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# Science & Safety Consulting Services Computerized Chemical Management System in CD Format

**PART OF THE SCIENCE & SAFETY CONSULTING SERVICES CUSTOMIZED COMPREHENSIVE LABORATORY SAFETY PROGRAM**

A chemical inventory is required by OSHA 29 CFR §1910.1200 - Hazard Communication Standard, better known as "Right-to-Know." This inventory is a critical component of the Chemical Hygiene Plan required for middle, secondary schools, community colleges, colleges and universities by OSHA 29 CFR §1910.1450 – "Occupational Exposure to Hazardous Chemicals in Laboratories."

**The Chemical Management System is comprised of four components:**

- Procurement
- Inventory
- Storage
- Handling
- Waste disposal

See Table 37. "Customized Comprehensive Science Safety System Chemical Database," pgs. 1370-138.

Following are the column names / descriptions for the chemical inventory spreadsheet which contains over 2400 chemicals.

**Column A–Name of Substances**
Alphabetical listing of organic and inorganic chemicals. Listing of a chemical does not indicate its use is appropriate in any school.

**Column B– Other Names, Synonyms**
Alternate names when they exist

**Column C–Chemical Formula**
Indicates the formula of an element or compound or if the substance is a mixture.

**Column D– (CAS #) Chemical Abstract Services Number**
The identification number assigned by the Chemical Abstract Service. Use this number to access specific information about a chemical.

**Column E–School Level**
Indicates if a chemical can be used in elementary, middle or secondary school.
**HS – High School only**
**MSH – Middle and High Schools**
**Y – Elementary, Middle and Secondary schools**
**Justify HS – Justification is required to use**
**Justify HS (AP) – Justification is required; chemical is needed for AP course**
**Banned – Risk outweighs educational value**
***Banned – Either banned by US Homeland Security or other groups as risks outweigh educational value.**

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**Columns F & U–Maximum Quantity to Order**
Indicates the maximum amount of a chemical that should be in a school at any given time. Some of these quantities may need to be adjusted depending on the size of the school. These values are a recommendation. Ultimately, the teacher and the school / school system will make this decision.

**Column G– NFPA-H HEALTH (BLUE)**
0 - 4 rating scale is used to express the degree of health hazard of the chemical. Chemicals with a health rating greater than 1 must not be used in schools without justification. **See Storage & Special Codes Sheet for the degree of severity explanation.**

**Column H– NFPA-F FLAMMABILITY (RED)**
0 - 4 expresses the degree of the flammability hazard of the chemical. **See Storage & Special Codes Sheet for the degree of combustibility / flammability hazard explanation.**

**Column I– NFPA–I INSTABILITY (YELLOW)**
Degree of instability expressed on the 0 – 4 NFPA scale. In the previous NFPA Hazard Rating System,



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this segment was known as reactivity. **See Storage & Special Codes Sheet for the degree of the instability explanation.**

**Column J – NFPA-O SPECIFIC HAZARD (WHITE)**
Symbols used to indicate specific hazards associated with the chemical. This information is used to determine how to respond to accidents, spills, fires and storage compatibility. (e.g. water reactive – ~~W~~, OX – oxidizer) (See the Special Hazards Codes List on the **Storage & Special Codes Sheet** for a complete list of symbols used for special hazards in this column on this CD.)

**Column K– Contact**
0 to 4 is used to indicate the severity of an acute exposure of a person when exposed to a chemical. 0 indicates none; 4 indicates possible death.

**Column L– Personal Protective Equipment**
The kinds of personal protective equipment needed to use the chemical are indicated. "Goggles" refers to indirect vented chemical splash goggles. "Gloves" does not indicate the specific type of glove needed. Refer to the corresponding MSDS to determine the specific type of glove. It is always recommended to check the specific MSDS for a given chemical.

**Column M– Fisher 5 Color Storage System**
One of the four preferred storage systems for chemicals. The Fisher, JT Baker, Carolina Biological Supply Systems are well-suited to small chemical storerooms especially in elementary and middle schools. In the Fisher System, store chemicals according to blue, gray, white, red or yellow. Stop means separate storage

**Column N–Baker / Carolina Biological Supply Color Storage Code**
**."** In the JT Baker Code, store chemicals according to blue, yellow, white, or orange / green. On this CD, green is used for both orange and green designations. Carolina Biological Supply System uses blue, yellow, white or green. A stripe is used to indicate the chemical is incompatible with its storage color and must be stored separately. Both storage systems are represented using the same colors.

**Column O–Flinn Scientific Compatible Chemical Storage System**
The benefit of the Flinn Storage System lies in its usefulness to segregate chemical incompatibilities, thus reducing the seriousness of chemical leakage.

**Column P– Shelf Life**
Under the assumption of proper storage (temperature, ventilation, compatible storage), the chemical should be kept on hand for approximately the number of indicated years. 10 years indicates indefinite storage.

Use this number as a gauge for procurement quantity and expected usage rate. It is always prudent to keep amounts of any chemical to a minimum.

**Column Q– Disposal of Chemicals**
**Warning – many chemicals may require disposal by licensed handlers or private hazardous waste companies.**
The most current issue of the Flinn Science Catalog is used to indicate the disposal method. EPA / state / and local disposal regulations change yearly; therefore, always be aware of these regulations regarding a specific chemical. Even when directions for the disposal of a chemical indicate the chemical can be diluted and poured down the drain, consideration of where does the effluent go: the ground water, the river or the city sewage system, POTW (Publicly Owned Treatment Works), is essential. Unless you have written permission for the POTW, do not pour any chemical down the drain. The information in this column is a recommendation based on current available information. **Ultimately, it is your responsibility to make sure chemicals are disposed of properly and according to regulations**.

**Column R– EPA List & DOT Transportation Codes**
EPA and DOT have put chemicals lists or given them rating codes based on special associated hazards. **See EPA / DOT Codes Sheet for explanation of codes used.**

**Column S– Room**
Record the exact location of the chemical in the school (e.g., chemical storeroom, chemical laboratory).

**Column T– Shelf**
Exact location of the chemical in the chemical storage area.



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**Column U– Quantity**
Amount of the chemical in the school.

**Column V – Maximum Quantity** of a chemical that should be in a school or ordered at anytime. This quantity may require modification based on school size.

**Column W – Date Received**
Date the chemical is received and checked into the chemical storeroom.



**Column X– MSDS**
Indicate if the chemical's MSDS is in the MSDS file at the school.

**Column Y –MSDS Reference Site**
These references were on-line when this Chemical Management System CD was developed. Not all of these references are hyperlinked.