

Centralized Chemical Hazard & Environmental Management Suite (C-CHEMS)

CCS specializes in environmental, health and safety compliance, chemical security, and hazardous material management services for academic institutions, federal agencies, and private industry. Our **Relational Chemical and Product Database (R-CPD)** is the most comprehensive available. Our **Centralized Chemical Hazard and Environmental Management System (C-CHEMS)** software is a unique, holistic, modular capability that generates hundreds of compliance reports, diverse chemical usage analyses, and a wide array of safety and health assessments. Our customized turnkey implementation and maintenance services not only maximize benefits from our R-CPD and C-CHEMS, but alternatively provide integration with client pre-existing databases and other software options. CCS clients can achieve pollution prevention, hazardous materials procurement and waste minimization, EPCRA/ RCRA/ Air/ Water/ Pesticides/ Toxics compliance, and "environmentally preferable" product substitutions, all within our single, time-tested system.

The initial construction of the R-CPD began in 1985 with the current compilation of over 75,000,000 data elements extracted from over 1,000 sources for chemicals, chemical products, and hazardous material regulations. We have also incorporated an index of the Department of Defense (DoD) munitions characterization database. The power of these relational databases rests in their breadth and depth, in their purity and in their cross functionality: a single source for homeland security, environmental, health, safety, regulatory, and materials management information. CCS centralized databases are a "sole source" asset—no other company in the U.S. has this capability. The R-CPD is composed of the **Master Chemical Reference Data**, the **Master Product Reference Data**, and the **Munition Items Disposition Action System (MIDAS) Index**. The R-CPD is used to quickly create the customized databases used in the C-CHEMS Suite.

Master Chemical Reference Data

Cross Reference Dictionary & Regulatory List of Lists The Chemical Cross Reference Dictionary contains 550,000 records of purified CAS numbers and their associated synonyms. This file facilitates materials management data searches and product substitution research. The Regulatory List of Lists file is comprised of over 700 international, Federal, state and local regulated chemical lists and their associated data. C-CHEMS modules compare a single chemical inventory file against these lists and generate a multitude of regulatory reports, utilized by logistics, environmental/ safety/ health, and chemical security professionals, as well as first responders. Redundant data management across departments is eliminated, resulting in significant labor savings to the client and accelerated systems implementation.

Chemical Ratings The CCS chemical rating system utilizes a time-tested SOP and automates "green," or "environmentally preferable," chemical, process, product and munition analyses. This numeric, complete hazard rating system provides a basis for quantitatively defining acute and chronic health, air/water/soil environmental impacts, and fire, corrosivity, radioactivity, reactivity/explosivity special hazards associated with more than 260,000 chemicals. These ratings form the basis of our "green," security, chemical and reactive analytical capabilities.

Chemical Compound Dictionary Several federal regulations (e.g., TRI, HAPs) require that compliance reports include chemical compounds (i.e., chromates). This database represents the only known resource for identifying which specific chemicals fall within each generic regulatory category. This dictionary correlates chemical names, synonyms, and CAS numbers for over 4,000 chemicals within nearly 60 different chemical compound categories.

Master Product Reference Data

MSDS Images & Indexes This file contains images with extensive analytical indexes for nearly 75,000 MSDSs and access to millions of online MSDSs. These MSDS images represent over 90,000 products and a site-to-site redundancy rate of >40%. The MSDS index corrects the 15–30% errors typically found in MSDSs. A centralized MSDS image file with indexes fulfills all OSHA compliance access requirements. This file not only represents a *large* potential labor maintenance savings for the client, but also assures that the MSDS file correlates with the inventory, and that MSDSs remain current.

Product Item Index Our product description file is the single largest table in our entire database. The 6,900,000 unique identifiers (from NSN to Product Name, and beyond) provide the means for accurately identifying and evaluating the chemical product items represented in this table. This file enables CCS to easily correlate product MSDS and container names, unlike some other resources that utilize only the MSDS name. Relational linkages to the MSDS Images & Indexes, Product Components, and Manufacturer Files provide a multi-dimensional analytical capability.

Product Components CCS has compiled over 3,000,000 specific descriptors for the 300,000 product components in this file. CCS has utilized our purified Cross Reference Dictionary to correct the 20–25% errors in manufacturer MSDS component information, thereby providing a highly purified resource. The purified CAS numbers in this file are the initial linkage between our massive **Master Product Reference Data** and our highly-specific **Master Chemical Reference Data**.

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Manufacturer File CCS has compiled the largest, purified chemical product manufacturers table currently available. Over 265,000 reference details have been accumulated for over 10,000 different manufacturers. We know what address retrieves the MSDS, in contrast to the address for the product manufacturing site. We have compiled name changes from corporate buyouts, through the generations, or from mergers. We even have Cage Numbers for our government clients. This database is invaluable for cost effectively identifying the source for a current MSDS, for a discontinued product MSDS, or for kit parts MSDSs.

Munition Items Disposition Action System (MIDAS) Index

MIDAS is a government-owned munitions characterization database available as an index to CCS. MIDAS identifies munition components, parts, materials, chemicals and elements in each characterized munition. CCS has provided munition characterization support services since 1999. Thus, the enhanced MIDAS capabilities not only provide the most accurate munitions information available for recycling, recovery, reuse and disposal of unwanted munitions, but also now provides information for environmental, occupational health and safety compliance and risk assessments

The Centralized Chemical Hazard and Environmental Management Suite (C-CHEMS) Our unique modular, or Web-enabled software system was developed to effectively track material movement and simultaneously maximize analyses from information in the centralized database. C-CHEMS includes 19 options for site data acquisition modules, each connected to a customized chemical/product database that resides in a single Web server. The concept is straightforward: maintain real-time inventories and query this information against an intelligent data source. C-CHEMS has open deployment with two-way data replication, and contains a secure auditing subsystem, layer inventory processing, bar code scanning and document imaging support.

Centralized Data Repositories C-CHEMS utilizes the Internet to provide a two-way information deployment capability. This gateway allows for the sharing of key information. First, this system enables the site to communicate data upward from any of the 19 modules: either new data directed to the centralized data maintenance center for verification and/or elaboration, or report tabulations directed upward through the organizational hierarchy for more comprehensive compilations. Second, this module enables higher centers to communicate (often standardized) data downward: either from the centralized data maintenance center to the organization, or analytical results downward through the organizational hierarchy. Leveraging information and technology eliminates redundant database construction, saves significant dollars, and is critical to the success of implementing environmental and hazardous materials management systems across broad organizations. Similarly, this communication process allows parent organizations to "roll-up" information and analyze positive and/or negative hazardous material usage trends within their subordinate sites.

Analytical Reports An accurate, real-time inventory, queried against our intelligent, centralized database, can generate over 400 logistics, chemical usage, site distribution, compliance and/or safety/health reports. The report generation capabilities of C-CHEMS simultaneously support logistics, procurement, regulatory compliance, environmental, safety and health professionals. Reports can reflect data concerning entire organizations, or can be filtered down to an individual building, a specific department, or a single room. The customized inventory and chemical/product reference databases enable C-CHEMS to perform four types of analyses. First, **materials management analyses** facilitate minimized procurement and waste. Second, **regulatory impact analyses** provide location- and product-specific awareness for hundreds of local, state and federal compliance issues. Third, **environmental, health, and safety analyses** provide a quantitative basis to identify pollution prevention opportunities and minimize worker and environmental risks. And finally, automated **environmentally preferable product analyses** establish a mechanism to pre-screen thousands of products, and thereby eliminate risks and pollutants before they are acquired. No other available system offers this breadth of analytical and control capability.

The logo for Chemical Compliance Systems, Inc. (CCS) consists of the letters "CCS" in a bold, green, sans-serif font.

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Centralized & Relational Databases

