

CHAPTER 8

Resources

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8.1 Agencies and Organizations

This section provides the addresses and telephone numbers for three groups of agencies and organizations:

- Those involved as representatives in the development of WHMIS legislation
- Those referenced in WHMIS legislation
- Other general information and policy organizations

8.1.1 Regulatory Agencies Associated with WHMIS

Federal Government

Hazardous Materials Information Review Commission
427 Laurier Avenue West, 7th Floor
Ottawa, ON K1A 1M3
Tel: (613) 993-4331
Fax: (613) 993-4686
Website: www.hmircccrmd.gc.ca

Health Canada, WHMIS Division
123 Slater Street, 4th Floor
Postal Locator: 3504D
Ottawa, ON K1A 0K9
Tel: (613) 957-2342
Fax: (613) 948-2626
Website: www.hc-sc.gc.ca/hecs-sesc/whmis/

Human Resources Development Canada
Labour Program
Phase 11, 10th Floor, Place du Portage
Hull, QC K1A 0J2
Tel: (819) 953-0215
Fax: (819) 953-4830
Website: www.hrsdc.gc.ca/en/labour/index.shtml

Provinces and Territories

Alberta

WHMIS Coordinator
Legislation, Policy and Technical Support Services
Workplace Health, Safety and Strategic Services
Human Resources and Employment
9th Floor, 10808 - 99 Avenue
Edmonton, AB T5K 0G5
Tel: (780) 415-0600
Fax: (780) 427-5698
Website: www.gov.ab.ca/LAB/index.html

British Columbia

WorkSafeBC
PO Box 5350, Station Terminal
Vancouver, BC V6B 5L5
Tel: (604) 276-3100
Fax: (604) 232-5848
Website: WorkSafeBC.com

Manitoba

Workplace Safety and Health Division
Department of Labour
200 - 401 York Avenue
Winnipeg, MB R3C 0P8
Tel: (204) 945-3450
Fax: (204) 945-4556
Website: www.gov.mb.ca/labour/safety/index.html

New Brunswick

Workplace Health, Safety and Compensation Commission
4th Floor, 500 Beaverbrook Court
Fredericton, NB E3B 5X4
Tel: (506) 738-4322
Fax: (506) 453-7982
Website: www.whscc.nb.ca

Newfoundland

Provincial Industrial Hygienist
Occupational Health and Safety Inspection Services
PO Box 8700
St. John's, NF A1B 4J6
Tel: (709) 729-0052
Fax: (709) 729-6639
Website: <http://www.whscc.nf.ca/>

Northwest Territories and Nunavut

Workers' Compensation Board N. W. T. and Nunavut
PO Box 8888
Yellowknife, NT X1A 2R3
Tel: (867) 920-3888
Fax: (867) 873-0262
Website: www.gov.nt.ca

Nova Scotia

Occupational Health and Safety Division
Department of Labour
5151 Terminal Road
PO Box 697
Halifax, NS B3J 2T8
Tel: (902) 424-8477
Fax: (902) 424-3239
Website: <http://www.gov.ns.ca/enla/ohs/>

Ontario

Ontario Ministry of Labour
Occupational Health and Safety Branch
655 Bay Street, 14th Floor
Toronto, ON M7A 1T7
Website: www.gov.on.ca/LAB/main.htm

Prince Edward Island

P. E. I. Workers' Compensation Board
Occupational Health and Safety Branch
PO Box 757
Charlottetown, PE C1A 7L7
Tel: (902) 368-5680
Fax: (902) 368-5697

Quebec

Commission de la santé et de la sécurité du travail
Service du répertoire toxicologique
1199 rue de Bleury 4 étage
Montreal, QC H3C 3J1
Tél: (514) 906-3080
Télécopieur: (514) 906-3081
Website: www.csst.qc.ca

Saskatchewan

Occupational Health and Safety
Saskatchewan Labour
6th Floor, 1870 Albert Street
Regina, SK S4P 3V7
Tel: (306) 787-4539
Fax: (306) 787-2208
Website: <http://www.labour.gov.sk.ca/>

Yukon

Occupational Health and Safety
Workers' Compensation Health and Safety Board
401 Strickland Street
Whitehorse, YT Y1A 5N8
Tel: (867) 667-3726
Fax: (867) 393-6279
Website: www.wcb.yk.ca

8.1.2 Agencies and Organizations Referenced in WHMIS Legislation

American Conference of Governmental Industrial Hygienists (ACGIH)
1330 Kemper Meadow Drive, Suite 600
Cincinnati, OH 45240
U.S.A.
Tel: (513) 742-2020
E-mail: pubs@acgih.org
Website: www.acgih.org

American Society for Testing and Materials (ASTM)
100 Barr Harbor Drive
West Conshohocken, PA 19428-2959
U.S.A.
Tel: (610) 832-9585
Website: www.astm.org

National Association of Corrosion Engineers (NACE) International
1440 South Creek Drive
Houston, TX 77054-4906
U.S.A.
Tel: (281)228-6200
Website: www.nace.org

Organization for Economic Cooperation and Development (OECD)
2, rue Andre-Pascal
75775 Paris, Cedex 16
France
Website: www.oecd.org

OECD Test Guidelines are also available from:

- Renouf Publishing Company
5369 Canotek Road, Unit 1
Ottawa, ON K1J 9J3
Tel: (613) 745-2665
Website: www.renoufbooks.com

U. S. Government Standards
Superintendent of Documents
US Government Printing Office
Washington, DC 20402
U.S.A.
Tel: (202) 512-1800
Website: www.access.gpo.gov

World Health Organization Headquarters
Avenue Appia 20
1211, Geneva 27
Switzerland
Tel: +41 22 791 2111
Website: www.who.org

- WHO International Agency for Research on Cancer (IARC)
150 cours Albert Thomas
F - 69372
Lyon, cedex 08
France
Website: www.iarc.fr
- Canadian Public Health Association
1565 Carling Avenue, Suite 400
Ottawa, ON K1Z 8R1
Tel: (613) 725-3769
Website: www.cpha.ca
- WHO Publications Centre (U.S.A.)
49 Sheridan Avenue
Albany, NY 12210
U.S.A.
Tel: (518) 436-9686
Website: www.who.int/dsa/

8.1.3 Other Information and Policy Organizations

American National Standards Institute (ANSI)
11 West 42nd Street
New York, NY 10036
U.S.A.
Tel: (212) 642-4900
Website: www.ansi.org

Canadian Centre for Occupational Health and Safety (CCOHS)
250 Main Street East
Hamilton, ON L8N 1H6
Tel: 1-800-263-8466
Website: www.ccohs.ca

Canadian Chemical Producers' Association
350 Sparks Street, Suite 805
Ottawa, ON K1R 7S8
Tel: (613) 237-6215
Website: www.ccpa.ca

Canadian Government Publishing Centre
284 Wellington Street
Ottawa, ON K1A 0H8
Tel: (613) 957-4222
Website: www.canada.justice.gc.ca

Canadian Institutes of Health Research
160 Elgin Street, 9th Floor
Address Locator 4809A
Ottawa, ON K1A 0W9
Tel: 1 (888) 603-4178 or 613-941-2672
Website: www.cihr-irsc.gc.ca

Canadian Labour Congress
2841 Riverside Drive
Ottawa, ON K1V 8X7
Tel: (613) 521-3400
Website: www.clc-ctc.ca

Canadian Manufacturers and Exporters
6725 Airport Road, Suite 200
Mississauga, ON L4V 1V2
Tel: 1 (800) 268-9684 or (905) 672-3466
Website: www.cme-mec.ca

CSA International (Canadian Standards Association)
178 Rexdale Boulevard
Rexdale, ON M9W 1R3
Tel: 1-800-463-6727 or (416) 747-4000
Website: www.csa-international.org

CANUTEC (Canadian Transport Emergency Centre)
Transport of Dangerous Goods Branch
Transport Canada
330 Sparks Street, Suite 1401
Ottawa, ON K1A 0N5
Tel: (613) 992-4624
Emergency Telephone: (613) 996-6666
Website: www.canutec.gc.ca

European Union Delegation for the European Commission
2300 M Street, NW
Washington, DC 20037
U.S.A.
Tel: (202) 862-9500
Fax: (202) 429-1766
Website: www.eurunion.org

National Fire Protection Association
PO Box 9101
1 Batterymarch Park
Quincy, MA 02269-9101
U.S.A.
Tel: (617) 770-3000
Fax: (617) 770-0700
Website: www.nfpa.org

National Institute for Occupational Safety and Health (NIOSH)
Robert A. Taft Laboratories
4676 Columbia Parkway
Cincinnati, OH 45226
U.S.A.
Tel: (513) 684-8236
Website: <http://www.cdc.gov/niosh/homepage.html>

8.2 Reference Documents Specified in WHMIS Legislation

Hazardous Product Act (*HPA*) and Controlled Products Regulations (*CPR*) are available from the Canadian Government Publishing Centre or from the Justice Canada (Statutes and Regulations) website at www.canada.justice.gc.ca

Part IV of the *CPR* specifies these test methods and classification lists for use when evaluating if a product is a controlled product within the meaning of Classes A, B, D, E and F:

Class A: Compressed Gases

- *Standard Test Method for Vapour Pressure of Petroleum Products (Reid Method)*, ASTM D323-82, dated August 27, 1981 (updated 1999, ASTM D323-99a).

Class B: Flammable and Combustible Material

- *Standard Test Methods for Flash Point by Pensky-Martens Closed Tester*, ASTM D93-80, dated August 29, 1980 (updated 1999, ASTM D93-99c).
- *Standard Test Methods for Flash Point by Setaflash Closed Tester*, ASTM D3828-81, dated August 28, 1981 (updated 1998, ASTM D3828-98).
- *Standard Test Methods for Flash Point of Liquids by Setaflash Closed-Cup Apparatus*, ASTM D3278-82, dated August 28, 1981 (updated 1996, ASTM D3278-96e1).
- *Standard Test Method for Flash Point by Tag Closed Tester*, ASTM D56-82, dated August 27, 1982 (updated 1998, ASTM D56-98a).
- *Standard Test Method for Kinematic Viscosity of Transparent and Opaque Liquids (and the Calculation of Dynamic Viscosity)*, ASTM D445-83, dated October 28, 1983 (updated 1997, ASTM D445-97).

Class D: Poisonous and Infectious Material

Nine categories of health effects are listed for poisonous materials in the *CPR*. The regulations specify tests and references for eight:

1. Acute Lethal Effects

- OECD Test Guideline No. 401, “Acute Oral Toxicity,” dated May 12, 1981 (updated February 24, 1987).
To be replaced, upon amendment of the *CPR*, by OECD Test Guideline
 - No. 420, “Acute Oral Toxicity - Fixed Dose Method,” dated July 17, 1992
 - No. 423, “Acute Oral Toxicity - Acute Toxic Class Method,” dated March 22, 1996
 - No. 425, “Acute Oral Toxicity - Up-and-Down Procedure,” dated September 21, 1998
- OECD Test Guideline No. 402, “Acute Dermal Toxicity,” dated May 12, 1981 (updated February 24, 1987).
- OECD Test Guideline No. 403, “Acute Inhalation Toxicity,” dated May 12, 1981.

2. Chronic Toxic Effects

- OECD Test Guideline No. 408, “Subchronic Oral Toxicity - Rodent: 90-day,” dated May 12, 1981 (updated September 21, 1998).
- OECD Test Guideline No. 409, “Subchronic Oral Toxicity - Non Rodent: 90-day,” dated May 12, 1981 (updated September 21, 1998).
- OECD Test Guideline No. 411, “Subchronic Dermal Toxicity: 90-day,” dated May 12, 1981.
- OECD Test Guideline No. 413, “Subchronic Inhalation Toxicity: 90-day,” dated May 12, 1981.
- OECD Test Guideline No. 452, “Chronic Toxicity Studies,” dated May 12, 1981.
- Tests or Methods described in U. S. FDA or EPA Guidelines as published, and amended from time to time, in the *U.S. Federal Register*.

3. Carcinogenicity

- American Conference of Governmental Industrial Hygienists (ACGIH). *Threshold Limit Values and Biological Exposure Indices*, latest version, Cincinnati, Oh.: ACGIH.
- World Health Organization (WHO). *IARC Monographs on the Evaluation of the Carcinogenic Risks of Chemicals to Humans, 1972–1988*, Geneva, Switzerland: WHO Publications.
Continued in 1988 by *IARC Monographs on the Evaluation of the Carcinogenic Risks to Humans*. Available from WHO Publications Centre (U.S.A.) or WHO (Geneva).

4. Mutagenicity

- Organization for Economic Cooperation and Development (OECD). Introduction to the OECD Guidelines on Genetic Toxicology Testing and Guidance on the Selection and Application of Assays.” In the *Third Addendum to the OECD Guidelines for Testing of Chemicals*. Paris, France: OECD Publications, March 1, 1987. [latest edition: 10th ed.Oct. 1998]
- Health Canada / Environment Canada. *Guidelines on the Use of Mutagenicity Tests in the Toxicological Evaluation of Chemicals*, Ottawa, Ont.: Canada Communications Group-Publishing, 1986.
- Proposed Guidelines for Registering Pesticides in the U. S.; Hazard Evaluation: Human and Domestic Animals. *U. S. Federal Register*, Volume 43 (No. 163): 37,336–37,403, 1978.

5. Teratogenicity And Embryotoxicity

- OECD Test Guideline No. 414, “Teratogenicity,” dated May 12, 1981.
- OECD Test Guideline No. 415, “One-Generation Reproduction Toxicity,” dated May 26, 1983.
- OECD Test Guideline No. 416, “Two-Generation Reproduction Toxicity,” dated May 26, 1983.
- *Principles for the Testing of Drugs for Teratogenicity*, Technical Report Series Number 364, published by the World Health Organization, 1967.

6. Reproductive Toxicity

- OECD Test Guideline No. 415, “One-Generation Reproduction Toxicity,” dated May 26, 1983.
- OECD Test Guideline No. 416, “Two-Generation Reproduction Toxicity,” dated May 26, 1983.

7. Skin or Eye Irritation

- OECD Test Guideline No. 404, “Acute Dermal Irritation/ Corrosion,” dated May 12, 1981 (updated July 17, 1992).
- OECD Test Guideline No. 405, “Acute Eye Irritation/Corrosion,” dated May 12, 1981.
- Draize Test. *The Journal of Pharmacology and Experimental Therapeutics*, 82: 377–390, 1944.

8. Skin Sensitization

- OECD Test Guideline No. 406, “Skin Sensitization,” dated May 12, 1981 (updated July 17, 1992).

Class E: Corrosive Material

- *Test Method, Laboratory Corrosion Testing of Metals for the Process Industries*, NACE Standard TM-01-69 (1976 Revision).
- OECD Test Guideline No. 404, “Acute Dermal Irritation/Corrosion, dated May 12, 1981 (updated July 17, 1992).

Class F: Dangerously Reactive Material

- OECD Test Guideline No. 403, “Acute Inhalation Toxicity,” dated May 12, 1981.

8.3 Computer Databases

Three types of databases on hazardous materials are available: dictionary, informational, and bibliographic.

8.3.1 Dictionary Databases

Dictionary databases help identify chemicals by linking names of chemicals to identification numbers, chemical structures, and the locations of toxicological information in other database files. Such databases are helpful with the Product Information and Hazardous Ingredients Sections of the MSDS.

Examples:

Chemical Dictionary File. Oakridge, Tn.: Biomedical and Environmental Information Analysis Section and the Oak Ridge National Laboratory. Available at the website: www.ornl.gov/sci/techresources/cdf/index.html

CHEMIDplus. Bethesda, Md.: National Library of Medicine. Available at the website: www.chem.sis.nlm.nih.gov/chemidplus

CHEMNAME. Available through DIALOG Information Services. Available at the website: www.dialog.com

CHEMSEARCH. Available through DIALOG Information Services.

CAS Registry. Chemical Abstracts Service. Available through STN International and at the website: www.cas.org

CHEMINDEX: Hamilton, On.: CCOHS. Available on the CHEMpendium™ CD-ROM and at the website: ccinfoweb.ccohs.ca

8.3.2 Informational Databases

Informational databases contain condensed, practical information on topics such as human health hazards, first aid, product safety and handling. Information is in a form that is helpful for filling out or evaluating most sections of MSDSs.

Examples:

CHEMINFO. Hamilton, On.: CCOHS. Available on the CHEMpendium™ CD-ROM and at the website: ccinfoweb.ccohs.ca

Detailed, practical information on substances including chemical and physical properties, toxicity, personal protection, storage, handling, and first aid. Written in non-technical language.

MSDS. Hamilton, On.: CCOHS. Available on the CHEMpendium™ CD-ROM and at the website: ccinfoweb.ccohs.ca

Complete text of MSDSs voluntarily provided by manufacturers.

RTECS® (The Registry of Toxic Effects of Chemical Substances Online). Cincinnati, Oh.: NIOSH. Available on Chempendium™ CD-ROM.

Summary toxicity information for more than 140,000 substances. Includes workplace exposure limits and refers to U.S. standards and regulations. If no toxicity data on a chemical exists in RTECS, it is unlikely data exists. Citations do not include author, name, or article title, and information is subject only to review by original journal of publication. Updated quarterly.

HSDB (Hazardous Substances Databank). Bethesda, Md.: National Library of Medicine. Available on CHEMpendium™ CD-ROM and at the website: <http://chem.sis.nlm.nih.gov/chemidplus>

Contains information on chemical and physical properties, toxic effects, standards and regulations, environmental fates, safety, and handling.

8.3.3 Bibliographic Databases

Bibliographic databases list citations, usually of abstracts or summaries of the reported data. Bibliographic databases rarely provide information that can be applied immediately and additional legwork is needed to collect and interpret data.

Examples:

CIS/ILO. Geneva, Switzerland: The International Occupational Safety and Health Information Centre/ Centre International d'Information de Securite et d'Hygiene du Travail, 1974-. Available on the CHEMpendium™ CD-ROM and at the website: ccinfoweb.ccohs.ca

Information is provided in three sections:

- Hazards, pathology, and control measures
- Industries and operations
- General problems, for example, law or occupational medicine

About 3,600 new records are added each year. Full text articles for each citation are stored under accession numbers at CCOHS.

Chemical Exposure. Oakridge, Tn.: Chemical Effects Center, Oak Ridge National Laboratory. Available through Dialog Information Services

Provides body burden information, that is, data on chemicals that have been identified in human and animal tissues as a result of environmental exposure.

HSELINE. United Kingdom: Health and Safety Executive, 1977-. Available on the CHEMpendium™ CD-ROM and at the website: ccinfoweb.ccohs.ca

Approximately 250 journals are scanned.

NIOSH TIC®. Cincinnati, Oh.: NIOSH, 1800s-mid-1998. Available through Dialog Information Services, Pergamon, CHEMpendium™ CD-ROM, and at the website: ccinfoweb.ccohs.ca

Provides author, title, place, publisher, and date. Covers literature from 19th century to mid-1998. Continued by OSHLINE.

NIOSH TIC-2. Cincinnati, Oh.: NIOSH, Sept. 1998-. Will be available starting January 2000 on the NIOSH website. Covers only NIOSH-authored or -supported research.

OSHLINE. Hamilton, On.: CCOHS, mid-1998-. Available on

CHEMpendium™ CD-ROM, and at the website: ccinfoweb.ccohs.ca

TOXLINE. Bethesda, Md.: National Library of Medicine, 1981–. Available through MEDLARS system

Sources include MEDLINE, Chemical Abstracts, CIS abstracts, EPA, and NTIS. Some idiosyncrasies in how data is filed and searched.

CHEMTOX. Brentwood, Tn.: Resource Consultants. Available through Dialog Information Services.

Contains environmental, health, and safety data for legislated or regulated chemical substances (U. S.), and substances with properties making them potential candidates for legislation or regulation.

Other databases such as BIOSIS (available through Dialog and the National Research Council), EMBASE (produced by Excerpta Medica and available through Dialog), and MEDLINE (available through Dialog and the NRC) contain information related but not specific to toxicology and industrial health.

8.4 References

American Conference of Governmental Industrial Hygienists. *Documentation of Threshold Limit Values and Biological Exposure Indices*, 6th ed. Cincinnati, Ohio: ACGIH, 1993.

Summary statements, which reflect the information considered by the ACGIH when assigning TLVs, are provided for more than 600 substances. Also supplements 1996–1999. Available from:

ACGIH Inc.
1330 Kemper Meadow Drive, Suite 600
Cincinnati, OH 45240
U.S.A.

American Conference of Governmental Industrial Hygienists. Committee on Industrial Ventilation. *Industrial Ventilation: A Manual of Recommended Practice*, 23rd ed. Lansing, Mich.: ACGIH, 1998.

Provides technical information on ventilation systems including a table on dilution volumes for various solvents.

Committee on Industrial Ventilation
ACGIH
Lansing, Michigan
U.S.A.

Benenson, Abram, ed. *Control of Communicable Diseases in Man*. Washington, D.C.: American Public Health Association, 1981.

A review of reservoirs, modes of transmission and control measures for approximately 200 microbiological disease agents. Out of print. Check libraries and second-hand bookstores.

American Public Health Association
1015 Fifteenth Street NW
Washington, DC 20005
U.S.A.

Braker and Mossman. *Matheson Gas Data Book*, 6th ed. Secaucus, N.J.: Matheson Gas Products Inc., 1980.

Provides detailed physical data on more than 100 gases. Available from:

Matheson Tri-Gas
Parsippany, NJ 07054-0624
U.S.A.

Canadian Standards Association. *CSA Standard Z94.3-92: Industrial Eye and Face Protectors*. Rexdale, Ont., Canadian Standards Association, 1992.

Canadian Standards Association. *CSA Standard Z94.4-93: Selection, Care, and Use of Respirators*. Rexdale, Ont., Canadian Standards Association, 1993.

Both available from:
CSA International
178 Rexdale Boulevard
Rexdale, ON M9W 1R3

CANUTEC. *Dangerous Goods Initial Emergency Response Guide*. Ottawa, Ont.: Canada Communication Group, 1992.

Provides summary emergency information on dangerous chemicals by product identification numbers in conjunction with the *TDG Act*. Available from:

Canadian Government Publishing Centre
284 Wellington Street
Ottawa, ON K1A 0H8

Chemical Rubber Company. *Handbook of Chemistry and Physics*, latest ed. Cleveland, Ohio: CRC Press, published annually.

Provides detailed information on physical data for chemical substances.

CRC Press
18901 Cranwood Parkway
Cleveland, OH 44128
U.S.A.

Clayton and Clayton, eds. *Patty's Industrial Hygiene and Toxicology*, 4th ed. New York: John Wiley and Sons, 1991.

A five-volume publication on both occupational hygiene practices and toxicology of specific chemicals. Available from:

Wiley-Interscience Publication
John Wiley and Sons
NY, U.S.A.

Goselin, Smith et al. *Clinical Toxicology of Commercial Products*. 5th ed. Baltimore, Md.: Williams and Wilkins, 1984.

Provides lists of ingredients of various commercial products and toxicological reviews of some ingredients. Out of print. Check libraries and second-hand bookstores.

Williams and Wilkins
Baltimore, Maryland
U.S.A.

Grant, W. Morton. *Toxicology of the Eye*, 4th ed. Springfield, Ill.: Charles C. Thomas Publishers, 1993.

Available from:
Charles C. Thomas Publishers
Springfield, IL
U.S.A.

Harper, R.E.C., Bate Smith, and D.G. Land. *Odour Description and Odour Classification*. New York: American Elsevier, 1968.

Hayes, W. J. *Pesticides Studied in Man*. Baltimore, Md.: Williams and Wilkins, 1982.

Detailed toxicological information on a wide variety of individual and chemical families of pesticide. Out of print. Check libraries and second-hand bookstores.

Williams and Wilkins
428 East Preston Street
Baltimore, MD 21202
U.S.A.

Health Canada. WHMIS Division, Product Safety Bureau. *Reference Manual for the WHMIS Requirements of the Hazardous Products Act and the Controlled Products Regulations*. Ottawa, Ont.: Health Canada, 1996.

Ingredient Disclosure List. *The Canada Gazette*. Part II. Vol. 122, No. 2

Medical Research Council of Canada. *Guidelines for the Handling of Recombinant DNA Molecules and Animal Viruses and Cells*. Ottawa, Ont.: MRC Publications, 1980.

Provides classification of viruses by level of hazard and standards of laboratory practice.

Publications. Out of print. Check libraries and second-hand bookstores.

National Fire Protection Association. *Fire Protection Guide on Hazardous Materials*, 12th ed. Boston, Mass.: National Fire Protection Association, 1997.

Provides hazard information related to fires, explosions, and decomposition products for a wide variety of materials. Available from:

National Fire Protection Association
PO Box 9101
1 Batterymarch Park
Quincy, MA 02269-9101
U.S.A.

NIOSH Publications

NIOSH produces publications such as:

- *Criteria Documents*. Provides detailed discussions of toxic effects of specific substances and likelihood of exposure.
- *Occupational Health Guidelines for Chemical Hazards*, 1981 and supplements. Reviews hazard control information on various substances in a format similar to MSDSs.
- *Pocket Guide to Chemical Hazards*, 5th ed., 1997. Acts as a quick reference to toxicological and physical data on chemicals and a respirator selection guide.
- *RTECS: Registry of Toxic Effects of Chemical Substances*. Summarizes chemical and toxicological information on more than 140,000 substances. (RTECS[®] is also available as a database from CCOHS.)

Available from:

Robert A. Taft Laboratories
4676 Columbia Parkway
Cincinnati, OH 45226
U.S.A.

Reynolds and Prasad, eds. *Martindale: The Complete Drug Reference*, 32nd ed. London, U.K.: Pharmaceutical Press, 1999.

Provides detailed physical, chemical, toxicological and treatment information on pharmaceutical chemicals. Available from:

Pharmaceutical Press
London, UK

Richmond, Jonathan Y., and Robert W. McKinney. *Biosafety in Microbiological and Biomedical Laboratories*. 3rd ed., Washington, D.C.: U.S. Department of Health and Human Services, 1993.

Provides hazard classification for arboviruses and associated safe laboratory practice. Available from:

Diane Publishing Company
Upland, PA
U.S.A.

Sax, Irving N. *Dangerous Properties of Industrial Materials*, latest ed. New York: Van Nostrand Reinhold, published annually.

Provides summarized chemical, physical, toxicological, incompatibility, and fire-related information on a wide variety of chemicals. Can be used in conjunction with *Hazardous Chemicals Information Annual* (see Part 8.6), which provides updates on specific chemicals. Available from:

Van Nostrand Reinhold
115 Fifth Avenue
New York, NY 10003
U.S.A. 10003

Sittig, Marshall. *Handbook of Toxic and Hazardous Chemicals and Carcinogens*, 3rd ed. Park Ridge, N.J.: Noyes Publications, 1991.

Provides synopsis of exposure limits, routes of entry, harmful effects, protective and disposal methods for approximately 1,000 chemicals. Available from:

Noyes Publications
Noyes Data Corp.,
Mill Road at Grand Avenue,
Park Ridge, NJ 07656
U.S.A.

Stellman, Jeanne Mager, ed. *Encyclopedia of Occupational Health and Safety*, 4th ed. Geneva: International Labour Office, 1998.

Windholz, Budavari et al., eds. *The Merck Index - An Encyclopedia of Chemical, Drugs, and Biologicals*, 12th ed. Rahway, N.J.: Merck and Co. Inc., 1996.

Provides summary physical, chemical and acute toxicological information on various chemicals, including drugs and cosmetics. Available from:

Merck and Co. Inc.
Rahway, New Jersey
U.S.A.

WorkSafeBC. *Suppliers' Guide to WHMIS: Preparing Compliant MSDSs and Supplier Labels*. Richmond, B.C.: WorkSafeBC, 2006.

8.5 Periodicals

A wide variety of periodicals specializing in toxicology and occupational hygiene is published. Examples include:

American Industrial Hygiene Association Journal

AIHA
2700 Prosperity Avenue, Suite 250
Fairfax, VA 22031
U.S.A.

Applied Occupational and Environmental Hygiene

ACGIH Inc.
Kemper Woods Center,
1330 Kemper Meadow Drive
Cincinnati, OH 45240
U.S.A.

American Journal of Industrial Medicine

Wiley-Liss Inc.
605 Third Avenue
New York, NY 10158-0012
U.S.A.

Annals of Occupational Hygiene

Elsevier Science
PO Box 945
New York, NY 10159-0945
U.S.A.

Archives of Environmental Health

Heldref Publications
1319 Eighteenth Street NW
Washington, DC 20036-1802
U.S.A.

CA Selects: Chemical Hazards Health and Safety

Chemical Abstracts Service
PO Box 3012
2540 Olentangy River Road
Columbus, OH 43210-0012
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655 Avenue of the Americas
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International Archives of Occupational and Environmental Health
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Journal of Occupational and Environmental Medicine
Lippincott, Williams, and Wilkins
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Occupational and Environmental Medicine
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PO Box 299
London, U.K.
WC1H 9TD

Occupational Health and Safety Canada
Occupational Health and Safety Canada Magazine
1450 Don Mills Road
Don Mills, ON M3B 2X7

8.6 References for Further Information on Resources

Halton, David M (CCOHS). Computerized Information Resources in Toxicology and Industrial Health – A Review. *Toxicology and Industrial Health* 2(1): 113-125, 1986.

Tucker, M. E. *Industrial Hygiene: A Guide to Technical Information Sources*. Fairfax, Va.: American Industrial Hygiene Association, 1984.

8.7 Internet Sites

Contact	Internet Site	Description
3M	www.3M.com/intl/CA/ohes.html	Information on the selection of respirators
Agency for Toxic Substances and Disease Registry (ATSDR)	www.atsdr.cdc.gov/toxpro2.html	Information on Toxicological profiles developed by ATSDR
American Conference of Governmental Industrial Hygienists (ACGIH)	www.acgih.org	TLVs and BEIs for chemical substances
American Industrial Hygiene Association	www.aiha.org	Information on AIHA and discussions on industrial hygiene
Ansell Healthcare	www.ansellpro.com	Information on glove selection
American National Standards Association	www.ansi.org	Information on ANSI and links to national and international standards
American Society for Testing and Materials	www.astm.org	Information on ASTM. Online store for ASTM test methods
Canada Justice	www.canada.justice.gc.ca	Canadian federal regulations and acts
Canadian Auto Workers Association	www.caw.ca/whatwedo/health&safety/factsheet/index.asp	Health and safety fact sheets
Canadian Center for Occupational Health and Safety (CCOHS)	www.ccohs.ca	Information on CCOHS, occupational health and safety issues. Links to subscription databases and related sites
CanOSH Websites	www.canoshweb.org/oshmainpage.html	Links to Canadian OSH websites
Canadian Standards Association	www.csa-international.org	CSA news releases, directory information and products
Canutec	www.canutec.gc.ca	Emergency response information for Transport Canada
CAS Databases	www.cas.org/casdb.html	Chemical Abstract Services databases with abstracts from journal articles; comprehensive chemistry coverage
Centers for Disease Control and Prevention (CDC)	www.cdc.gov	CDC publications, data, statistics, etc.
Chemical Finder	www.chemfinder.com	Chemical information database
Environmental Protection Agency (EPA)	www.epa.gov	Information on environmental issues and links to related information
Environmental Protection Agency (EPA)	www.epa.gov/opptintr/chemfact/#pdfversions	Information on chemical spills; fact sheets
Fisher Scientific	www.fishersci.com	Link to MSDSs
Genium Publishing Corporation	www.genium.com/	Material safety data sheets for a fee from a MSDS database
Health Canada – Product Safety Bureau	www.hc-sc.gc.ca/hecs-sesc/whmis/	WHMIS information
Health Canada – Biosafety	www.hc-sc.gc.ca/sr-sr/biotech/role/index_e.html	Links to news, updates, LCDC programs, MSDSs for biohazards.
Hazardous Materials Information Review Commission	www.hmirc-ccrmd.gc.ca	HMIRC information
Human Resources Development Canada (Labour Program)	www.hrsdc.gc.ca/en/gateways/nav/top_nav/program/labour.shtml	Links to Canada Labour Code, Part II on Occupational Health and Safety

Contact	Internet Site	Description
International Agency for Cancer Research (IARC)	www.iarc.fr/	Information on IARC, links to WHO, and Lists of IARC evaluations
IPCS-INCHEM	www.inchem.org/search.html	Searchable collection of information on hazardous chemicals compiled by international bodies
Medscape	www.medscape.com	Free, full-text, peer-reviewed and medical news
MSDS on Internet	www.ilpi.com/msds/index.html	Link to MSDS sites, government agencies, chemical manufacturers and suppliers and safety publications
MSDS search	www.msdssearch.com	Links to MSDSs
National Association of Corrosion Engineers (NACE)	www.nace.org	NACE news and order form for NACE Standard test methods
National Fire Protection Agency (NFPA)	www.nfpa.org/index.asp	NFPA ratings of chemicals
National Institute of Environmental Health Sciences (NIES)	www.niehs.nih.gov	National Toxicology Program (NTP); text of Environmental Perspectives Journal; environmental health issues
National Institute of Occupational Safety & Health	www.cdc.gov/niosh/ipcs/icstart.html	International chemical safety cards
National Institute of Occupational Safety & Health	www.cdc.gov/niosh/nppt/topics/protclothing	Advice on selecting protective clothing
National Library of Medicine (NLM)	www.nlm.nih.gov	Free access to MEDLINE; Links to Internet Grateful Med & PubMed; health and medical information; toxicology and environmental health information (ie. HSDB, Toxline, RTECS)
OECD Chemical Test Guidelines	www.oecd.org/department/0,2688,en_2649_34377_1_1_1_1_1,1,00.html	Information on OECD guidelines for testing chemicals. Monograph series on testing and assessment
Occupational Safety & Health Administration	www.osha.gov/SLTC/reactivechemicals/index.html	OSHA chemical hazards
Physical and Theoretical Chemistry Laboratory Oxford University	http://physchem.ox.ac.uk/MSDS/	Chemical safety information
Transport Canada	www.tc.gc.ca/tdg/menu.htm	TDG information and legislation
U.S. Occupational Safety and Health Administration (OSHA)	www.osha.gov/	OSHA standards and technical information on health and safety
Vermont SIRI (Safety Information Resources on the Internet) Website	www.siri.org/ or www.hazard.com	Occupational and environmental health and safety information, MSDSs, safety issue sheets, OH&S resources
World Health Organization (WHO)	www.who.int/en/	WHO directory and program information, links to WHO library and publications