

Tools for Optimizing Chemical Management

THE CHEMICAL STRATEGIES PARTNERSHIP (CSP) has developed a new Manual to help your firm measure the real cost of using chemicals in your manufacturing operations. This information can then be used to reduce both chemical costs and use.

The Manual, *Tools for Optimizing Chemical Management*, (see Figure 1) helps you to explore whether implementing a chemical management service program—a program that puts supplier expertise to work in reducing total chemical costs and volumes—makes sense for your firm.

By “real” and “total” chemical costs, we include ALL the costs tied to chemical use, including:

- procurement
- compliance
- inventory
- training
- delivery
- disposal of chemicals

These costs are significant and often hidden. Several studies have revealed that chemical management costs can range from *1 to 10 times* the purchase cost of chemicals. Few companies realize and track these total chemical management costs—and fewer utilize supplier know-how to reduce chemical related costs and volumes.

The CSP Manual provides guidance on developing a chemical service program. A chemical service program involves strategic partnering with a chemical service provider (Tier 1 supplier) who performs some or all of the chemical management activities for your facility.

A chemical service provider may be a chemical supplier, waste hauler, or environmental engineering firm that offers a range of services to manage your company’s chemicals. Some of these services include:

- Purchasing and delivering chemicals
- Maintaining inventory
- Improving process efficiency
- Collecting data for environmental monitoring and reporting
- Waste collection and disposal

A chemical service approach helps to shift the supplier’s profitability motive from “sell more” to “manage better.” That translates into decreased chemical use, costs, and liabilities for your company.



Figure 1:
*Tools for
Optimizing
Chemical
Management
Manual*

A NEW MODEL TO IMPROVE CHEMICAL MANAGEMENT

The key to this new chemical services model is a change in the traditional relationship between chemical suppliers and their customers: instead of providing chemicals, suppliers provide the function of the chemicals, or chemical services. That's a major shift from current practice with major implications. The model is compatible with many emerging business management trends: strengthening a

company's core business, outsourcing support functions, and building strong alliances with suppliers.

Here's how the shift works. In traditional supplier-customer relationships, the chemical supplier's profitability is a function of the volume sold. The more chemicals sold the higher the profit for the supplier. Meanwhile, the buyer has an opposite incentive—to reduce costs or the amount of chemicals purchased.

In the chemical service model, suppliers become chemical service providers and are paid for successfully delivering and managing chemicals. Thus, the supplier's profitability is based on better performance, not on selling more chemicals.

By aligning the incentives of suppliers and customers, both can achieve bottom line benefits via reduced chemical use, costs, and waste.

SUCCESSFUL EXAMPLES

Several companies within the automotive and electronics industries have implemented chemical service programs. Some examples include:

- General Motors (GM), together with their chemical service provider, reduced cost, chemical

variety, and associated risks. One GM assembly plant achieved a 43% reduction in the number of chemicals used and total savings of more than \$750,000 a year.

- Navistar International and their chemical service provider developed opportunities for reducing, cutting, and grinding fluid waste. The chemical service provider installed a process to clean and reuse the fluids, reducing new fluid use by 50%. This lowered the cost of fluid waste by 90%.
- The chemical service provider for a semiconductor manufacturing facility helped cut its chemical consumption by 50% over 2 years and instituted changes resulting in savings of approximately \$200,000 a year.
- One facility of an aerospace company achieved total savings of \$1.1 million in chemical management costs during the first year of their chemical service program.

WHY CHANGE YOUR CHEMICAL MANAGEMENT SYSTEM?

Chemical management begins with procurement and extends through use, treatment, and disposal. These activities make up the chemical lifecycle within your organization.

At each stage of the lifecycle, a company incurs quantifiable costs of labor, materials, equipment, liability, safety training, and compliance efforts (see Figure 2).

Unfortunately, design, production, and management decisions regarding chemicals are typically made without consideration of all these hidden costs. Talking with several companies, CSP has seen the cost of chemical management range from \$1.00 to \$10.00 for every dollar of chemical purchased. That means for a facility purchasing \$7 million in chemicals, the additional cost of using

The CSP manual provides detailed guidance to help you determine what your true chemical costs are using the chemical lifecycle framework.

Figure 2: Chemical Lifecycle



chemicals could be \$7 million to \$70 million.

These costs are often higher than expected due to the concealed expenses behind chemical use, such as compliance, safety, and inventory carrying costs.

Aside from lowering costs, some of the primary reasons companies launch a strong effort to improve their chemical management include:

- Freeing up floor space for manufacturing
- Improving staff productivity by eliminating chemical management tasks from their overall responsibilities
- Increasing employee safety
- Reducing chemical use to drop emissions below environmental reporting thresholds
- Leveraging the knowledge resources of a supplier
- Reducing the number of accidents on site
- Reducing liability

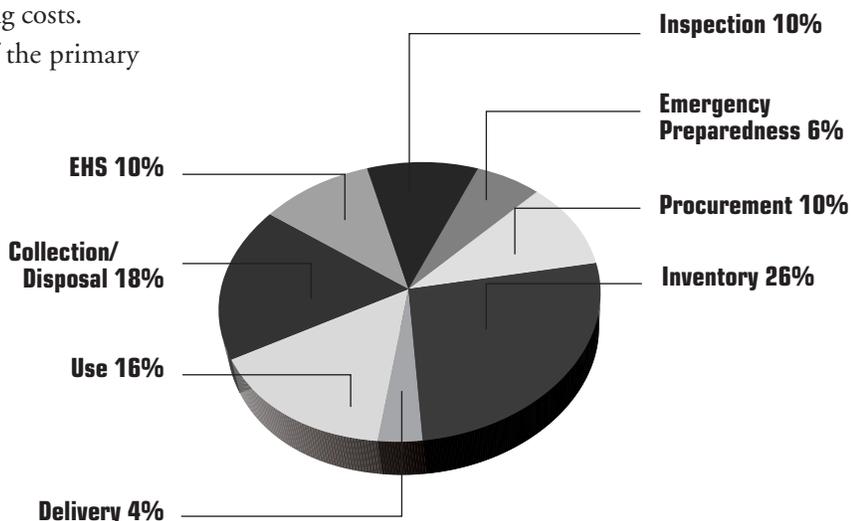
WHO IS CSP? WHAT DOES THE MANUAL OFFER?

CSP, a project of the Tides Center, is a non-profit organization working with companies to help reduce their use and release of chemicals. We have been working with companies to help them value their total chemical management costs and develop chemical service programs. The Manual outlines the CSP approach and provides step-by-step guidance, as well as specific tools, to help you develop and implement your own chemical service program. The Manual will help your company answer questions like:

- What do chemical management services include?
- Should we consider developing a chemical service program?
- What baseline information is necessary?
- What are our total chemical management costs?

(see Figure 3)

Figure 3: Chemical Management Cost Analysis



Sample Data

- How can I develop the environmental and cost justifications for upper management?
- What services are my providers capable of providing?
- What steps do I take to successfully implement a chemical service program at my company?

ISSUES TO CONSIDER

If your company does not already engage in outsourcing or strategic partnerships with some of your suppliers, implementing a chemical service program will likely constitute a major cultural shift for your company. In addition, initiating a chemical service program takes an investment of time and resources, but in the majority of cases, the benefits significantly outweigh the costs.

The Manual provides the information and tools you need to assess the feasibility of a chemical service program for your company.

There are four basic steps in assessing your current chemical management system and developing a chemical services program. Listed below are the tools provided in the Manual for each step.

1 PLANNING

- Presentation: Introduction to Chemical Services
- Workplan: Developing a Chemical Service Program

2 BASELINING YOUR CHEMICAL COSTS

- Mapping Lifecycle Stages and Organizational Functions
- Chemical Management Cost Analysis Spreadsheet (*see Example 1*)

3 DEVELOPING A PROGRAM USING BASELINE DATA

- Chemical Service Case Studies
- Guidance on Key Issues to Consider in Developing an RFP
- Identifying Performance Measures

4 ENGAGING A CHEMICAL SERVICE PROVIDER

- Guidance on Compensation Mechanisms
- Workplan: Selecting a Service Provider
- Guidance on Evaluating the Costs and Benefits of the Proposals
- Presentation: Cost Analysis Results and Recommended Action

If you are interested in obtaining a copy of the CSP Manual, *Tools for Optimizing Chemical Management*, please contact CSP at 415-421-3405.

The Chemical Strategies Partnership/Tides Center is a non-profit organization founded by the Pew Charitable Trusts with major support from the Heinz Endowments.

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*Example 1:
The analysis tool for baselining your total chemical management costs.*

