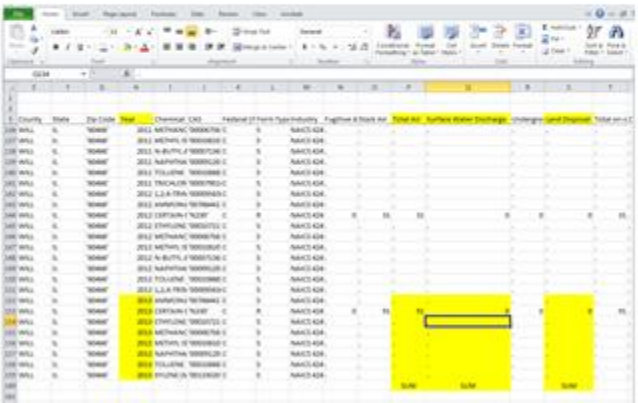
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7. Open the Excel File, Select current year and compute for the sum of these categories: Total Air, Surface Water Discharge and Land Disposal.



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Questions?

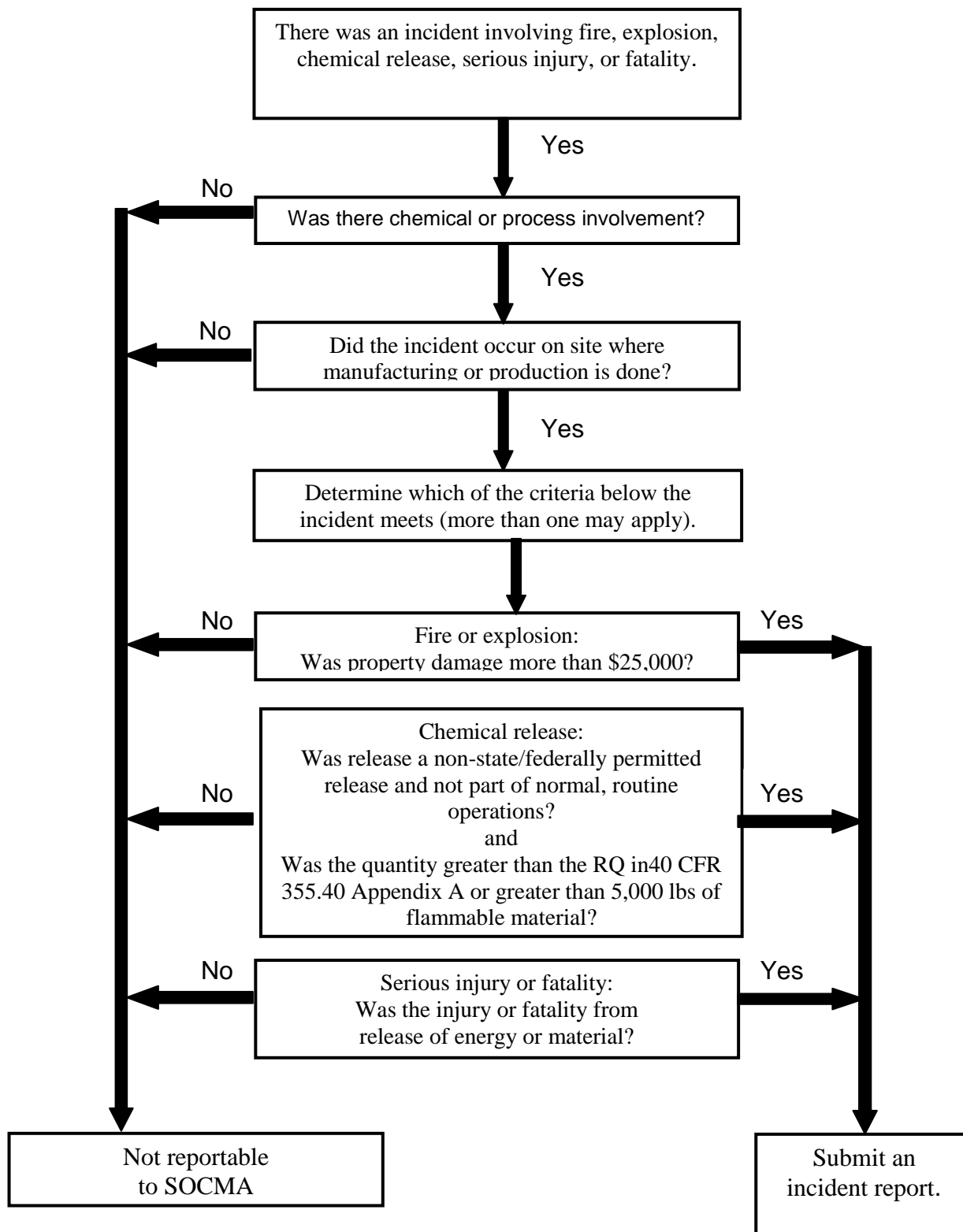
Contact: chemstewards@socma.com



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Appendix B - Process Safety Metric Reporting Logic



Appendix C - Process Safety Incident Reporting Form

Please read carefully the detailed instructions that are included with this form to determine what type of incidents are reportable for this metric. The detailed instructions include the reportable quantities for CERCLA extremely hazardous substances and the definition of flammable material.

For an incident to be reportable for this metric, it must first directly involve a chemical or chemical process. An incident with no direct chemical or process involvement (i.e., an office building fire) even if the building is on the plant site, is not reportable.

Reportable Incidents

If the incident involves either a chemical or chemical process directly, it is reportable under this metric if it included:

- A fire or explosion causing more than \$25,000 in property damage,
- A release of a chemical greater than the CERCLA reportable quantity for extremely hazardous substances or a release of more than 5,000 pounds of a flammable material, or
- A serious injury or fatality arising from a fire, explosion, chemical release, or a release of energy or material from a process.

INCIDENT INFORMATION Please fill out this form for each incident.

Date, Time, and Location Date _____ Time _____ ☐ AM ☐ PM State _____

Type of Incident

Check the boxes of all reporting criteria that apply and complete the applicable information.

- ☐ Fire or explosion causing more than \$25,000 in property damage
- ☐ Release of chemical greater than CERCLA reportable quantity for extremely hazardous substances or a release of more than 5,000 pounds of flammable material. If yes, complete the table below.

Chemical or Material Name	Pounds

Attach additional sheets if necessary

- ☐ Serious injury or fatality. If yes, complete table below.

	Injury	Fatality
Number On-site		
Number Off-site		

Property Damages

Check the amount of property damages associated with the incident (fire, explosion, release, or injury/fatality).

	On-site	Off-site
None	<input type="checkbox"/>	<input type="checkbox"/>
\$25,000 or less	<input type="checkbox"/>	<input type="checkbox"/>
\$25,001 - \$100,000	<input type="checkbox"/>	<input type="checkbox"/>
\$100,001 - \$250,000	<input type="checkbox"/>	<input type="checkbox"/>
More than \$250,000	<input type="checkbox"/>	<input type="checkbox"/>

Location of Incident ☐ Process unit ☐ Pipeline between units/areas ☐ Utilities area ☐

Distribution

- ☐ Pilot plant ☐ Chemical storage area ☐ Laboratory ☐ Other (please specify) _____

Other Impacts

- ☐ Off-site emergency responders called ☐ Off-site population protection
- ☐ Media Coverage ☐ Evacuation-Number of persons affected: _ _
- ☐ Shelter in-place Number of persons affected: _____

Appendix D - Process Safety Code Measurement System Annual Company Summary Form

Instructions

Please complete the company information below. Be sure to enter the facility name covered by this report and the number of reportable incident forms you are including with this form. Please remember to submit this form even if your company has no incidents to report. Otherwise, you may be listed as a non-respondent.

Facility covered by this summary	
Number of incident reports at the facility	

Reporting period:

ChemStewards Department will specify the due date. All data is from the previous year.

**Appendix E - List of Extremely Hazardous Substances under 40 CFR 355.40,
Appendix A**

Chemical Name	CAS No.	RQ (lbs)
Acetone cyanohydrin	00075-86-5	10
Acetone thiosemicarbazide	01752-30-3	1000
Acrolein (2-Propenal)	00107-02-8	1
Acrylamide	00079-06-1	5000
Acrylonitrile	00107-13-1	100
Acrylyl chloride	00814-68-6	100
Adiponitrile	00111-69-3	1000
Aldicarb	00116-06-3	1
Aldrin	00309-00-2	1
Allyl alcohol	00107-18-6	100
Allylamine	00107-11-9	500
Aluminum phosphide	20859-73-8	100
Aminopterin	00054-62-6	500
Amiton	00078-53-5	500
Amiton oxalate	03734-97-2	100
Ammonia, anhydrous	07664-41-7	100
Amphetamine	00300-62-9	1000
Aniline	00062-53-3	5000
Aniline 2,4,6-Trimethyl-	00088-05-1	500
Antimony pentafluoride	07783-70-2	500
Antimycin A	01397-94-0	1000
ANTU, thiorea, 1-naphthalenyl-	00086-88-4	100
Arsenic pentoxide	01303-28-2	1
Arsenous oxide, Arsenic trioxide	01327-53-3	1
Arsenous trichloride	07784-34-1	1
Arsine, Arsenic Hydride	07784-42-1	100
Azinphos-ethyl	02642-71-9	100
Azinphos-methyl, guthion	00086-50-0	1
Benzal chloride	00098-87-3	5000
Benzenamine, 3-(Trifluoromethyl)-	00098-16-8	500
Benzene, 1-(Chloromethyl)-4-Nitro-	00100-14-1	500
Benzeneearsonic acid	00098-05-5	10
Benzimidazole, 4,5-Dichloro-2-(Trifluoromethyl)-	03615-21-2	500
Benzotrachloride, Benzaic trichloride	00098-07-7	10
Benzyl chloride	00100-44-7	100
Benzyl cyanide	00140-29-4	500
Bicyclo[2.2.1] heptane-2-carbonitrile, 5-chloro-6- (((methylamino)carbonyl)oxy)imino)- (1s-(1-alpha,2-beta,4-alpha,5-alpha,6E))-	15271-41-7	500
Bis(Chloromethyl) ketone	00534-07-6	10
Bitoscanate	04044-65-9	500
Boron trichloride	10294-34-5	500
Boron trifluoride	07637-07-2	500

Chemical Name	CAS No.	RQ (lbs)
Boron trifluoride compound w/methyl ether(1 :1)	00353-42-4	1000
Bromadiolone	28772-56-7	100
Bromine	07726-95-6	500
Cadmium oxide	01306-19-0	100
Cadmium stearate	02223-93-0	1000
Calcium arsenate	07778-44-1	1
Campechlor, Camphene, octochloro-	08001-35-2	1
Cantharidin	00056-25-7	100
Carbachol chloride	00051-83-2	500
Carbamic acid, Methyl-, 0(((2,4-dimethyl-1, 3-dithiolan-2-yl)methylene)amino)-	26419-73-8	1
Carbofuran	01563-66-2	10
Carbon disulfide	00075-15-0	100
Carbophenothion	00786-19-6	500
Chlordane	00057-74-9	1
Chlorfenvinfos	00470-90-6	500
Chlorine	07782-50-5	10
Chlormephos	24934-91-6	500
Chlormequat chloride	00999-81-5	100
Chloroacetic acid	00079-11-8	100
Chloroethanol	00107-07-3	500
Chloroethyl chloroformate	00627-11-2	1000
Chloroform	00067-66-3	10
Chloromethyl ether	00542-88-1	10
Chloromethyl methyl ether	00107-30-2	10
Chlorophacinone	03691-35-8	100
Chloroxuron	01982-47-4	500
Chlorthiophos	21923-23-9	500
Chromic chloride	10025-73-7	1
Cobalt ((2,2'-(1 ,2-ethanediylbis (nitrilomethylidyne)) Bis-(6-fluorophenolato))(2-)-N,N',O,O')-	62207-76-5	100
Cobalt carbonyl	10210-68-1	10
Colchicine	00064-86-8	10
Coumaphos	00056-72-4	10
Coumatetralyl	05836-29-3	500
Cresol, o-	00095-48-7	100
Crimidine	00535-89-7	100
Crotonaldehyde	04170-30-3	100
Crotonaldehyde, (E)-	00123-73-9	100
Cyanogen bromide	00506-68-3	1000
Cyanogen iodide	00506-78-5	1000
Cyanophos	02636-26-2	1000
Cyanuric fluoride	00675-14-9	100
Cycloheximide	00066-81-9	100
Cyclohexylamine	00108-91-8	10000
Decarborane (14)	17702-41-9	500
Demeton	08065-48-3	500
Demeton-S-methyl	00919-86-8	500
Dialifor	10311-84-9	100

Chemical Name	CAS No.	RQ (lbs)
Diborane	19287-45-7	100
Dichloroethyl ether, Bis(2-chloroethyl)ether	00111-44-4	10
Dichloromethylphenylsilane	00149-74-6	1000
Dichlorvos	00062-73-7	10
Dicrotophos	00141-66-2	100
Diepoxybutane 2,2'-Bioxirane	01464-53-5	10
Diethyl chlorophosphate	00814-49-3	500
Digitoxin	00071-63-6	100
Diglycidyl ether	02238-07-5	1000
Digoxin	20830-75-5	10
Dimefox	00115-26-4	500
Dimethoate	00060-51-5	10
Dimethyl phosphorochloridothioate	02524-03-0	500
Dimethyl sulfate	00077-78-1	100
Dimethyldichlorosilane	00075-78-5	500
Dimethylhydrazine, 1,1-	00057-14-7	10
Dimethyl-p-phenylenediamine	00099-98-9	10
Dimetilan	00644-64-4	1
Dinitrocresol	00534-52-1	10
Dinoseb	00088-85-7	1000
Dinoterb	01420-07-1	500
Dioxathion	00078-34-2	500
Diphacinone	00082-66-6	10
Diphosphoramidate, octamethyl-	00152-16-9	100
Disulfoton	00298-04-4	1
Dithiazanine iodide	00514-73-8	500
Dithiobiuret	00541-53-7	100
Emetine, Dihydrochloride	00316-42-7	1
Endosulfan	00115-29-7	1
Endothion	02778-04-3	500
Endrin	00072-20-8	1
Epichlorohydrin	00106-89-8	100
EPN	02104-64-5	100
Ergocalciferol	00050-14-6	1000
Ergotamine tartrate	00379-79-3	500
Ethanesulfonyl chloride, 2-chloro-	01622-32-8	500
Ethanol, 1,2-Dichloro-, Acetate	10140-87-1	1000
Ethion	00563-12-2	10
Ethoprophos	13194-48-4	1000
Ethylbis (2-chloroethyl) amine	00538-07-8	500
Ethylene fluorohydrin	00371-62-0	10
Ethylene oxide, Oxirane	00075-21-8	10
Ethylenediamine	00107-15-3	5000
Ethyleneimine, Aziridine	00151-56-4	1
Ethylthiocyanate	00542-90-5	10000
Fenamiphos	22224-92-6	10
Fensulfothion	00115-90-2	500
Fluometil	04301-50-2	100
Fluorine	07782-41-4	10

Chemical Name	CAS No.	RQ (lbs)
Fluoroacetamide	00640-19-7	100
Fluoroacetic acid	00144-49-0	10
Fluoroacetyl chloride	00359-06-8	10
Fluorouracil	00051-21-8	500
Fonofos	00944-22-9	500
Formaldehyde (Formalin)	00050-00-0	100
Formaldehyde cyanohydrin	00107-16-4	1000
Formetanate hydrochloride	23422-53-9	1
Formothion	02540-82-1	100
Formparanate	17702-57-7	1
Fosthietan	21548-32-3	500
Fuberidazole	03878-19-1	100
Furan	00110-00-9	100
Gallium trichloride	13450-90-3	500
Hexachlorocyclopentadiene	00077-47-4	10
Hexamethylenediamine, N, N'-Dibutyl-	04835-11-4	500
Hydrazine	00302-01-2	1
Hydrocyanic acid	00074-90-8	10
Hydrogen chloride (gas only)	07647-01-0	5000
Hydrogen fluoride	07664-39-3	100
Hydrogen peroxide (52% by weight or greater)	07722-84-1	1000
Hydrogen selenide	07783-07-5	10
Hydrogen sulfide	07783-06-4	100
Hydroquinone	00123-31-9	100
Iron, pentacarbonyl-	13463-40-6	100
Isobenzan	00297-78-9	100
Isobutyronitrile	00078-82-0	1000
Isocyanic acid, 3,4-Dichlorophenyl Ester	00102-36-3	500
Isodrin	00465-73-6	1
Isofluorophate, Diisopropylfluorophosphate	00055-91-4	100
Isophorone diisocyanate	04098-71-9	100
Isopropyl chloroformate	00108-23-6	1000
Isopropylmethylpyrazolyl dimethylcarbamate	00119-38-0	1
Lactonitrile	00078-97-7	1000
Leptophos	21609-90-5	500
Lewisite	00541-25-3	10
Lindane, Hexachlorocyclohexane (gamma isomer)	00058-89-9	1
Lithium hydride	07580-67-8	100
Malononitrile	00109-77-3	1000
Manganese, tricarbonyl methylcyclopentadienyl	12108-13-3	100
Mechlorethamine, Nitrogen mustard	00051-75-2	10
Mephosfolan	00950-10-7	500
Mercuric acetate	01600-27-7	500
Mercuric chloride	07487-94-7	500
Mercuric oxide	21908-53-2	500
Methacrolein diacetate	10476-95-6	1000
Methacrylic anhydride	00760-93-0	500
Methacrylonitrile	00126-98-7	1000
Methacryloyl chloride	00920-46-7	100

Chemical Name	CAS No.	RQ (lbs)
Methacryloyloxyethyl isocyanate	30674-80-7	100
Methamidophos	10265-92-6	100
Methanesulfonyl fluoride	00558-25-8	1000
Methidathion	00950-37-8	500
Methiocarb, Mercaptodimethur	02032-65-7	10
Methomyl	16752-77-5	100
Methoxyethylmercuric acetate	00151-38-2	500
Methyl 2-chloroacrylate	00080-63-7	500
Methyl bromide, Bromomethane	00074-83-9	1000
Methyl chloroformate	00079-22-1	1000
Methyl hydrazine	00060-34-4	10
Methyl isocyanate	00624-83-9	10
Methyl isothiocyanate	00556-61-6	500
Methyl mercaptan, Thiomethanol	00074-93-1	100
Methyl phenkapton	03735-23-7	500
Methyl phosphonic dichloride	00676-97-1	100
Methyl thiocyanate	00556-64-9	10000
Methyl vinyl ketone	00079-84-4	10
Methylmercuric dicyanamide	00502-39-6	500
Methyltrichlorosilane	00075-79-6	500
Metolcarb	01129-41-5	1
Mevinphos	07786-34-7	10
Mexacarbate	00315-18-4	1000
Mitomycin C	00050-07-7	10
Monocrotophos	06923-22-4	10
Muscimol	02763-96-4	1000
Mustard Gas	00505-60-2	500
Nickel carbonyl (Nickel tetracarbonyl)	13463-39-3	10
Nicotine	00054-11-5	100
Nicotine sulfate	00065-30-5	100
Nitric acid (94.5% by weight or greater)	07697-37-2	1000
Nitric oxide	10102-43-9	10
Nitrobenzene	00098-95-3	1000
Nitrocyclohexane	01122-60-7	500
Nitrogen dioxide	10102-44-0	10
Nitrosodimethylamine	00062-75-9	10
Norbormide	00991-42-4	100
Organorhodium Complex (PMN-82-147)	00000-00-0	10
Ouabain	00630-60-4	100
Oxamyl	23135-22-0	1
Oxetane, 3,3-Bis(Chloromethyl)-	00078-71-7	500
Oxydisulfoton	02497-07-6	500
Ozone	10028-15-6	100
Paraquat dichloride	01910-42-5	10
Paraquat methosulfate	02074-50-2	10
Parathion	00056-38-2	10
Parathion-methyl	00298-00-0	100
Paris Green, Cupric acetoarsenite	12002-03-8	1
Pentaborane	19624-22-7	500

Chemical Name	CAS No.	RQ (lbs)
Pentadecylamine	02570-26-5	100
Peracetic acid (concentration >60% by weight)	00079-21-0	500
Perchloromethyl mercaptan	00594-42-3	100
Phenol	00108-95-2	1000
Phenol, 2,2-Thiobis(4-Chloro-6-Methyl)-	04418-66-0	100
Phenol, 3-(1-Methylethyl)-,Methylcarbamate	00064-40-6	1
Phenoxarsine, 10,10'-Oxydi-	00058-36-6	500
Phenyl dichloroarsine, Dichlorophenylarsine	00696-28-6	1
Phenylhydrazine hydrochloride	00059-88-1	1000
Phenylmercury acetate	00062-38-4	100
Phenylsilatrane	02097-19-0	100
Phenylthiourea	00103-85-5	100
Phorate	00298-02-2	10
Phosacetim	04104-14-7	100
Phosfolan	00947-02-4	100
Phosgene, Carbonyl Chloride	00075-44-5	10
Phosmet	00732-11-6	10
Phosphamidon	13171-21-6	100
Phosphine (Hydrogen Phosphide)	07803-51-2	100
Phosphonothioic acid, methyl-, O-Ethyl O-(4-Methylthio) Phenyl) Ester	02703-13-1	500
Phosphonothioic acid, methyl-, S-(2-(Bis(1-Methylethyl) Amino) Ethyl) O-Ethyl Ester	50782-69-9	100
Phosphonothioic acid, methyl-, O-(4-Nitrophenyl) O-Phenyl Ester	02665-30-7	500
Phosphoric acid, Dimethyl 4-(Methylthio) Phenyl Ester	03254-63-5	500
Phosphorothioic acid, O,O-Dimethyl-S-(2-Methylthio) Ethyl Ester	02587-90-8	500
Phosphorus	07723-14-4	1
Phosphorus oxychloride, Phosphoryl chloride	10025-87-3	1000
Phosphorus pentachloride	10026-13-8	500
Phosphorus trichloride	07719-12-2	1000
Physostigmine	00057-47-6	1
Physostigmine, Salicylate (1:1)	00057-64-7	1
Picrotoxin	00124-87-8	500
Piperidine	00110-89-4	1000
Pirimifos-ethyl	23505-41-1	1000
Potassium arsenite	10124-50-2	1
Potassium cyanide	00151-50-8	10
Potassium silver cyanide	00506-61-6	1
Promecarb	02631-37-0	1
Propargyl Bromide	00106-96-7	10
Propiolactone, Beta-	00057-57-8	10
Propionitrile, Ethyl cyanide	00107-12-0	10
Propionitrile, 3-Chloro-	00542-76-7	1000
Propiophenone, 4-Amino-	00070-69-9	100
Propyl chloroformate	00109-61-5	500
Propylene oxide	00075-56-9	100
Propyleneimine	00075-55-8	1

Chemical Name	CAS No.	RQ (lbs)
Prothoate	02275-18-5	100
Pyrene	00129-00-0	5000
Pyridine, 2-Methyl-5-vinyl-	00140-76-1	500
Pyridine, 4-Amino-	00504-24-5	1000
Pyridine, 4-Nitro-,1-oxide	01124-33-0	500
Pyriminil	53558-25-1	100
Salcomine	14167-18-1	500
Sarin	00107-44-8	10
Selenious acid	07783-00-8	10
Selenium oxychloride	07791-23-3	500
Semicarbazide hydrochloride	00563-41-7	1000
Silane, (4-Aminobutyl)Diethoxymethyl-	03037-72-7	1000
Sodium arsenate	07631-89-2	1
Sodium arsenite	07784-46-5	1
Sodium azide (Na(N ₃))	26628-22-8	1000
Sodium cacodylate	00124-65-2	100
Sodium cyanide (Na(CN))	00143-33-9	10
Sodium fluoroacetate	00062-74-8	10
Sodium selenate	13410-01-0	100
Sodium selenite	10102-18-8	100
Sodium tellurite	10102-20-2	500
Stannane, acetoxystriphenyl-	00900-95-8	500
Strychnine	00057-24-9	10
Strychnine sulfate	00060-41-3	10
Sulfotep	03689-24-5	100
Sulfoxide, 3-Chloropropyl Octyl	03569-57-1	500
Sulfur dioxide	07446-09-5	500
Sulfur tetrafluoride	07783-60-0	100
Sulfur trioxide	07446-11-9	100
Sulfuric acid	07664-93-9	1000
Tabun	00077-81-6	10
Tellurium hexafluoride	07783-80-4	100
TEPP, Tetraethyl pyrophosphate	00107-49-3	10
Terbufos	13071-79-9	100
Tetraethyllead	00078-00-2	10
Tetraethyltin	00597-64-8	100
Tetramethyl lead	00075-74-1	100
Tetranitromethane	00509-14-8	10
Thallium sulfate	10031-59-1	100
Thallous carbonate	06533-73-9	100
Thallous chloride	07791-12-0	100
Thallous malonate	02757-18-8	100
Thallous sulfate	07446-18-6	100
Thiocarbazide	02231-57-4	1000
Thiofanox	39196-18-4	100
Thionazin	00297-97-2	100
Thiophenol	00108-98-5	100
Thiosemicarbazide	00079-19-6	100
Thiourea, (2-Chlorophenyl)-	05344-82-1	100

Chemical Name	CAS No.	RQ (lbs)
Thiourea, (2-Methylphenyl)-	00614-78-8	500
Titanium tetrachloride	07550-45-0	1000
Toluene 2,4-Diisocyanate	00584-84-9	100
Toluene 2,6-Diisocyanate	00091-08-7	100
Trans-1,4-Dichlorobutene	00110-57-6	500
Triamiphos	01031-47-6	500
Triazofos	24017-47-8	500
Trichloroacetyl chloride	00076-02-8	500
Trichloroethylsilane	00115-21-9	500
Trichloronate	00327-98-0	500
Trichlorophenylsilane	00098-13-5	500
Trichloro (chloromethyl) silane	01558-25-4	100
Trichloro (dichlorophenyl) silane	27137-85-5	500
Triethoxysilane	00998-30-1	500
Trimethylchlorosilane	00075-77-4	1000
Trimethylolpropane phosphite	00824-11-3	100
Trimethyltin chloride	01066-45-1	500
Triphenyltin chloride	00639-58-7	500
Tris(2-Chloroethyl)amine	00555-77-1	100
Valinomycin	02001-95-8	1000
Vanadium pentoxide	01314-62-1	1000
Vinyl acetate monomer	00108-05-4	5000
Warfarin	00081-81-2	100
Warfarin sodium	00129-06-6	100
Xylylene dichloride	28347-13-9	100
Zinc, dichloro(4,4-dimethyl-5 methylamino),- carbonyl)oxy)imino)pentanenitrile)(T-4)-	58270-08-9	100
Zinc phosphide	01314-84-7	100

Note: Reportable Quantity (RQ) amounts can and do change. The RQ limits listed above should be verified against current legal requirements. Also note that State requirements may be different from Federal requirements.

[Use This Form For **Facility Employee Data** Only]

Date submitted:_____

Is this a correction of data previously submitted? yes___ no___

Phone: _____ Fax: _____ Email: _____

Entries

Total OSHA Recordable cases (A+B+C+D above): _____

The above entries are based on BLS reporting guidelines and are, to the best of my knowledge, true and correct.

_____(signature)

Appendix G: Instructions and Reporting Form for Energy Efficiency

SOCMA member companies participating in the Enhanced Performance Tier and the Excellence Tier of the ChemStewards program reported energy efficiency emissions for previous year data.

GENERAL INFORMATION

1. Confidentiality of submitted data.

The confidentiality of individual company responses will be rigorously safeguarded by SOCMA staff. SOCMA staff will review, and, if necessary, verify submitted data. The data will then be entered in SOCMA's confidential database. Individual company data will be retained by SOCMA in its confidential data base for use in correlating and verifying data reported subsequently, and to assess survey respondent companies' aggregate efficiency and emissions trends over time. Individual company data was reported to the public under the ChemStewards program beginning in 2007. Data will continue to be publicly reported as an aggregate on the SOCMA website and on a company by company basis on the member's side of the website.

2. Frequency of reporting.

This is an annual report which will provide a running annual tabulation of energy consumption and related output measures such as aggregate pounds of production. This will allow an evaluation of chemical industry performance trends in the area of energy efficiency.

3. Report distribution

The report form will be posted as a downloadable Excel spreadsheet in the "members only" section of the SOCMA web site. The form will also be available electronically as an e-mail attachment upon request to SOCMA staff.

4. Data requested

The report is designed to capture total energy use and greenhouse gas emissions by member companies in the year 2006, in NAICS 325, chemical manufacturing (formerly SIC 28, chemicals and allied products), in the United States. Purchased energy used as fuel, purchased steam, and purchased non-feedstock electricity, as well as fuels produced on-site, are to be reported on Sheet 1.

5. Facility data to be reported.

Energy and other data for sites or facilities that support SOCMA dues-based operations should be reported. For example, office or laboratory facilities that are over 50% supportive of non-NAICS 325 production are not reportable. Office or laboratory facilities that are over 50% in support of NAICS 325 production are reportable. Similarly, parts of single sites that are over 50% in support of non-NAICS 325 production are not reportable; however, if it is easier to keep all data together for the total site, that can be included in the reported data. The key is to be consistent in your company's reporting method year-to-year.

6. Individual facility data should be submitted

Member companies may find it useful to track their energy use on a site, plant, or product basis. Therefore, for this SOCMA report, individual facility totals are requested for NAICS 325 manufacturing in the United States. SOCMA requests that each company submit one response per facility.

7. Reporting energy consumed at a site where products other than NAICS 325 products are also produced

Where a plant or company's product mix is part NAICS 325 and part others, please allocate energy as appropriate. Company responders' judgments are acceptable. The critical aspect of this allocation is to be consistent year-to-year.

8. Exclusion of energy used in transportation of chemical products or feedstocks

The intent of the survey is to capture manufacturing sector energy use only, and not to include fleet transport energy.

9. Exclusion of energy use and pounds of production data from operations in Puerto Rico or other U.S. territories

The energy consumption data should include only that consumed in the 50 states; the total production should include products produced in the 50 states (whether sold in the U.S. or exported).

10. Higher Heating Value

The report will be based on the use of Higher Heating Value (HHV) for all fuels when converting to MM Btu/year. Higher Heating Value includes the heat released assuming all water vapor in the combustion products is condensed. If needed, this value can be obtained from the supplier.

11. Data availability; judgment

SOCMA anticipates that data needed to complete the form will be readily available from company records (e.g. electric bills, natural gas bills, etc.). To minimize the burden of responding, estimates or judgments may be used where necessary to file a comprehensive report. Consistency in methodology from year to year is important in order to accurately monitor energy efficiency trends.

12. Energy conversion factors provided

The survey form includes standard energy conversion factors to convert the physical units of energy to MM Btu. A conversion factor of 10,000 Btu/kWh is used for purchased electricity to reflect typical electric utility efficiency and transmission losses. Where the actual fuel heating value is known to differ from the standard conversion value listed on the survey form, indicate the appropriate alternate conversion factor in the space provided on the form and use the alternate factor in your calculations.

13. Energy conversion factors to be provided by respondents

Some SOCMA members may purchase energy or use fuel that is not listed on Sheet 1, sections 2a. through 2g. These energy purchases should be listed on the spreadsheet under 2h. Purchased Steam or 2i. Other Purchased. We are requesting respondents to provide the appropriate energy conversion for these energy sources. If a more accurate figure is not available for the steam purchased under 2h., the default steam energy conversion of 1200 Btu/lb may be used.

14. NAICS classifications

For your guidance, a copy of the NAICS (North American Industrial Classification System) codes for chemical manufacturing is included in these instructions.

15. Additional Information About the Report

For more information about the instructions or report form, contact SOCMA's Performance Improvement Staff at 202-721-4100 or email chemstewards@socma.com.

INSTRUCTIONS - SHEET 1: PRODUCTION; NON-FEEDSTOCK ENERGY PURCHASED; FUELS PRODUCED ON SITE

POUNDS OF PRODUCTION

1-1. Reason for requesting data on "pounds of production"

SOCMA understands that pounds of production is not a perfect measure, but does believe it is useful as a measure of industry trends. For each facility, we are asking for a single, aggregate number for pounds of production per facility. This will include pounds of all NAICS 325 products resulting from the energy consumption reported. We recognize this may result in some double-counting because one site's output may be another site's input. Nevertheless, this method seems straightforward and, if followed consistently, will accurately indicate the trend in pounds of production over time. Furthermore, this method parallels in concept the Census Bureau's method for collecting data on company shipments.

1-2. Include the quantity of exports respectively in the pounds of production reported

The basic idea is to count all sales and production attributable to domestic manufacture, i.e. that which consumes the energy reported. Sales and production of products manufactured outside the United States, or manufactured outside the United States and imported into the United States, should not be included in the production total.

NON FEEDSTOCK ENERGY PURCHASED (*Sheet 1, Lines 2a – 2i*)

1-3. Purchased electricity (including feedstock electricity) (*Sheet 1, Lines 2a – 2g*)

Purchased electricity used for heating or power plus purchased “feedstock” electricity used directly in the process (such as electrolysis) should be listed on Sheet 1. Self-generated electricity should not be listed anywhere since it is generated from the fuels which will be listed either as purchased or on-site produced. This method will allow accounting for the fuel-to-electricity conversion process efficiency. If the facility sells or exports electricity or steam, the quantity sold or exported should be subtracted from the amount of purchased electricity or steam in the appropriate row so that net consumption or utilization is reported. For this survey a conversion factor of 10,000 Btu/kWh is used to account for typical electric utility efficiency and transmission line losses.

1-4. Purchased steam (*Sheet 1, Line 2h*)

Purchased steam should be listed on Sheet 1. Do not list steam produced on-site from fuels also listed on Sheet 1. That would be double counting, as the fuel energy input has already been reported. Similarly, except as given in instruction 1-7 below, do not report steam produced on-site by process heat recovery (process stream cooling which generates steam). An example would be formaldehyde manufacturing, where steam is generated by process cooling and used elsewhere on-site.

1-5. Process-generated steam (*Sheet 1, Line 2h*)

If steam is generated by the process and that steam is sold or transferred off-site by the reporting company to another company, the steam sold or transferred should be accounted for by the reporting company (the steam generator) as a negative value in the purchased steam row of Sheet 1.

Similarly, if steam generated in a process by another company is purchased by the reporting company site, that purchased steam should be reported by the reporting company (the purchaser) as a positive value on Sheet 1.

1-6. Steam purchased from cogeneration facilities (*Sheet 1, Line 2i*)

Some members may purchase steam and electricity from cogeneration facilities. A cogeneration facility produces steam to generate electricity and also sells steam to improve the efficiency of the generating unit. If you purchase steam from a cogeneration facility, use the actual energy value, if known. Otherwise, steam energy should be valued at the standard 1200 Btu/LB.

1-7. Electricity purchased from cogeneration facilities (*Sheet 1, Line 2i*)

As noted above in Section 1-7, some members may purchase steam and electricity from cogeneration facilities. If you purchase electricity from a cogeneration facility, use the actual energy value, if known. Otherwise, electricity should be valued at the standard 10,000 Btu/kWh.

FUEL PRODUCED ON SITE (*Sheet 1, Lines 4a – 4c*)

1-8. Reason for requesting data for on-site produced energy (*Sheet 1, Lines 4a – 4c*)

SOCMA member companies are major users of on-site produced energy including combustible byproduct streams. The use of on-site produced energy displaces the purchase of direct fossil fuel energy. If only purchased non-feedstock energy, our industry's energy efficiency would be overstated. To correctly report and assess energy efficiency trends, on-site produced energy must also be counted. Therefore, for this purpose, energy data aggregated on Sheet 1 of the survey include both purchased and on-site produced energy.

1-9. Energy sources to report (*Sheet 1, Lines 4a – 4c*)

Fuels produced on-site should include those produced in the process from feedstock energy inputs or non-energy inputs and which are combusted to produce heat and power, generate electricity, etc. The on-site fuels are to include those considered to be byproduct fuels, including byproduct gases, even of low Btu content or if mixed with other fuels. Low-value byproducts destroyed in incinerators with heat recovery should be reported on Sheet 1, item 4- Fuel Produced On-site. Appropriate energy conversion factors should be used in the conversion calculations. For reference, a list of approximate conversion factors based on byproduct fuels generally available are included in these instructions.

NAICS CODES – NAICS 325 – CHEMICAL MANUFACTURING

325	Chemical Manufacturing
3251	Basic Chemical Manufacturing
32511	Petrochemical Manufacturing
32512	Industrial Gas Manufacturing
32513	Synthetic Dye and Pigment Manufacturing
325131	Inorganic Dye and Pigment Manufacturing
325132	Synthetic Organic Dye and Pigment Manufacturing
32518	Other Basic Inorganic Chemical Manufacturing
325181	Alkalies and Chlorine Manufacturing
325182	Carbon Black Manufacturing
325188	All Other Basic Inorganic Chemical Manufacturing
32519	Other Basic Organic Chemical Manufacturing
325191	Gum and Wood Chemical Manufacturing
325192	Cyclic Crude and Intermediate Manufacturing
325193	Ethyl Alcohol Manufacturing
325199	All Other Basic Organic Chemical Manufacturing
3252	Resin, Synthetic Rubber, and Artificial and Synthetic Fibers and Filaments Manufacturing
32521	Resin and Synthetic Rubber Manufacturing
325211	Plastics Material and Resin Manufacturing
325212	Synthetic Rubber Manufacturing
32522	Artificial and Synthetic Fibers and Filaments Manufacturing
325221	Cellulosic Organic Fiber Manufacturing
325222	Noncellulosic Organic Fiber Manufacturing
3253	Pesticide, Fertilizer, and Other Agricultural Chemical Manufacturing
32531	Fertilizer Manufacturing
325311	Nitrogenous Fertilizer Manufacturing
325312	Phosphatic Fertilizer Manufacturing
325314	Fertilizer (Mixing Only) Manufacturing
32532	Pesticide and Other Agricultural Chemical Manufacturing
3254	Pharmaceutical and Medicine Manufacturing
32541	Pharmaceutical and Medicine Manufacturing
325411	Medicinal and Botanical Manufacturing
325412	Pharmaceutical Preparation Manufacturing
325413	In-Vitro Diagnostic Substance Manufacturing
325414	Biological Product (except Diagnostic) Manufacturing
3255	Paint, Coating, and Adhesive Manufacturing
32551	Paint and Coating Manufacturing
32552	Adhesive Manufacturing
3256	Soap, Cleaning Compound, and Toilet Preparation Manufacturing
32561	Soap and Cleaning Compound Manufacturing
325611	Soap and Other Detergent Manufacturing
325612	Polish and Other Sanitation Good Manufacturing
325613	Surface Active Agent Manufacturing
32562	Toilet Preparation Manufacturing
3259	Other Chemical Product and Preparation Manufacturing
32591	Printing Ink Manufacturing
32592	Explosives Manufacturing
32599	All Other Chemical Product and Preparation Manufacturing
325991	Custom Compounding of Purchased Resins

325992 Photographic Film, Paper, Plate, and Chemical Manufacturing
325998 All Other Miscellaneous Chemical Product and Preparation Manufacturing

SELECTED BTU CONTENT

FUEL	BTU/UNIT
Coal Tar Oil	145,000 /gal
Coke Oven Tar	34.68 MM / ton
Phenol Residue	160,000 /gal

OTHER

1 MCF = 1,000 cubic feet of natural gas
1 MCF ~ 1.04 Dekatherms (DTH)

IMAGES OF TABS 1-3: THE SOCMA ENERGY EFFICIENCY METRIC EXCEL SPREADSHEET

The following pages contain images from tabs 1-3 of the Excel spreadsheet for reporting on the SOCMA Energy Efficiency Metric. This is only an image of the forms, do not utilize for data entry. Either the manual forms or the Excel spreadsheet in the database may be used for reporting. When the Excel spreadsheet is used, calculations are performed automatically.

Image of Tab 1 – Contact Form from Energy Efficiency Metric Excel Spreadsheet

SOCMA ENERGY EFFICIENCY METRIC CONTACT FORM

Report Data for NAICS 325 production facilities and facilities which primarily support NAICS 325 production facilities.

CALENDAR YEAR:

Please provide the company contact person to whom questions about the survey response can be directed.

NAME:

TITLE:

COMPANY:

ADDRESS:

PHONE:

FAX:

E-MAIL:

Image of Tab 2 – Calculator from Energy Efficiency Metric Excel Spreadsheet

Enter Your Data in the Yellow Cells

Data will be Automatically Calculated in the Blue Cells

SOCMA

ENERGY EFFICIENCY METRIC

SHEET 1: PRODUCTION; PURCHASED ELECTRICITY & FUELS PLUS ON-SITE GENERATED FUELS

CALENDAR YEAR:

1. Total Company US Production: Pounds, Millions
(Include exports and intra-company transfers within and out of NAICS 325)

		QUANTITY PURCHASED AS FUEL/ ELECTRICITY	UNITS	STANDARD SOCMA OR ALTERNATE ENERGY CONVERSION FACTORS ^{(3)/(4)}	UNITS	ENERGY CONSUMED MM BTU
2. Non-feedstock Energy Purchased						
2a. Electricity			MMKWH ⁽²⁾	10,000	BTU/KWH	-
2b. Natural Gas			MCF	1.03	MMBTU/MCF	-
2c. LPG			BBL ⁽¹⁾	3.7	MMBTU/BBL	-
2d. Distillate Fuel Oil ⁽⁵⁾			BBL ⁽¹⁾	5.8	MMBTU/BBL	-
2e. Residual Fuel Oil ⁽⁵⁾			BBL ⁽¹⁾	6.3	MMBTU/BBL	-
2f. Coal			TONS	24	MMBTU/TON	-
2g. Coke			TONS	29	MMBTU/TON	-
2h. Purchased Steam			MMLB ⁽²⁾	1,200	BTU/LB	-
2i. Other Purchased (specify type)						-
						-
						-
						-
						-
3. Total Purchased Non-feedstock Energy						-
4. Fuel Produced On-site ⁽⁶⁾						
	4a. Subtotal - Gases					
	4b. Subtotal - Liquids					
	4c. Subtotal - Solids					
5. Total On-site Produced Fuel (gases+liquids+solids)						-
6. Total Non-feedstock Energy (3+5)						-
(Sum of Purchased On-site. CO ₂ total carries forward to Sheet 2, Item 9.)						

**SOCMA
ENERGY EFFICIENCY AND GREENHOUSE GAS EMISSIONS METRICS
FOOTNOTES**

Calculator Sheet.

- (1) 42 US gallons per barrel.
- (2) Note the specific units - millions of kWh and millions of LB of steam are requested. Note also that the corresponding energy conversion factors are per kWh and per LB of steam.
- (3) Use Higher Heating Value (HHV) for all fuels. Higher Heating Value includes the heat released assuming all water vapor in the combustion products is condensed. This value should be available from your supplier.
- (4) For typical purchased fuels, use the standard energy factors. For each atypical purchased fuel, provide the alternate energy conversion factor.
- (5) Distillate fuel oil includes #1 and #2. Residual fuel oil includes crude, #4, #5 and #6.
- (6) Provide data for the cumulative total Btu by type (gases, liquids, solids). A list of approximate factors for some alternate energy sources is included in the instructions.

GENERAL.

- (a) M =1,000; MM = 1,000,000.

Appendix H - Instructions and Reporting Form for Hazardous Waste Metric

REPORTING FORMAT

Year	Hazardous Waste Generated (pounds)	Production (pounds)	Pounds of Hazardous Waste per pound of Production

WHAT IS HAZARDOUS WASTE?

Hazardous waste is a solid waste, or combination of solid wastes, which because of its source, quantity, concentration, or physical or chemical characteristics may either cause harm to human health or the environment; or pose a substantial present or potential hazard to human health or the environment when improperly treated, stored, transported, or disposed of, or otherwise managed.

To be considered hazardous waste, a material first must be classified as a solid waste. EPA defines solid waste as garbage, refuse, sludge, or other discarded material (including solids, semisolids, liquids, and contained gaseous materials). If your waste is considered solid waste, you must then determine if it is hazardous waste. Wastes are defined as hazardous by EPA if they are specifically named on one of four lists of hazardous wastes (U, P, K or F-listed wastes) or if they exhibit one of four characteristics (characteristic wastes). Each type of RCRA hazardous waste is given a unique hazardous waste code using the letters D, F, K, P, or U and three digits (e.g., D001, F005, P039).

Listed Wastes. Certain wastes are listed as hazardous because they are known to be harmful to human health and the environment when not managed properly, regardless of their concentrations. Waste is considered hazardous if it appears on one of four lists published in the Code of Federal Regulations (40 CFR Part 261). Listed hazardous wastes include toxic (U-listed) or acutely toxic (P-listed) discarded commercial products, wastes from specific (K-listed) sources and wastes from non-specific (F-listed) sources.

Characteristic Wastes. Even if your waste does not appear on one of the hazardous waste lists, it still might be regulated as hazardous waste if it exhibits one or more of the following characteristics:

- **Ignitability.** Ignitable wastes create fires under certain conditions or are spontaneously combustible, and have a flash point less than 60 °C (140 °F).
- **Corrosivity.** Corrosive wastes are acids or bases that are capable of corroding metal containers, such as storage tanks, drums, and barrels.
- **Reactivity.** Reactive wastes are unstable under “normal” conditions. They can cause explosions, toxic fumes, gases, or vapors when mixed with water.
- **Toxicity.** Toxic wastes are wastes that have the ability to leach water containing regulated levels of certain toxic constituents (as listed in 40 CFR 261.324). There are 43 toxic metals, organics and pesticides on the list. Toxicity is determined by testing leachate from your waste using a laboratory procedure called the Toxicity Characteristic Leaching Procedure (TCLP) or by knowing that your waste contains regulated levels of the toxic constituents.

EXAMPLES OF WHERE HAZARDOUS WASTE IS GENERATED

Hazardous waste can be generated by any person whose act or process produces hazardous waste identified or listed in [RCRA 40 CFR] Part 261 or whose act first causes a hazardous waste to become subject to regulation. At a chemical facility, potential areas for hazardous waste generation include:

- Research and development lab – spent solvents, test residues
- Process waste – production byproducts, spent solvents, reactor cleanout, filter cake
- Storage or sedimentation tank - tank sludge
- Spent furnace refractory
- Other – drum washout, filtrates, used personal protective equipment, off-specification products, air pollution control filters

In addition, EPA’s website <http://www.epa.gov/epawaste/hazard/generation/index.htm> contains additional information on hazardous waste generation.

EXAMPLES OF WHAT IS NOT CLASSIFIED AS HAZARDOUS WASTE AS DEFINED BY EPA:

EPA provides a variety of examples in its guidance of what is not classified as hazardous waste.

Examples include:

- Infectious waste
- Construction debris
- Office waste
- Empty used oil filters
- Packaging material
- Rinsed drums

Many of these examples are covered by other EPA regulations. In addition, EPA’s website <http://www.epa.gov/epawaste/hazard/index.htm> contains additional information on hazardous waste identification, characterization, and delisting, including links to proposed and final waste determinations/exclusions, as well as rulemakings pertaining to the hazardous waste identification process.

OTHER RESOURCES

The Environmental Protection Agency (EPA) has published a number of resources on hazardous waste:

1. EPA’s Biennial Report, Form 8700-13a - <http://www.epa.gov/wastes/inforesources/data/br15/br2015rpt.pdf>
2. Uniform Hazardous Waste Manifest Form - Form 8700-22 - <http://www.epa.gov/epawaste/hazard/transportation/manifest/pdf/newform.pdf>
3. “Managing Your Hazardous Waste: A Guide for Small Businesses” - <http://www.epa.gov/wastes/hazard/generation/sqg/handbook/k01005.pdf>
4. “Resource Conservation and Recovery Act (RCRA) Orientation” - <http://www.epa.gov/wastes/inforesources/pubs/orientat/rom1.pdf>
5. RCRA Training Modules - <http://www.epa.gov/wastes/inforesources/pubs/rmods.htm>
6. EPA’s Introduction to Hazardous Waste Identification - <http://www.epa.gov/wastes/inforesources/pubs/training/hwid05.pdf>
7. Resource Conservation and Recovery Act (RCRA), Superfund & Emergency Planning and Community Right-To-Know Act (EPCRA) Call Center Training Module - Introduction to Definition of Solid Waste and Hazardous Waste Recycling- <http://www.epa.gov/wastes/inforesources/pubs/training/olaw.pdf>

Appendix I - Instructions and Reporting Form for Training Metric

GENERAL INFORMATION

SOCMA member companies participating in the Enhanced Performance Tier of the ChemStewards program reported “percentage of training elements implemented” beginning in 2007.

Training is important to achieve the goals, objectives and targets a company establishes as well as compliance with legal and other environmental, health, safety and security (EHS&S) requirements. Characteristics of training include (a) a system to identify and communicate training needs for employees through a review of regulatory requirements and identified operational risks that require employee involvement or actions to manage properly (b) establishing training goals against those identified needs such as developing a master training plan and targeting employees for skill development, (c) executing training programs to address training needs that include competency testing where appropriate, (d) a system to track completed training requirements and to make this information readily available, and (e) a management review against the training needs and goals established to meet those needs. Companies train employees on EHS&S areas because legal compliance requires that certain job functions be trained; every employee can have potential impacts on the effectiveness of the management system; and, training is necessary to ensure that employees have the appropriate knowledge conduct their EHS&S responsibilities.

All personnel should receive appropriate training to be competent at their work. Training can include both classroom training and on-the-job training and should be tailored to the different needs of various levels or functions in the facility.

The training metric measures the development of a member’s training system. The member company decides what development level is appropriate for the EHS&S requirements at its sites. Member company training systems are designed to ensure that employees have the capability of meeting their EHS&S responsibilities and the system includes employee and other stakeholder input.

INSTRUCTIONS - SOCMA TRAINING METRIC EXCEL SPREADSHEET

The training metrics is broken down into 16 elements that follow a “plan-do-check-act” process. For each item, you will rate if your facility has:

- No system implemented
- System developed but not fully implemented, i.e., needs and goals are being identified and training has commenced, but not all employees have been trained and tested. This level assumes that basic regulatory training has been satisfied, but the full training system has not been applied to all affected employees.
- System developed and one assessment cycle has been completed, i.e., all affected employees identified for training have been trained, tested for competency, and the overall training program has been reviewed as least once against training needs and goals.

A more detailed description for each of the 16 elements is below.

Training: Planning

1. A training plan is developed to meet the EHS&S regulatory and risk-based training needs.

The objective of this element is to ensure that a training plan is created to both meet the EHS&S regulatory requirements that apply to the facility and to meet any risk-based training needs (ex., based on the products (toxic chemicals, flammable materials) used, processes run at a facility, or needs based on a previous incident or accident history). A facility may complete a training needs analysis and training schedule identifying the type of training needed by personnel according to job function.

2. EHS&S risk-based training needs are identified through new product/process and change control procedures.

When facilities produce new products, implement new processes or change current product or processes, facilities have procedures to ensure that these changes do not result in injury or damage. The objective of this element is to ensure that as part of the management of change process, EHS&S risk-based training needs are identified through new product/process or change control procedures. For example, before a facility begins producing a new product, the facility follows its procedures to identify if any additional regulatory training is required (based on the nature of the material, special packaging requirements or shipping needs) for employees.

3. A master EHS&S training plan based on identified needs is developed; the plan documents topics, frequency and affected employees.

Once a facility identifies what types of training are needed by its employees, the next step is to develop a master EHS&S training plan. The objective of this element is to ensure that the training plan documents what topics personnel need to be trained on (including both general and job specific training), how often the training should occur and which employees require training on each topic.

4. Corrective & preventive actions from inspections, audits, employee suggestions, and incidents are used to update the training plan.

A corrective and preventive action is taken to address and rectify (correct or prevent) a non-conformance with a facility's EHS&S programs including compliance with EHS&S laws and regulations. When corrective and preventive actions are identified during inspections, audits, employee suggestions and incidents, this information should be taken into account and used to update the training plan (ex., if a series of forklift incidents occur, add a mandatory refresher forklift training session to the training plan). The objective of this element is to ensure that corrective and preventive actions are used in updating the training plan so that the training plan covers the needs of the employees.

Training: Delivery

1. Risk-based training is conducted for all affected employees prior to job assignment and periodically per the site's training plan.

All personnel should receive appropriate training so that they can be competent at their job. Employees should receive training as per regulatory and company requirements. Employees also should understand the potential consequences of not following EHS&S requirements (such as employee danger, security risks, spills, releases, and fines or other penalties). The purpose of

this element is for facilities to conduct risk-based training for employees prior to any job assignment they are given (ex., training conducting as part of new employee orientation) and as per the site's training plan schedule.

2. Training is documented to capture the training date, trainer and trainee information, an outline of material covered, and trainee competency.

A key component of training is establishing program documentation to track when training was provided and who participated in the training. The objective of this element is to document when the training occurred, who was the trainer, which employees (i.e., trainees) participated, what subject matter was covered and confirming the competency of the trainee.

3. Training regularly includes a discussion of the organization's EHS&S goals & objectives, management systems, and ChemStewards.

All personnel should receive appropriate training so that they can be competent at their work. Training is needed both in technical work and for general awareness on the part of all employees. To enhance worker competency, every employee should be aware of the organization's EHS&S goals and objectives, management systems in place and the ChemStewards program. An example could include scheduling one safety meeting per year where the topics covered include the organization's EHS&S goals & objectives, management systems, and ChemStewards are reviewed.

4. Training is conducted by a trainer qualified by experience or training using criteria established by the facility.

Determining who is qualified to act as a trainer on a particular EHS&S or risk-based topic is important to ensure that he or she is competent to train your facility's employees. Trainer qualifications may include education, work experience and special training the individual received. The objective of this element is to confirm that training provided at a company is given by an instructor who is qualified based on experience, training or criteria established by the facility.

Training: Checking

1. Competency is assessed and documented for all risk-based and regulatory training.

A facility should measure and document the competence of individuals who complete risk-based and regulatory training. Examples may include requiring an employee to take a written exam after completing hazard communication training or requiring a wastewater treatment operator to provide evidence of competence on the basis of having at least a high school diploma, one year of experience as an assistant operator, and an up-to-date job training record (ex., waste water treatment and disposal refresher, storm water pollution prevention plan training, and integrated emergency response and spill prevention control and countermeasure plan training). The objective of this element is to confirm that when an individual completes risk-based or regulatory training, he or she is competent regarding the subject matter and that competency is documented.

2. Re-training is required when competency is not demonstrated or training expired; employees are removed from exposure until training is current.

The objective of this element is to ensure that if an individual does not demonstrate that he or she is competent after completing risk-based or regulatory training or that training has expired, then he or she is either re-trained or removed from exposure until training is up-to-date.

3. Contractors are required to document employee training and competency prior to being allowed to work at the facility.

In addition to all facility personnel receiving appropriate training and proving competency, contractors also must meet these requirements. The objective of this element is to ensure that contractors document employee training activities and document that the employees brought on site are competent before they are allowed to work at a facility. This activity also may include completion of the hiring company's staff orientation. If competency has not been demonstrated or training has expired then the contractor should be removed from exposure until training is current.

4. Trainees routinely complete training session evaluations to provide feedback to trainers on training effectiveness.

Feedback is an important mechanism to determine if the goals of a training session were met and determine if areas of improvement are required. The objective of this element is for individuals who undergo training (i.e., trainees) to regularly complete training session evaluations (ex., evaluation forms) to provide feedback to trainers on the training effectiveness. Effectiveness means the capability of, or success in, achieving a given goal such as the goal of the training session in this case.

Training: Management Action

1. A management-directed periodic training audit is conducted that includes effectiveness of training planning, delivery, and checking.

A periodic check or audit gives a snapshot of how a facility's training program is working. The objective of this element is to conduct a periodic check to confirm the effectiveness of a facility's:

- *Training planning – is the facility planning for the training programs based on regulations or a facility's risk-based assessment? How effective is training planning? Are courses delivered on schedule to appropriate personnel?*
- *Delivery – is the information being communicated to employees in an easy-to-understand format? Do employees complete training sessions that have met the company's goals and requirements?*
- *Checking – Does the facility regularly check the effectiveness of its training programs? Are changes to training programs made based on feedback provided by the employees?*

2. Senior management uses audit findings to determine if training needs are met and future resource needs.

A company's leadership commitment to training is a key to the success of the organization. Based on the findings of the periodic audit to verify the effectiveness of training planning, delivery and checking, the objective of this element is for senior management to use these findings to determine if training needs are met and resources (both staff and monetary) are adequate. This review allows management a snapshot of the effectiveness of meeting a company's training needs and details about where improvements should occur. The goal of this review should be to allow management to bring about overall improvements to a company's training efforts.

3. Senior management includes training in an annual EHS&S review of the organizations goals & objectives.

Each year many facilities set goals and targets including overall time frames and responsibilities for accomplishments. The goals may be based on the organization's significant hazards and risks, its stakeholder input and regulatory, legal and other requirements. The objective of this element is to have senior management include training (i.e., were this year's training needs met as defined by the organization) when reviewing an organization's EHS&S goals and objectives.

4. The contractor's training program is periodically audited.

Training program audits involve evaluating how well an organization is implementing its training programs. Audits are recommended to ensure that a contractor is meeting the hiring company's training requirements as per any agreements between the two organizations. The purpose of this element is to ensure that the hiring company periodically audits the contractor's training program to make sure that the training program meets the requirements of the hiring company.

IMAGE FROM THE SOCMA TRAINING METRIC EXCEL SPREADSHEET

The following pages contain images of the Excel spreadsheet for reporting on the SOCMA Training Metric. This is only an image of the form, do not utilize for data entry. Either the manual forms or the Excel spreadsheet in the database may be used for reporting. When the Excel spreadsheet is used, calculations are performed automatically.

TRAINING METRIC

The training metric measures the development of a member's training system. The member company decides what development level is appropriate for the environmental, health, safety and security (EHS&S) requirements at their sites. Member company training systems are designed to ensure that employees have the capability of meeting their EHS&S responsibilities and the system includes employee and other stakeholder input.

Instructions: Place an "X" in the box that describes the stage of each training characteristic for your training program

No system developed	System developed	
	but not fully implemented	one training cycle completed

A. Training: Planning

A training plan is developed to meet the EHS&S regulatory and risk-based training needs.				
EHS&S risk-based training needs are identified through new product/process and change control procedures.				
A master EHS&S training plan based on identified needs is developed; the plan documents topics, frequency and affected employees.				
Corrective & preventive actions from inspections, audits, employee suggestions, and incidents are used to update the training plan.				
A. SUB-TOTAL			0	0%

B. Training: Delivery

Risk-based training is conducted for all affected employees prior to job assignment and periodically per the site's training plan.				
Training is documented to capture the training date, trainer and trainee information, an outline of material covered, and trainee competency.				
Training regularly includes a discussion of the organization's EHS&S goals & objectives, management systems, and ChemStewards.				
Training is conducted by a trainer qualified by experience or training using criteria established by the facility.				
B. SUB-TOTAL			0	0%

C. Training: Checking

Competency is assessed and documented for all risk-based and regulatory training.				
Re-training is required when competency is not demonstrated or training expired; employees are removed from exposure until training is current.				

Contractors are required to document employee training and competency prior to being allowed to work at the facility.				
Trainees routinely complete training session evaluations to provide feedback to trainers on training effectiveness.				
C. SUB-TOTAL				0 0%

D. Training: Management Action

A management-directed periodic training audit is conducted that includes effectiveness of training planning, delivery, and checking.				
Senior management uses audit findings to determine if training needs are met and future resource needs.				
Senior management includes training in an annual EHS&S review of the organizations goals & objectives.				
The contractor's training program is periodically audited.				
D. SUB-TOTAL				0 0%

TOTAL	0%
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Current rating falls short of minimum tier 2 requirements

Appendix J - Instructions and Reporting Form for Product Stewardship Metric

GENERAL INFORMATION

SOCMA member companies participating in the Enhanced Performance Tier of the ChemStewards program reported “percentage of product stewardship elements implemented” beginning in 2007.

Product stewardship, an important part of ChemStewards, suggests that a company should manage its products from the cradle to the grave. It is designed to make health, safety and environmental protection an integral part of the design, manufacture, distribution, use, recycle and disposal of products.

Implementing product stewardship affects virtually every function of a company, including research and development, engineering design, manufacturing, distribution, sales and marketing. Done properly, product stewardship fosters the sharing of information about the proper use, storage and disposal of products with multiple groups such as customers, suppliers, distributors and contractors. Product stewardship applies to all stages of the product lifecycle and is designed to include as much of the user chain as necessary to help prevent harm to people or the environment.

The product stewardship metric measures the development of a member’s product stewardship system. The member company decides what development level is appropriate for the product stewardship requirements for their products and processes. Member company product stewardship systems are designed to ensure that environmental, health, safety and security (EHS&S) protection is made an integral part of designing, manufacturing, supplying and recycling or disposing of products.

INSTRUCTIONS - SOCMA PRODUCT STEWARDSHIP METRIC EXCEL SPREADSHEET

The product stewardship metrics is broken down into 16 elements that follow a “plan-do-check-act” process. For each item, you will rate if your facility has:

- No system implemented
- System developed but not fully implemented, i.e., the basic framework for conducting product risk assessments has been established (hazard and use data are being collected and assessed), product stewardship goals have been established, information is being developed and is being relayed to stakeholders, risk reduction measures are beginning to be implemented, partners are being qualified, and management is reviewing performance against goals, but not all products have been through the subject to the full assessment and review
- System developed and one assessment cycle has been completed, i.e., all current products have been subjected to the full cycle of risk assessment and review and new products are subjected to this process before they are commercialized.

A more detailed description for each of the 16 elements is below.

Product Stewardship: Planning

1. Product regulatory requirements of manufacturing, distributing, and disposing products are identified through a review of applicable regulations.

Facilities should have a process for identifying, having access to and reviewing applicable regulations which may include federal, state and local rules/regulations. Many sources such as regulatory agencies, trade associations, public libraries and the Internet are available for obtaining information about applicable regulations. The objective of this element is ensure that a

facility has identified which requirements for manufacturing, distributing and disposing of its products apply to the facility.

2. Product EHS&S risks (other than regulatory) are identified through a risk and exposure identification process that considers product life cycle.

In addition to regulatory risks, when a facility conducts a risk assessment and exposure identification process for a product they may determine that other, non-regulatory EHS&S risks may occur such as concerns with chemical reactivity, dust explosivity, or long term degradation or stability. The objective of this element is to determine if a facility has a process to identify risk and exposure that considers product lifecycle including product design, manufacture, distribution, usage, recycling and disposal.

3. The risk assessment process is used to rank manufacturing, distribution, and disposal risks and identify those needing risk reduction.

When a facility identifies its product stewardship risks, the next step is to determine the probability of the risk occurring, the severity if the risk occurred and any other factors important to the facility. Using these criteria a facility can determine relative significance by numerical scoring or by discussion and judgment of the facility. The objective of this element is for a facility to rank its manufacturing, distribution and disposal risks and identify if any item requires a risk reduction plan to decrease or eliminate the risk's potential consequences.

4. A risk reduction plan to manage manufacturing, distribution, and disposal risks is developed with responsibilities and target dates.

For those risks that require a risk reduction plan, the objective of this element is to make sure that the plan includes identifying who is responsible for completing each task and target dates for task completion.

Product Stewardship: Implementation

1. A system to track and regularly report to management the status of the risk reduction plan is implemented.

When a facility develops goals and objectives such as a risk reduction plan with set targets, in order to ensure success, an organization needs to set time frames, determine responsibilities and provide regular updates to key personnel. The objective of this element is to ensure that a facility has a process to track the status of any risk reduction plans and also regularly reports the status of the project to management. System tracking may include documenting if program tasks/steps were completed on time by responsible personnel and documenting how successfully each step is being achieved. Regular reports may include both written and oral updates.

2. A system to maintain and keep current EHS&S information developed from the risk assessment process is implemented.

A risk assessment process includes identifying, assessing and evaluating risks for new products/processes, existing products/processes, changes to existing products/processes and for transport, distribution, and use of raw materials and finished products. Based on the findings from the assessments, the objective of this element is to ensure a facility has a system to maintain any EHS&S findings and to make sure that the findings are kept current.

3. A procedure exists to ensure all product MSDS, label, and supporting product stewardship information is reviewed within five years.

Regular reviews of a facility's Material Safety Data Sheets (MSDSs), labels and product stewardship information is important to ensure that the information a facility has, uses and provides to others is current. At a minimum, a facility should have a procedure to review all product stewardship information within five years. Many facilities have a system that triggers a review of all product literature when information sources, such as MSDSs, are updated to ensure consistency in the message and information communicated.

4. The change control procedure for processes and products includes product stewardship considerations.

Many facilities have management of change procedures to ensure that permanent or temporary changes to chemical process units that are outside original/existing design specifications or products do not result in injury and damage. Changes must be recognized and reviewed before implementation. The objective of this element is to ensure that your facility's change control procedure includes product stewardship considerations (ex., how a product change might affect transportation, distribution or disposal efforts for that product).

Product Stewardship: Communicating

1. An employee awareness program which encourages employee feedback on improvement opportunities is implemented.

When implementing a product stewardship program, one of the facility's best partners can be its employees. Some of its employees may already be acting as the facility's liaison with suppliers, transporters, distributors, customers or stakeholders by virtue of their positions. This element means that your facility has a program in place to educate its employees about product stewardship issues (ex., product information, transportation and handling of materials, recycling/disposal issues, etc.) and to encourage employee feedback. The program may include plant postings, newsletters, safety meetings or employee meetings to keep product stewardship visible.

2. A system to capture and track third-party EHS&S incidents and communicate these back to the risk assessment process is implemented.

This element states that your facility has a system to capture and track any third-party (ex., carriers, warehouses, contractors, suppliers, disposers) EHS&S incidents (ex., spills) with your facility's products and have a mechanism to communicate these incidents back to the risk assessment process (both within the facility and externally to the third-party).

Some companies have a formal feedback mechanism to channel information back to the facility. The key is to establish a system that facilitates two-way communication with third-parties regarding EHS&S incidents. This information should be communicated to appropriate internal resources to identify follow-up actions when necessary.

3. MSDS meet ANSI Z400.1 for MSDS Preparation or equivalent EU/ISO standards; Labels meet ANSI Z129.1 for Precautionary Labeling.

This element states that your facility's Material Safety Data Sheets (MSDS) meet the ANSI Z400.1 standard for "Hazardous Industrial Chemicals - Material Safety Data Sheets – Preparation" or equivalent European Union (EU) or International Organization of Standardization (ISO) standards. The ANSI Z400.1 standard applies to the preparation of MSDSs for chemicals and materials used under occupational conditions. The standard presents basic information on how to develop and write MSDSs that are complete, clear and consistent. It also identifies information that must be included to comply with the Hazard Communication Standard.

In addition, as per this element, your facility's labels must meet the requirements of ANSI Z129.1 for "Hazardous Industrial Chemicals – Precautionary Labeling." This standard establishes principles and guidelines for the preparation of precautionary labeling for hazardous industrial chemicals.

4. Appropriate risk information is communicated or made available for stakeholders such as carriers, third party warehouses, contractors, suppliers, disposers, neighbors or the community.

The objective of this product stewardship element is to ensure that your facility communicates risk information to its stakeholders as appropriate. Commensurate with risk, each facility should identify what information should be communicated or made available and provide information that can be utilized by the stakeholder. This information may include providing EHS&S information about raw material characteristics, potential product hazards, past experiences with the production process, any requirements for waste handling or disposal and emergency response information. Information may also include that which is required under regulations (ex., MSDSs), as well as other product literature.

Product Stewardship: Checking and Management Action

1. A procedure to check and qualify carriers, distributors, suppliers, and toll manufacturers based on EHS&S criteria is implemented.

The objective of this element is to implement a procedure to check and qualify carriers, distributors, suppliers and toll manufacturers to ensure these third-parties have sound EHS&S practices and meet the member facility's EHS&S requirements. Facilities should assess the capability of each third-party as appropriate based on individual facility requirements.

2. Management considers product stewardship issues when generating EHS&S goals.

Each year many facilities set goals and targets including overall time frames and responsibilities for accomplishments. The goals may be based on the organization's significant hazards and risks, its stakeholder input and regulatory, legal and other requirements. The objective of this element is to have management also consider product stewardship issues when developing a facility's EHS&S goals. Product stewardship issues may include EHS&S issues around the design, manufacture, distribution, use, recycle and disposal of products.

3. A management-directed periodic audit is conducted to verify the effectiveness of risk assessment, risk reduction plans, and communication.

A periodic check or audit gives a snapshot of how a product stewardship program is working at a facility. The objective of this element is to conduct a periodic check to confirm the effectiveness of a facility's:

- *Risk assessment process - Does the assessment process include hazard determination and an assessment of material uses and potential exposures? Does the risk assessment process include key functional areas such as research and development, distribution/logistics, production operations, and other areas? Does the risk assessment process meet the facility's requirements?*
 - *Risk reduction plans – How effective is the facility in meeting its risk reduction goals and targets? Should new areas for risk reduction be considered based on new products or processes?*
 - *Communication – How effectively is the facility meeting its goals to communicate risk assessment efforts and plans to employees and other key stakeholders? Does the facility have clear lines of communication to address risks with employees, suppliers, distributors and other third-parties? What changes should be made to the communication plan based on changes to the facility's products or processes?*
4. Senior management uses audit findings to determine if Product Stewardship goals and objectives are met and resources are adequate.

A company's leadership commitment to product stewardship is a key to the success of the initiative within the organization. Based on the findings of the periodic audit to verify the effectiveness of risk assessment, risk reduction plans, and communication, the objective of this element is for senior management to use these findings to determine if set product stewardship goals and objectives are met and resources (both staff and monetary) are adequate. This review allows management a snapshot of how product stewardship is functioning and details about where improvements should occur. The goal of this review should be to allow management to bring about overall improvements to a company's product stewardship efforts.

IMAGE FROM THE SOCMA PRODUCT STEWARDSHIP METRIC EXCEL SPREADSHEET

The following pages contain images of the Excel spreadsheet for reporting on the SOCMA Product Stewardship Metric. This is only an image of the form, do not utilize for data entry. Either the manual forms or the Excel spreadsheet in the database may be used for reporting. When the Excel spreadsheet is used, calculations are performed automatically.

PRODUCT STEWARDSHIP METRIC

The product stewardship metric measures the development of a member's product stewardship system. The member company decides what development level is appropriate for the product stewardship requirements for their products and processes. Member company product stewardship systems are designed to ensure that environmental, health, safety and security (EHS&S) protection is made an integral part of designing, manufacturing, supplying and recycling or disposing of products.

Instructions: Place an "X" in the box that describes the stage of each product stewardship characteristic for your product stewardship program

No system developed	System developed	
	but not fully implemented	one assessment cycle completed

A. Product Stewardship: Planning

Product regulatory requirements of manufacturing, distributing, and disposing products are identified through a review of applicable regulations.				
Product EHS&S risks (other than regulatory) are identified through a risk and exposure identification process that considers product life cycle.				
The risk assessment process is used to rank manufacturing, distribution, and disposal risks and identify those needing risk reduction.				
A risk reduction plan to manage manufacturing, distribution, and disposal risks is developed with responsibilities and target dates.				
A. SUB-TOTAL			0	0%

B. Product Stewardship: Implementation

A system to track and regularly report to management the status of the risk reduction plan is implemented.				
A system to maintain and keep current EHS&S information developed from the risk assessment process is implemented.				
A procedure exists to ensure all product MSDS, label, and supporting product stewardship information is reviewed within five years.				
The change control procedure for processes and products includes product stewardship considerations.				
B. SUB-TOTAL			0	0%

C. Product Stewardship: Communicating

An employee awareness program which encourages employee feedback on improvement opportunities is implemented.				
A system to capture and track third-party EHS&S incidents and communicate these back to the risk assessment process is				

implemented.				
MSDS meet ANSI Z400.1 for MSDS Preparation or equivalent EU/ISO standards; Labels meet ANSI Z129.1 for Precautionary Labeling.				
Appropriate risk information is communicated or made available for stakeholders such as carriers, third party warehouses, contractors, suppliers, disposers, neighbors or the community.				
C. SUB-TOTAL				0 0%

D. Product Stewardship: Checking & Management Action

A procedure to check and qualify carriers, distributors, suppliers, and toll manufacturers based on EHS&S criteria is implemented.				
Management considers product stewardship issues when generating EHS&S goals.				
A management-directed periodic audit is conducted to verify the effectiveness of risk assessment, risk reduction plans, and communication.				
Senior management uses audit findings to determine if Product Stewardship goals and objectives are met and resources are adequate.				
D. SUB-TOTAL				0 0%

TOTAL

0%

Current rating falls short of minimum tier 2 requirements