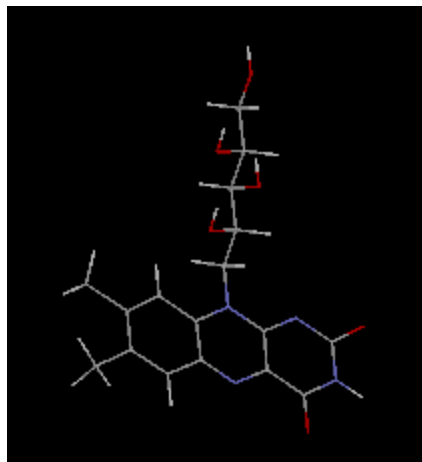


# Chemistry Resources

These chemical resources are from the San Diego State University Library's Science Division. Before formatting to winhelp, the content was prepared for more general interest.

An excerpt from the original documentation is [here](#)



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## Subjects

[Crystallography](#)

[Compound Identification](#)

[Nomenclature](#)

[Properties](#)

[Registry Numbers](#)

[Sequence AnalysisSpectral AnalysisStandards, Specifications and Regulations](#)

[Synthesis](#)

[Toxicity](#)

# Crystallography

**CRYSTALLOGRAPHY** is the study of crystals and crystal structures.

## Tables

### Crystal Data; Determinative Tables

2nd ed. Washington, DC: American Crystallographic Association, 1963.  
(2 vols.)

Contains data through 1960; excludes almost all alloys. Includes systematic and determinative tables and formula and name indexes.

### International Tables for X-Ray Crystallography

Birmingham, England: Kynock Press, 1952-1974. (4 vols.)

Contains information for determining crystal structures or x-ray methods to study crystallography and information on symmetry groups. Has basic definitions, a glossary (in English, French, Russian, German, and Spanish) and subject index. Includes physical, chemical, and mathematical tables.

# Compound Identification

Works listed in this section help in identifying chemicals and/or structures.

## Indexes

### Chemical Abstracts - Ring System Index

one of the annual indexes of Chemical Abstracts.

An important tool in identifying cyclic compounds. Includes cyclic parent compounds; excludes substituted compounds and simple ring systems. After determining the name of a compound, appropriate citations and abstracts can be found in the Chemical Substance Index.

### Cumulated Index Medicus

Bethesda, MD: National Library of Medicine, 1960-. Medical Subject Headings, Supplementary Chemical Records, 1960-.

An annual supplement to Cumulated Index Medicus. Contains approx. 23,000 compounds discussed in health related journals. Entries include registry number, synonym(s), pharmacological action, note. Also available online.

## Handbooks

### Registry of Toxic Effects of Chemical Substances.

Cincinnati, OH: NIOSH, 1978-.

An important tool in identifying chemicals containing common and brand names. Includes synonyms, registry numbers, molecular formula; data on irritation, mutation, tumorigenic effect, toxicity, aquatic toxicity; and references. Updated by supplements on microfiche.

### Beilstein's Index: Trivial Names in Systematic Nomenclature of Organic Chemistry

Berlin; New York: Springer-Verlag, 1986.

Lists trivial names used in Chemical Abstracts, Beilstein's Handbook of Organic Chemistry, and those allowed by the IUPAC rules. Gives English and German names, synonyms, systematic names, structural and molecular formulas, Beilstein references, CAS Registry Numbers (RN), and notes. Formula, RN, and ring-code indexes are included.

### Ring Systems Handbook

Columbus, OH: American Chemical Society, 1984-.

Includes all known basic structural skeletons and parent compounds of cyclic substances. Contains CA Index Name, CAS registry number and

molecular formula of the ring systems. Arranged in three sections: the Ring Systems File, the indexes, and the supplements.

### Structural Inorganic Chemistry

4th ed. Oxford: Clarendon Press, 1975.

Discusses crystal structures of elements, alloys, and inorganic compounds. Arranged by the groups of the Periodic Table. Has formula and subject index.

# Nomenclature

**NOMENCLATURE** is a system, based on conventions and standards, for naming chemical substances.

## Indexes

### Chemical Abstracts. Index Guide

Contains the summary of the rules governing nomenclature. Also includes a classified bibliography of chemical nomenclature.

## Tables, Atlases

### Nomenclature of Organic Chemistry

International Union of Pure and Applied Chemistry. 4th ed. Oxford; New York: Pergamon, 1979

Includes the definitive rules of naming organic compounds. Covers hydrocarbons, fundamental heterocyclic systems, and groups containing carbon, hydrogen, oxygen, nitrogen, halogen, sulfur, selenium and/or tellurium.

### Nomenclature of Inorganic Chemistry

International Union of Pure and Applied Chemistry. 2nd ed. Oxford; New York: Pergamon, 1971

Includes the definitive rules (1970). Covers the elements, compounds, ions and radicals, iso- and hetero-polyanions, acids, salts, salt-like compounds, addition compounds, crystalline phases of variable composition, and polymorphism.

### Enzyme Nomenclature

International Union of Biochemistry. Nomenclature Committee. New York: Academic, 1979

For each enzyme provides an enzyme code number, systematic name, and a non-systematic name. Lists the enzymes in numeric order and has an index by systematic, recommended, and other names.

### An Introduction to Chemical Nomenclature

5th ed. London; Boston: Butterworths, 1979.

Discusses some of the IUPAC rules. Includes physiochemical symbols and gives important differences between American and British usage.

# Properties

Works included in this section provide physical and chemical properties, usually in tabular form, for elements and compounds.

## Journals

### Journal of Chemical Thermodynamics

1969-

Reports significant measurements of thermochemical properties and equilibrium for reactions. Gives thermodynamic properties of pure substances and mixtures

### Journal of Chemical and Engineering Data

1956-

Publishes reliable research data. Has annual keyword index.

### International Journal of Chemical Kinetics

1969-

Reports on and publishes research work containing new data. Includes subject and compound indexes, but has no controlled vocabulary

### Journal of Physical and Chemical Reference Data

1972-

Has critically evaluated data for atomic and molecular, colloid and surface, and thermodynamic and transport properties.

## Dictionaries

### Merck Index: An Encyclopedia of Chemicals, Drugs, and Biologicals

11th ed. Rahway, N.J.: Merck, 1989.

Contains data on organic and inorganic chemicals and drugs. Arranged by common name, therefore must use the index to locate a chemical. Entries provide references and review articles, structure, toxicity, patent number, percentage composition.

## Handbooks

### CRC Handbook of Chemistry and Physics

Cleveland, OH: CRC Press, 1977-

Contains information on the elements and chemical compounds including physical constants. Has extensive vapor pressure tables for water and other substances. Also notes Beilstein references.

### Lange's Handbook of Chemistry

New York: McGraw-Hill, 1973-

Contains chemical and physical properties; sections on atomic and molecular structure, spectroscopy, electrochemistry, thermodynamics.

### Perry's Chemical Engineers Handbook

New York: McGraw-Hill, 1984.

Includes physical properties for important industrial chemicals.

## Tables

### International Critical Tables of Numerical Data, Physics, Chemistry, and Technology

New York: McGraw-Hill, 1926-1930. (7 volumes)

Contains critically evaluated data and references to the literature. The one-volume index lists individual chemical substances.

### JANAF Thermochemical Tables

3rd ed. Washington, DC: American Chemical Society, 1986. (2 volumes)

Provides thermodynamic data, SI units and the international standards for notation. Contains name and formula indexes.

# Registry Numbers

**RN** is the CAS registry number assigned to each chemical substance. This number makes comprehensive retrieval of sources possible in an online database

## Databases

### Chemname

A chemical name dictionary. Contains information about chemical substances. Provides RNs, molecular formulas, synonyms, and ring data. Available on the Dialog online database system as Chemsearch.

### Chemline

A chemical dictionary available online. Includes approximately 500,000 chemicals indexed in the NLM databases. Contains and may be searched by registry numbers. Available on the National Library of Medicine database system.

### Registry File

A dictionary database containing data on chemical substances. Includes molecular formula, synonyms, structure, and registry numbers. Available on the STN online database system.

### Toxicology Data Network System (TOXNET)

An online database consisting of several bibliographic and data files concerning toxic materials. Use of the registry number makes it possible to search and retrieve information from several files at the same time. Available on the NLM system of databases.

## Indexes and Abstracts

### Chemical Abstracts. Index Guide.

A reference for searching Chemical Abstracts for chemical substances and topics. Links names used in the literature with the controlled terminology of the volume indexes. Includes RNs.

### Inorganic Chemistry

1962-

Covers bio-inorganic, catalytic, organometallic, solid state, synthetic chemistry and reaction dynamics. Includes registry numbers for the chemical discussed at the end of the articles.

## Journals

### Journal of Organic Chemistry

1936-

Provides registry numbers for some of the substances discussed at the end of the articles.



## Dictionaries

### Dictionary of Organic Compounds

5th ed. New York: Chapman and Hall, 1982. (7 volumes)

Covers organic compounds, natural products, solvents and reagents, tautomeric compounds. Has numerous indexes. The Registry Number Index lists RNs in ascending order, also giving chemical name and location number. Notes toxic and hazardous materials.

### Encyclopedia of Chemical Technology

4th ed. New York: Wiley, 1991-. (26 volumes)

An authoritative work providing information on the most recent chemical technology. Contains CAS registry numbers and SI units. -- Also available online.

### Medical Subject Headings: Supplementary Chemical Records

Washington, DC: GPO, 19-.

Contains records of approximately 21,000 chemicals, arranged alphabetically by name of the substance. Includes RNs.

### Merck Index

11th ed. Rahway, NJ: Merck, 1989.

Describes chemicals, drugs, and biological substances. Provides data on the compound, its bibliographic history and structure. Contains a number of indexes, including CAS registry number index arranged by name and RNs.

## Handbooks

### Registry Handbook (Number Section)

Columbus, OH: American Chemical Society, 19-.

Contains registry numbers of specific chemical substances, CA index names and molecular formulas.

# Sequence Analysis

**SEQUENCE ANALYSIS** is the determination of amino acids in a peptide, etc. or the determination of the order of nucleotides in a polynucleotide strand, etc.

## Indexes and abstracts

### **Handbook of Protein Sequence Analysis**

2nd ed. Chichester, England; New York: Wiley, 1980.

A collection of protein and peptide amino acid sequence information. Excludes cyclic peptides and those with D-amino acids. Includes references and author, protein sources and protein name indexes.

## Tables

### **Atlas of Stereochemistry**

London; New York: Chapman and Hall, 1986.

Covers the field of organic and organometallic stereochemistry. Contains data concerning the absolute configurations of chiral molecules. Excludes metal complexes. Has bibliographic references.

### **Nucleic Acid Sequence Analysis**

New York: Columbia University Press, 1972.

### **Atlas of Protein Sequence and Structure**

Silver Spring, MD: National Biomedical Research Foundation, 1965 (5 vols.)

A collection of the known protein and nucleotide sequences and other related data. Includes references, foldouts; author and subject indexes.

# Spectral Analysis

*Structure Determination : to find and determine the structure of a chemical substance, ``spectral'', ``crystallographic'', or ``sequence analysis'' data may be used.*

**SPECTRA** is a particular distribution of property over the components of a system. For more complete definition, see also physics , chemistry , or science dictionaries.

## Databases

### C-13-NMR/IR Database

Contains information extracted from 20 core journals, spectra catalogs and unpublished data. Database can be searched by chemical shifts, molecular formulas, name fragments, structures, and sub-structures. This online database is available only from the STN system.

## Dictionaries, encyclopedias and directories

### A Dictionary of Spectroscopy

2nd ed. New York: Wiley, 1982.

Contains the most commonly used terms, expressions, and equations. Includes illustrations, abbreviations, SI units and references.

## Handbooks

### Handbook of Spectroscopy

Boca Raton, LA: CRC Press, 1991

Contains extensive tabular data.

## Tables

### Atlas of Spectral Data and Physical Constants for Organic Compounds

2nd ed. Cleveland, OH: CRC Press, 1975. (2 volumes)

Contains IR, Raman, ultraviolet, proton and carbon-13 NMR, and mass spectra.

### Sadtler Research Laboratory Spectral Collections

The spectral collections produced by this laboratory through the 1980s are housed in the Chemistry Building. These are infrared, proton NMR, carbon-13 NMR, and ultraviolet spectra.

### Infrared Spectra of Inorganic Compounds

New York: Academic Press, 1971.

Includes 900 spectra of salts, oxides, and coordination compounds.

### Wiley/NBS Registry of Mass Spectral Data

New York: Wiley, 1989.

Gives mass spectral data corresponding to specific compounds. Entries contain molecular weight, elemental composition, RN, source, bar graph, preferred CAS name. Common names may also be listed. Includes compound name, elemental composition, and RN indexes.

#### **Eight Peak Index of Mass Spectra**

3rd ed. Aldermaston, England: Mass Spectrometry Data Centre, 1970. (2 vols.)

A comprehensive index covering the collections of several organizations such as NIH-EPA, ASTM, Thermodynamics Research Center, Dow Chemical Company. Arranged by molecular weight and the mass-to-charge ratios of the peaks.

#### **Absorption Spectra in the Ultraviolet and Visible Region**

New York: Academic Press, 1961-.

Contains actual spectrographs. Indexed by names and formulas.

#### **Organic Electronic Spectral Data**

New York: Wiley, 1960-.

Arranged by molecular formula. Gives name, solvent or phase, and wavelength values. Lists references to the original literature.

# Standards, Specifications and Regulations

## STANDARDS

are minimum requirements for the quality, size, or performance of a product.

## SPECIFICATIONS

are strict requirements, sometimes set for a specific order of a product.

## REGULATIONS

originate in regulatory bodies of the executive branch of the government.

## Databases

### Chemlist

Covers substances subject to regulation. Information is taken from EPA Toxic Substances Control Act Inventory, Federal Register, and Toxic Substances Control Act Test Submissions. Available from STN database system.

## Indexes and Abstracts

### Monthly Catalog of the United States Government Publications

Washington, DC: GPO, 1951-.

A current bibliography of government documents. Indexes some publications by the National Institute of Standards and Technology (formerly the National Bureau of Standards), OSHA, EPA, etc. Contains numerous indexes.

Available also in computerized form on the PIN in Government Publications and through the database systems of a number of vendors.

### Publications of the National Bureau of Standards

1966/67-. Washington, DC: GPO, 1969-.

An index to publications of the NBS.

## Journals

### Annual Book of ASTM Standards.

Philadelphia: ASTM, 1990. (68 volumes)

Contains ASTM approved standards, specifications, guides, practices, test methods, terminology. Standards are reexamined and revised every five years.

### EPA Publications Bibliography; Quarterly Abstract Bulletin

Washington, DC: U.S. Environmental Protection Agency, 1977-.

Contains bibliographic citations and abstracts for EPA reports. Has title, keyword, sponsoring EPA office, corporate author, contact/grant

number, and NTIS order/report number indexes.

#### **Standards & Practices for Instrumentation**

8th ed. Pittsburgh: Instrument Society of America, 1986.  
All standards of the Society are given in full. Abstracts of relevant standards from other societies are also included. Contains a subject index.

#### **Journal of Research of the National Bureau of Standards**

1977-.  
Contains technical papers on NBS research. Covers chemistry, physics, mathematics, computer science and engineering. Emphasizes principles of standardization and measurement methodology.

#### **Pure and Applied Chemistry**

1960-.  
Publishes available guidelines for reporting data. Also includes glossary terms, definitions, units, and rules of nomenclature.

#### **Registry of Toxic Effects of Chemical Substances**

Washington, DC: GPO, 1978-.  
Lists basic toxicity data for each compound included. Contains occupational safety and health standards. Also available online. Updated by quarterly supplements.

### **Government Documents**

#### **``Labor" Code of Federal Regulations**

Title 29, Parts 1900-1910.999. 1991 edition.  
Contains regulations by the Occupational Safety and Health Administration, Department of Labor (OSHA). The regulations concern labor and related areas.

#### **NIOSH Manual of Analytic Methods**

3rd ed. Cincinnati, OH: National Institute for Occupational Safety and Health, 1984.  
Discusses methods for establishing limits for toxic exposures. Covers chemical substances commonly found in industry and academic institutions.

#### **``Protection of Environment". Code of Federal Regulations.**

Title 40, Parts 100-149. 1991 edition.  
Contains methods of organic analysis of municipal and industrial wastewater.

### **Dictionaries**

#### **Index and Directory of U.S. Industry Standards.**

Englewood, CO: Information Handling Services, 1983-.  
A directory providing access to the majority of U.S. industry standards. Has subject index, society/numeric index, ANSI number concordance, and a society directory.

## Handbooks

### Official Methods of Analysis

Washington, DC: AOAC, 1970-.

Contains qualitative and quantitative methods of analysis of foods, pesticides, fertilizers, etc. Includes reference tables.

### Chemical Safety Data Sheets

Cambridge: The Royal Society of Chemistry, 1989-.

Covers solvents and main group metals and their compounds. Provides information (exposure limits, physical properties, packaging and transportation, biological hazards, carcinogenicity, disposal) on chemicals used in the workplace, i.e. in industry, laboratory, and the home.

### NIOSH/OSHA Pocket Guide to Chemical Hazards

Washington, DC: GPO, 1978.

Contains key information in tabular form for 380 chemicals found in the work environment. Items listed are regulated by the Federal Government.

### OSHA Analytical Methods Manual

2nd ed. Salt Lake City: OSHA Analytical Laboratory, 1990. (3 vols.)

Contains new, reviewed, and/or changed OSHA analytical methods.

Includes evaluation guidelines for air sampling. Gives analytical parameters, required tests, statistical calculations, criteria for acceptance, outline for written reports.

# Synthesis

**SYNTHESIS** is making new substances by chemically combining materials.

## Databases

### CASREACT

A database focused on the literature of reaction chemistry; gives better access than Chemical Abstracts for information on synthesis. Covers 106 organic chemistry journals and provides access through RNs for reactants, products, reagents, catalysts and solvents. Provides chemical, structural, and reaction diagrams. Available on the STN online system.

### Chemical Abstracts

In its machine readable form covers the chemical literature from 1967 to the present. International in scope and includes references to journals, patents, technical reports, books, proceedings, and dissertations. Searches result in a bibliography containing bibliographic citations and abstracts. Available from DIALOG online system as CA SEARCH and from STN system as CA.

## Indexes and abstracts

### Chemical Abstracts

1907-

To find information on synthesis use the Chemical Substance and General Subject Indexes. In searching the General Subject Index look for the subjects "preparation" (covering synthesis, manufacture, incidental formation, recovery, separation, and purification) or "reactions" (chemical changes, nuclear interactions, corrosion, neutralization, isomerization, etc). In the Chemical Substance Index look under the name of element or compound. - Also available online from Dialog and STN.

## Journals

### Journal of Synthetic Methods

1975-

Contains a number of new reactions, many taken from the patent literature. Includes a subject index which also lists starting materials, reagents, reactions, and products.

## Dictionaries



### Dictionary of Organic Compounds

5th ed. New York: Chapman and Hall, 1982. (7 volumes)

Entries contain chemical information, physical constants, and bibliographic references to the different aspects of the compound. One of the references refers to the synthesis of a given compound.

### Dictionary of Organometallic Compounds

London, New York: Chapman and Hall, 1984. (3 volumes)

The entry for each compound contains bibliographic references, one of which refers to the synthesis of the substance. Recent references are preferred in the listings.

### Reagents for Organic Synthesis

New York: Wiley, 1967-

A source to be consulted in planning the synthesis of a compound. Provides information on preferred methods of preparation or purification and gives reaction diagrams.

## Handbooks

### Beilstein Handbook of Organic Chemistry

4th ed. Fifth supplementary series. Berlin, New York: Springer Verlag, 1984-.

Includes information on the formation or preparation of substances. Very useful for finding methods for preparing known compounds. Also available online from Dialog and STN systems.

## Treatises

### Comprehensive Coordination Chemistry

Oxford; New York: Pergamon Press, 1987. (7 volumes)

Covers synthesis, reactions and properties of substances. Emphasizes industrial applications (e.g.: petrochemical, pharmaceutical; plastics.) Has subject and formula indexes; also an index to review articles and specialized texts.

### Comprehensive Inorganic Chemistry

Oxford: Pergamon Press, 1973. (5 volumes)

### Comprehensive Organic Chemistry

Oxford; New York: Pergamon Press, 1979. (6 volumes)

Discusses reaction mechanism of organic compounds including synthetic and biosynthetic compounds. Index volume contains named reactions and types of reactions; reagents; and literature references.

### Comprehensive Heterocyclic Chemistry

Oxford; New York: Pergamon Press, 1984. (8 volumes)

Discusses structure, reactivity, and synthesis of heterocycles (nucleic acids, vitamins, coenzymes, hormones, antibiotics, sugars, etc.). Reactivity covers reaction with free radicals, electrophiles, nucleophiles, and electrocyclic reactions.

### Comprehensive Organometallic Chemistry

Oxford; New York: Pergamon Press, 1982. (9 volumes)

Covers mostly industrial chemistry. Discusses the main group and transition elements and the use of organometallic compounds. Includes subject, formula and author indexes; has bibliographic references.<P>

### Inorganic Syntheses

New York: Wiley, 1939-

Contains detailed, laboratory tested methods for the preparation of inorganic compounds.

### Inorganic Reactions and Methods

Deerfield Beach, FL: VCH Pub., 1986-

Discusses the forming of bonds with inorganic elements. Has author, compound, and subject indexes.

### Methoden der Organischen Chemie (Houben-Weyl)

4. Aufl. Stuttgart: G. Thieme, 1952-

A treatise on organic reactions, preparation and synthesis of organic, organometallic, macromolecular, and biochemical compounds. Also covers general laboratory practices, analytical, physical and chemical methods. Contains parent compound and formula indexes.

### Methodicum Chemicum

New York: Academic Press, 1974-

Discusses principles and specific techniques of synthesis. Covers the preparation of such compounds as transition metal derivatives, nucleic acids, vitamins, etc.

### Organic Reaction Mechanisms

London; New York: Wiley, 1965-

A series of annual surveys on reaction mechanism, providing comprehensive coverage and current awareness. Excludes photochemical reactions, biosynthesis, electrochemistry, surface chemistry, heterogeneous catalysis and organometallic chemistry. Contains author and subject indexes.

### Organic Reactions

New York: Wiley, 1942-

Covers named and other well defined reactions. Procedures described have not been tested. Contains a number of indexes.

### Theilheimer's Synthetic Methods of Organic Chemistry

Basel; New York: Karger, 1982.

Covers organic reactions and reagents, significant modifications, and interesting applications of known reactions. General reaction types are included; named reactions are avoided. Very strong in updating earlier references. Annually lists the important developments in synthetic organic chemistry.

**Advanced Organic Chemistry**

by Jerry March

New York: Wiley, 1985 (third edition, there is a new edition I think)

Covers with thousands of references all types of reactions, the bible of the organic chemist itself!

# Toxicity

**TOXICITY** is the characteristic property of a substance to cause harm of injury.

## Databases

**NLM (National Library of Medicine). Toxicology Information Program.**

An online search system devoted to bibliographic computer databases. The major files are Toxline and Toxlit. Citations are taken from government and private databases such as BIOSIS, CA, NTIS, etc.

**TOXNET (Toxicology Data Network)**

An online database system maintained by the National Library of Medicine. Includes factual information in the following files:

**RTECS** includes information on potentially toxic substances.

**HSDB** covers toxic and potentially toxic substances.

**CCRIS** has test results on carcinogenicity, mutagenicity, and tumor promotion.

**TRI** contains information on industrial emissions of toxic chemicals into the environment.

**DIRLINE and DBIR** lists factual information about organizations and resources available for consultation on toxicological, environmental, biotechnological, and molecular biological questions.

## Indexes

**Environment Abstracts Annual**  
1983-.

A literature survey providing comprehensive coverage of the environment and related topics. International in scope. Indexes journals, books, reports (company and government), conference proceedings, and newspapers. Contains a number of indexes for easy access to the material.

## Dictionaries

**Dictionary of Toxicology**  
New York: Van Nostrand Reinhold, 1988.

Defines terms and concepts of toxicology. Also covers anatomical, biochemical, pathological, and physiological concepts. Includes references.

**Encyclopedia of Chemical Technology**

4th ed. New York: Wiley, 1991-.

A source of basic knowledge in chemistry and chemical technology. Includes toxicological information and references.

## Handbooks

### Handbook of Reactive Chemical Hazards

London; Boston: Butterworth, 1979.

Discusses flammable substances and those igniting when exposed to air. Gives quantitative information on energy decomposition. Excludes toxic substances.

### Handbook of Environmental Data on Organic Chemicals.

New York: Van Nostrand Reinhold, 1983.

Provides information on individual substances, mixtures and preparations. Lists name, synonyms, formulas, properties, air and water pollution factors, and biological effects.

### Dangerous Properties of Industrial Materials

7th ed. New York: Van Nostrand Reinhold, 1989.

Gives physical and chemical properties and health related data for 20,000+ compounds. Includes aquatic toxicity data if available. Has extensive bibliographic references.

### Patty's Industrial Hygiene and Toxicology

4th ed. New York: Wiley, 1991-.

Discusses classes of compounds. Gives physical and chemical properties and biological effects. Also lists hygienic standards.

### Pesticide Manual

8th ed. Thornton Heath: British Crop Protection Council, 1987.

A list of pesticides currently in use. Includes chemicals, microbial agents, plant growth regulators, and pest repellents. Gives toxicology for each entry. Indexed by RN's; molecular formulas; chemical, common and trivial names; and trademarks.

## Tables

### Registry of Toxic Effects of Chemical Substances

Washington, DC: GPO, 19-.

Contains data on skin and eye irritation, mutation, reproductive effects, tumorigenic and toxicity data. Includes registry numbers. Updated by supplements on microfiche.

*The purpose of this system is to provide students with automated reference access to selected resources in the discipline of chemistry. CHEMISTRY INFORMATION is a menu driven reference advisory module capable of answering a limited number of frequently asked questions concerning the appropriate reference tools through which to find information in Chemistry. Reference resources include indexes, databases, atlases, handbooks, dictionaries, encyclopedias, monographs, core journals and directories.*

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