# Getting Started with EMS Chemical Inventory

The Chemical Safety EMS system is used for two functions: chemical waste pickups and chemical inventory. This guide will focus on the aspects of navigating the chemical inventory side of the system.

There are three main areas of the system that will be used to manage your chemical inventory: Global SDS, SDS, and Container.

1. Global SDS

The Global SDS is a catalog of SDS records with SDSs from the top chemical manufacturers in the country such as Fisher and Sigma-Aldrich. Not every manufacturer is represented in this catalog though. The Global SDS can be accessed from the Home page by hovering over "Chemical/SDS" on the left side of the screen and clicking "Global SDS".
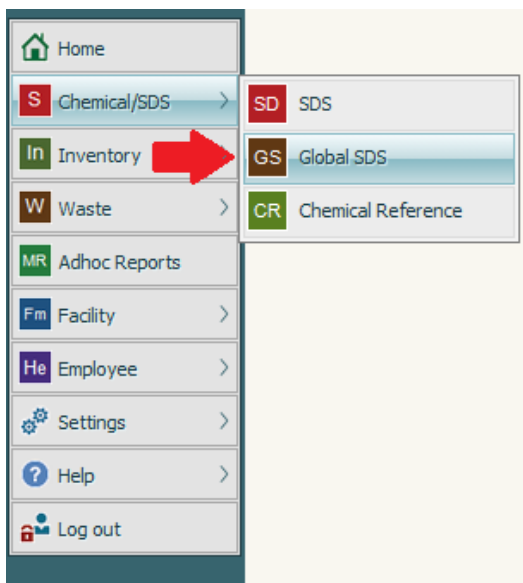
The Global SDS search page contains a multitude of search criteria. The most useful options available are 'Name', 'Manufacturer', and 'CAS'.

Each search option also has a default "operation" attached to it. In most cases, the default is set to 'Equals' but that can vary depending on the field. You can change this operation to whatever may suit your searching needs. A list of options is shown below:

For a sample search, 'sulfuric acid' was entered into the 'Name' field with the 'Equals' operation. Below are the results of the search:

Product Name	Manufacturer	SDS#	Revision Date	Entry Date	Inventory	SDS	
Sulfuric acid	Acros Organics	30006935	3/20/2014		☐	SDS	>
Sulfuric acid	Fisher Scientific	30015371	1/23/2018		☐	SDS	>
Sulfuric acid	Science Lab	30028776	5/21/2013		☐	SDS	>
Sulfuric acid	Sigma Aldrich	30079574	4/20/2020		☐	SDS	>
Sulfuric acid	ThermoFisher	30167830			☐	SDS	>
Sulfuric Acid	Avantor	30191696	3/26/2018		☐	SDS	>
Sulfuric acid	Alfa Aesar	30291414	9/6/2017		☐	SDS	>
Sulfuric acid	Fisher Scientific	30343294	5/21/2012		☐	SDS	>
SULFURIC ACID	Ecolab	30499169			☐	SDS	>
Sulfuric Acid	Avantor	30602347	10/15/2014		☐	SDS	>
Sulfuric acid	Sigma Aldrich	30618037	1/13/2020		☐	SDS	>
Sulfuric acid	Sigma Aldrich	30618607	1/13/2020		☐	SDS	>
Sulfuric acid	Sigma Aldrich	30624274	1/13/2020		☐	SDS	>

To view the record, click in the '>' button on the right side of the table. For this example, the first record in the table is the one we want to view. There are four pages to each SDS record: Product Data, SDS Image, Chemical Reference Data, and Environmental Data. Each page is accessible by the corresponding tabs at the top of the page. The first page displayed is the product data. Aside from basic identifying information about the product, there is also NFPA/HMIS data and any applicable Tier II hazard codes.

The second page contains the SDS for the product (if available). If there is a file displayed, the "View Image" button should be available to click. Clicking this button will show the SDS for the product from the corresponding manufacturer.

Product Name:	Sulfuric acid		
Manufacturer:	Acros Organics	SDS #:	30006935

Product Data | **SDS Image** | Chemical Reference Data | Environmental

Select File	Language	File	
Clear File	English	EN30006935_1.pdf	
View Image	Help		

Shipping Info:

The third page contains any available reference data for the product such as melting/boiling points, pH, and molecular weight.

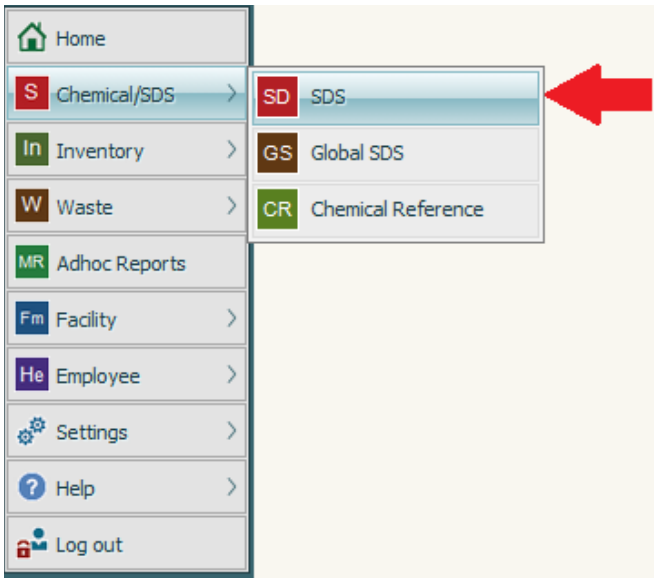| Product Name:	Sulfuric acid		
Manufacturer:	Acros Organics	SDS #:	30006935

Product Data | SDS Image | **Chemical Reference Data** | Environmental

Molecular Weight:		Specific Volume:		Peroxide Forming:	☐
Vapor Pressure:	1 mmHg @ 146 °C			Vapor Density:	-
Boiling Point:	554	Unit: F	Boiling Point Details:	290 °C / 554 °F
Melting Point:		Unit:	Melting Point Details:	10 °C / 50 °F
Flash Point:		Unit:	Flash Point Details:	-
International Fire Code:			Uniform Fire Code:	C,WR2
TWA:			Upper Explosion Limit:	
STEL:			Lower Explosion Limit:	
Water Solubility:			Auto Ignite Temperature:	Unit:
Evaporation Rate:			Critical Temperature:	Unit:
Conversion Factor:			Pesticide ID:	IARC: ☐
Storage Requirements:			Storage Temperature:	
Specific Gravity (LIQ):			Storage Pressure:	
Density:	1.84	Pounds/Gallons	Special Handling Equipment:	
pH:	1 1N aq.sol		Special Fire Fighting Media:	
Classification:			EINECS:	
Curies:			Shock Sensitive: ☐	Precious Metal: ☐
STCC:			ICSC Page:	View
OSHA Hazardous: ☐			CERS Chemical Library ID:	
NIOSH Page:		View	US EPA SRS:	
VOC Content:		VOC Unit:	VOC %:	
Sulfur Content:		Sulfur %:	Energy Content:	Unit:

The fourth page contains any environmental data for the product. This data primarily consists of GHS information as well as DOT information for transportation of the material.

2. SDS

The SDS library is a catalog of SDS records available to use for chemical inventory. This catalog is a combination of records downloaded from the Global SDS library and manually created SDS records. The SDS library can be accessed from the Home page by hovering over "Chemical/SDS" on the left side of the screen and clicking "SDS".

The SDS library search form only has three available search options: name, manufacturer, and CAS number. In this example, I will search for all records that have the exact name 'sulfuric acid'.

Product Name	Manufacturer	SDS#	Revision Date	Entry Date	Inventory	SDS		
SULFURIC ACID	Generic	815749		7/1/2019	☑		☰	›
SULFURIC ACID	Fisher Scientific	816997		7/1/2019	☑	SDS	☰	›
SULFURIC ACID	Mallinckrodt Baker Inc	817454		7/1/2019	☑		☰	›
SULFURIC ACID	GFS Chemicals	819259		7/1/2019	☑	SDS	☰	›
SULFURIC ACID	J.T. Baker	819778		7/1/2019	☑		☰	›
SULFURIC ACID	Macron	820010		7/1/2019	☑		☰	›
Sulfuric acid	SIGMA ALDRICH	837217	6/2/2016	9/16/2019	☑	SDS	☰	›
SULFURIC ACID	Ward's Science	838089		7/31/2020	☑	SDS	☰	›

As you can see from the results, not every SDS record in the system has a corresponding SDS document attached to it. Those that do have the gray SDS button in the corresponding column. Those that don't have a SDS document available are typically either older containers from vendors no longer available or for containers where no vendor information is available. The results also show whether or not containers exist in the inventory system that are attached to each SDS record.

3. Container

The Container module is where you will search for containers within the chemical inventory as well as manage your inventory (add, remove, edit, etc.). Inventory management is addressed in other training documents so I will focus on the search functionality. The Container module can be accessed from the Home page by hovering over "Inventory" on the left side of the screen and clicking "Container".
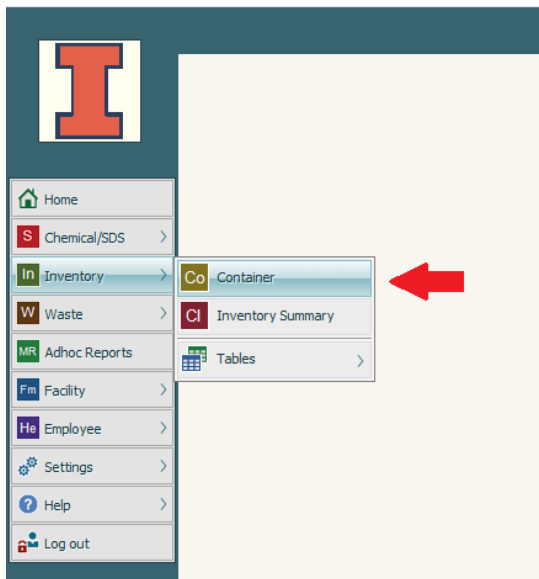
The default screen you are brought to is the container search screen. Here's a description of what each of the fields means and how to fill them out:

- Barcode: Each container will have a barcode ID assigned to it. The barcode ID can be found on the container label.
- Material Name: The material name will either be the specific chemical name or the product name if it is a mixture of chemicals.
- Manufacturer: The company that manufactured the material
- CAS: The CAS number of the material (if available)
- Building and Room: The building and room where the container is stored
- Location: The location path that designates where a container is stored. Since the EMS system is shared between chemical inventory and waste pickups, there are locations in the system for both operations. Chemical inventory locations will all be in the format 'Building Code-Room Number-Location Description'. The building code is the 4-digit number assigned to every campus building by F&S. A list of these codes can be found [here]. The location description is a user-defined description of the storage area. Examples of this are cabinet, refrigerator, freezer, and bench. The full location path for a freezer in Noyes Lab 250 would be '0012-250-Freezer' since the building code for Noyes is 0012.
- PI/Area Name: This will be the first and last name of the supervising PI if it is a research space or the given inventory system name if the area is a research support/service area or teaching lab.
- Date Added: This is the date that the container was added to the system
- Container Quantity: This is the current quantity of material left in the container. This field will always auto-populate with a '0' so a default search will look for non-empty containers.
- Emp. Number: This is the employee number assigned to you by the EMS system. This number has no correlation to your UIN or other university-related employee information. This number is always auto-populated when starting a new search. When this number is left in the search form, only the containers stored in locations that are a part of your assigned area(s) will be displayed. If you want to broaden the scope of your search to all viewable chemicals, delete the number before submitting the search.

Search

Field	Operator	Value
Barcode:	Equals	
Material Name:	Equals	
Manufacturer:	Equals	
CAS:	Equals	
Building:	Equals	
Room:	Equals	
Location:	Equals	
PI/Area Name:	Equals	
Date Added:	Equals	
Container Quantity:	Greater than	0
Emp. Number (Can Edit):	Equals	

Search