

# Chapter 17. Tools and Resources for Planning and Response

EPCRA requires planning for chemical emergencies for every community that has facilities handling hazardous chemicals.

This chapter describes various tools that LEPCs, TEPCs and other planners and responders may use for emergency planning and response.

## 17.1 Computer-Aided Management of Emergency Operations (CAMEO) Software Suite

The CAMEO software suite is a system of software applications used widely to plan for and respond to chemical emergencies. It is one of the tools developed by EPA and the National Oceanic and Atmospheric Administration (NOAA) to assist front-line chemical emergency planners and responders. They can use CAMEO to access, store, and evaluate information critical for developing emergency plans.

The CAMEO system integrates a chemical database and a method to manage the data, an air dispersion model, and a mapping capability. All modules work interactively to share and display critical information in a timely fashion. The CAMEO system is available in Macintosh and Windows formats.

For additional information on CAMEO, please visit <https://www.epa.gov/cameo/what-cameo-software-suite>.

CAMEO is a suite of four core programs that can be used together or separately:

- [CAMEO Data Manager](#)
- [CAMEO Chemicals](#)
- [MARPLOT](#)
- [ALOHA](#)

### 17.1.1 CAMEO Data Manager—Database and Information Management Tool

EPA: <https://response.restoration.noaa.gov/cameochemicals>.

NOAA: <https://response.restoration.noaa.gov/oil-and-chemical-spills/chemical-spills/response-tools/cameo-software-suite.html>.

CAMEO Data Manager is a database application that includes seven modules to assist with data management requirements under EPCRA. The system can be used to store information submitted by facilities, such as storage amounts, locations of chemicals on their site and the facility

personnel contact information. CAMEO Data Manager can also interact with MARPLOT and CAMEO Chemicals. CAMEO Chemicals—Chemical Response Datasheets and Reactivity Prediction Tool: <https://response.restoration.noaa.gov/cameochemicals>.

CAMEO Chemicals is available for free in multiple formats as a website, mobile website, mobile app, and desktop program. All of those formats use the same database, so the content is the same (see the development history for details about released versions). Most of the program functionality is the same across formats as well, as shown in the CAMEO Chemicals feature comparison chart.

Users can search through the extensive chemical database in CAMEO Chemicals to find chemical datasheets with critical response information, including physical properties, health hazards, information about air and water hazards, and recommendations for firefighting, first aid, and spill response. (The chemical datasheets also include links to related National Institute for Occupational Safety and Health (NIOSH) Pocket Guide datasheets and International Chemical Safety Cards.) When you add chemical datasheets to the MyChemicals collection, you can use the reactivity tool to predict what hazards could arise if the chemicals were to mix together.

Additionally, CAMEO Chemicals includes separate datasheets-based United Nations/North American (UN/NA) identification numbers that provide shipping information from the Hazmat Table (49 CFR 172.101) and response information from the Emergency Response Guidebook (ERG), including the ERG Response Guide PDFs in English, Spanish, and French.

CAMEO Chemicals has an extensive chemical database with critical response information for thousands of hazardous substances. Use the simple search to quickly find chemicals of interest by name, Chemical Abstracts Service (CAS) number, or UN/NA number—or use the advanced search with a variety of database fields for more complex queries. CAMEO Chemicals can also be used for:

- Reviewing chemical datasheets for physical properties, health hazards and information about air and water hazards; recommendations for firefighting, first aid and spill response; and regulatory information.
- Obtaining information from additional sources using the U.S. Coast Guard Chemical Hazards Response Information System (CHRIS) manual, the NIOSH Pocket Guide, and International Chemical Safety Cards links on many chemical datasheets.
- Accessing UN/NA datasheets for response information from the ERG and shipping information from the Hazardous Materials Table. ERG Response Guide PDFs are available in English, Spanish, and French.
- Predicting potential hazards that could arise if chemicals were to mix.

Other programs in the CAMEO software suite also deal with chemicals, but they do not have the extensive chemical database that CAMEO Chemicals does. Instead, those programs provide links to related CAMEO Chemicals datasheets, so that if you are working in another part of the CAMEO suite you can quickly switch over to chemical datasheets in CAMEO Chemicals to find out more about the hazardous chemicals.

### **17.1.2 MARPLOT—Mapping Application for Response, Planning, and Local Operational Tasks**

<https://www.epa.gov/cameo/marplot-software>.

With MARPLOT's easy-to-use GIS interface, you can add your own objects (symbols, rectangles, circles, polylines and polygons) to maps, as well as view and edit data associated with those objects. You can choose between several base maps for the background image, and you can customize your map further with annotations and online Web Mapping Service (WMS) layers. You can also interact with the map in other ways, such as getting population estimates within an area, weather, coordinates, Flood Zones, River Stages, etc.

As part of the CAMEO software suite, MARPLOT can be used with other programs in the suite: you can link map objects to the CAMEO Data Manager program and easily display ALOHA threat zones for real emergency events or planning purposes. However, MARPLOT can also be run by itself as a general mapping program. MARPLOT runs on both Windows and Macintosh computers.

MARPLOT is a mapping application. The program comes with several global background base-map options, with maps in both street and satellite views. Users can add to the information shown on the map by drawing their own objects (such as chemical facilities, schools or response assets) or by importing layers of objects already created by other sources. Map objects can be linked to records in CAMEO Data Manager, in order to store additional information about these locations (such as emergency contact information or site plans). Additionally, the areas contaminated by potential or actual chemical release scenarios can be displayed on the maps to determine potential impacts and help users make decisions about the degree of hazard posed by the releases.

### **17.1.3 ALOHA—Areal Locations of Hazardous Atmospheres**

<https://www.epa.gov/cameo/aloha-software>.

ALOHA is an atmospheric dispersion model used for evaluating releases of hazardous chemical vapors. ALOHA allows the user to estimate the downwind dispersion of a chemical cloud based on the toxicological/physical characteristics of the released chemical, atmospheric conditions, and specific circumstances of the release.

ALOHA can estimate threat zones associated with several types of hazardous chemical releases, including toxic gas clouds, fires and explosions. Threat zones can be displayed on MARPLOT maps to help users assess geospatial information, such as whether vulnerable locations (such as hospitals and schools) might be impacted by the release or whether other nearby factors (such as construction zones) might complicate the response.

### **17.1.4 Tier2 Submit Software**

<https://www.epa.gov/epcra/tier2-submit-software>.

Completed Tier II forms are due by March 1, annually. Refer to the reporting requirements for your state for details of submission requirements. EPA developed Tier2 Submit to help facilities prepare an electronic chemical inventory report. Many states accept reports using Tier2 Submit, and the Tier II chemical inventory data can also be exported into the CAMEO Data Manager emergency planning software.

## **17.2 Guidance Documents for Planning**

EPA and the National Response Team published a guidance document, [\*Hazardous Materials Emergency Planning Guide, NRT-1\*](#), to help state and local officials develop emergency response plans. In addition, EPA, FEMA, and DOT published a follow-up document on hazards analysis that tells emergency planners how to determine the potential hazards of a chemical and its processes before there is an incident, so they can determine the priorities of chemical risks in their community and plan for them. Links to these documents are provided in the “Resources” section of this document.