

STATE OF ARKANSAS
DEPARTMENT OF LABOR

SAFETY CODE # 12

**PUBLIC EMPLOYEES' CHEMICAL
RIGHT TO KNOW ACT**

Promulgated

by

**ARKANSAS DEPARTMENT OF LABOR
Little Rock, Arkansas**

These rules and regulations are promulgated by the Director of Labor of the State of Arkansas pursuant to the authority granted by Ark. Code Ann. " 8-7-1001 through -1016 and 11-2-110, -112 and -113 (1987 and Supp.)

12-(a) PURPOSE.

(1) The purpose of these regulations is to ensure that the hazards of all chemicals produced or imported are evaluated, and that information concerning their hazards is transmitted to public employees. This transmittal of information is to be accomplished by means of comprehensive hazard communication programs, which are to include container labeling and other forms of warning, material safety data sheets and employee training.

(2) This occupational safety and health standard is intended to address comprehensively the issue of evaluating the potential hazards of chemicals, and communicating information concerning hazards and appropriate protective measures to employees. Evaluating the potential hazards of chemicals, and communicating information concerning hazards and appropriate protective measures to employees shall include, for example, but is not limited to, provisions for: developing and maintaining a written hazard communication program for the workplace, including lists of hazardous chemicals present; labeling of containers of chemicals in the workplace, as well as of containers of chemicals being shipped to other workplaces; preparation and distribution of material safety data sheets to employees and downstream employers; and development and implementation of employee training programs regarding hazards of chemicals and protective measures.

12-(b) SCOPE AND APPLICATION.

(1) These regulations require chemical manufacturers and distributors to provide public employers with material safety data sheets on hazardous chemicals purchased, produced or otherwise obtained. These regulations require all public employers to provide information to their employees about the hazardous chemicals to which they are exposed under normal operating conditions or in foreseeable emergencies, by means of a hazard communication program, labels and other forms of warning, material safety data sheets, and information and training.

(2) These regulations apply to any chemical which is known to be present in the workplace in such a manner that employees may be exposed under normal conditions of use or in a foreseeable emergency.

(3) These regulations do not require labeling of the following chemicals:

(i) Any pesticide as such term is defined in the Federal Insecticide, Fungicide, and Rodenticide Act (7 U.S.C. 136 et seq.), when subject to the labeling requirements of that Act and labeling regulations issued under that Act by the Environmental Protection Agency;

(ii) Any food, food additive, color additive, drug, cosmetic, or medical or veterinary device, including materials intended for use as ingredients in such products (e.g. flavors and fragrances), as such terms are defined in the Federal Food, Drug, and Cosmetic Act (21 U.S.C. 301 et seq.) and regulations issued under that Act, when they are

subject to the labeling requirements under that Act by the Food and Drug Administration;

(iii) Any distilled spirits (beverage alcohols), wine, or malt beverage intended for nonindustrial use, as such terms are defined in the Federal Alcohol Administration Act (27 U.S.C. 201 et seq.) and regulations issued under that Act, when subject to the labeling requirements of that Act and labeling regulations issued under that Act by the Bureau of Alcohol, Tobacco, and Firearms; and,

(iv) Any consumer product or hazardous substance as those terms are defined in the Consumer Product Safety Act (15 U.S.C. 2051 et seq.) and Federal Hazardous Substances Act (15 U.S.C. 1261 et seq.) respectively, when subject to a consumer product safety standard or labeling requirement of those Acts, or regulations issued under those Acts by the Consumer Product Safety Commission.

(4) These regulations do not apply to:

(i) Any hazardous waste as such term is defined by the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act of 1976, as amended (42 U.S.C. 6901 et seq.), when subject to regulations issued under that Act by the Environmental Protection Agency;

(ii) Tobacco or tobacco products;

(iii) Wood or wood products;

(iv) Articles;

(v) Food, drugs, cosmetics, or alcoholic beverages purchased in a retail establishment and packaged for sale to consumers;

(vi) Foods, drugs, or cosmetics intended for personal consumption by employees while in the workplace;

(vii) Any consumer product or hazardous substance, as those terms are defined in the Consumer Product Safety Act (15 U.S.C. 2051 et seq.) and Federal Hazardous Substances Act (15 U.S.C. 1261 et seq.) respectively, where the employer can demonstrate it is used in the workplace in the same manner as normal consumer use, and which use results in a duration and frequency of exposure which is not greater than exposure experienced by consumers; and,

(viii) Any drug, as that term is defined in the Federal Food, Drug, and Cosmetic Act (21 U.S.C. 301 et seq.), when it is in solid, final form for direct administration to the patient (i.e., tablets or pills).

12-(c) DEFINITIONS.

(1) "Article" means a manufactured item:

(i) Which is formed to a specific shape or design during manufacture;

(ii) which has end use function(s) dependent in whole or in part upon its shape or design during end use; and

(iii) which does not release, or otherwise result in exposure to, a hazardous chemical, under normal conditions of use.

(2) "Chemical" means any element, chemical compound or mixture of

elements and/or compounds.

(3) "Chemical manufacturer" means an employer with a workplace where chemical(s) are produced for use or distribution.

(4) "Chemical name" means the scientific designation of a chemical in accordance with the nomenclature system developed by the International Union of Pure and Applied Chemistry (IUPAC) or the Chemical Abstracts Service (CAS) rules of nomenclature, or a name which will clearly identify the chemical for the purpose of conducting a hazard evaluation.

(5) "Combustible liquid" means any liquid having a flashpoint at or above 100°F (37.8°C), but below 200°F (93.3°C), except any mixture having components with flashpoints of 200°F (93.3°C), or higher, the total volume of which make up 99 percent or more of the total volume of the mixture.

(6) "Common name" means any designation or identification such as code name, code number, trade name, brand name or generic name used to identify a chemical other than by its chemical name.

(7) "Compressed gas" means:

(i) A gas or mixture of gases having, in a container, an absolute pressure exceeding 40 psi at 70°F (21.1°C); or

(ii) a gas or mixture of gases having, in a container, an absolute pressure exceeding 104 psi at 130°F (54.4°C) regardless of the pressure at 70°F (21.1°C); or

(iii) a liquid having a vapor pressure exceeding 40 psi at 100°F (37.8°C) as determined by ASTM D-323-72.

(8) "Container" means any bag, barrel, bottle, box, can, cylinder, drum, reaction vessel, storage tank, or the like that contains a hazardous chemical. For purposes of these regulations, pipes or piping systems, and engines, fuel tanks, or other operating systems in a vehicle, are not considered to be containers.

(9) "Designated representative" means any individual or organization to whom an employee gives written authorization to exercise such employee's rights under these regulations. A recognized or certified collective bargaining agent shall be treated automatically as a designated representative without regard to written employee authorization.

(10) "Director" means the Director of the Arkansas Department of Labor, or his designee.

(11) "Distributor" means a business other than a chemical manufacturer or importer, which supplies hazardous chemicals to other distributors or to employers.

(12) "Employee" or "Public Employee" means any worker employed by a public employer who may be exposed to hazardous chemicals under normal operating conditions or in foreseeable emergencies. Office workers and nonresident management are not generally included unless their job performance routinely involves potential exposure to hazardous chemicals. The term "employee" or "public employee" includes:

(i) State Employees and Officers: Any officer or employee of any state agency, board, commission, department, institution, college, university, or

community college receiving appropriation for regular salaries, extra help or authorized overtime payable from funds deposited in the State Treasury or depositories other than the State Treasury by the General Assembly;

(ii) **Public School Employees:** Any officer or employee of the various school districts of this state;

(iii) **Municipal Employees:** Any officer or employee of the municipalities of this state, the employees of any board, commission, department, or institution owned, operated, managed, and administered by the municipalities;

(iv) **County Employees:** Any officer or employee of the counties of this state, the employees of any board, commission, department, or institution owned, operated, managed, and administered by the counties; and

(v) **Volunteer Workers:** Any volunteer worker acting subject to the order, control, direction or supervision of a public employer. This includes volunteer firefighters deemed to be county employees for the purpose of workers' compensation coverage pursuant to Ark. Code Ann. ' 20-22-809 (Supp. 1991). Prisoners or inmates incarcerated in state, county or local government facilities are not covered.

(13) **"Employer" or "Public Employer" means:**

(i) Any state agency, board, commission, department, institution, college, university, or community college receiving appropriation for regular salaries, extra help, and authorized overtime payable from funds deposited in the State Treasury or depositories other than the State Treasury by the General Assembly;

(ii) Any municipality of the State of Arkansas or any department, board commission, or institution owned, operated, managed, and administered by a municipality of the State of Arkansas.

(A) Any municipal hospital or nursing home operated, managed, or administered by a private management company or enterprise, whether under a contract for management, under a lease agreement, or under any other type of management arrangement, is a private employer and not covered under these regulations;

(B) Any unincorporated city or town shall not be deemed to be a public employer;

(iii) Any county of the State of Arkansas or any department, board, commission, or institution owned, operated, managed, and administered by a county of the State of Arkansas. However, any county hospital or nursing home operated, managed, or administered by a private management company or enterprise, whether under a contract for management, or under a lease agreement, or under any other type of management arrangement, is a private employer and not covered under these regulations;

(iv) Any of the various school districts in the State of Arkansas;

(v) The State Office of Emergency Services and any local government unit making use of emergency service volunteer workers.

(14) **"Explosive"** means a chemical that causes a sudden, almost instantaneous release of pressure, gas, and heat when subjected to sudden shock, pressure, or high temperature.

(15) **"Exposure" or "exposed"** means that an employee is subjected to a

hazardous chemical in the course of employment through any route of entry (inhalation, ingestion, skin contact or absorption, etc.), and includes potential (e.g. accidental or possible) exposure.

(16) "Flammable" means a chemical that falls into one of the following categories:

(i) "Aerosol, flammable" means an aerosol that, when tested by the method described in 16 CFR 1500.45, yields a flame projection exceeding 18 inches at full valve opening, or a flashback (a flame extending back to the valve) at any degree of valve opening;

(ii) "Gas, flammable" means:

(A) A gas that, at ambient temperature and pressure, forms a flammable mixture with air at a concentration of thirteen (13) percent by volume or less; or

(B) A gas that, at ambient temperature and pressure, forms a range of flammable mixtures with air wider than twelve (12) percent by volume, regardless of the lower limit;

(iii) "Liquid, flammable" means any liquid having a flashpoint below 100°F (37.8°C), except any mixture having components with flashpoints of 100°F (37.8°C) or higher, the total of which make up 99 percent or more of the total volume of the mixture;

(iv) "Solid, flammable" means a solid, other than a blasting agent or explosive as defined in 29 CFR 190.109(a), that is liable to cause fire through friction, absorption of moisture, spontaneous chemical change, or retained heat from manufacturing or processing, or which can be ignited readily and when ignited burns so vigorously and persistently as to create a serious hazard. A chemical shall be considered to be a flammable solid if, when tested by the method described in 16 CFR 1500.44, it ignites and burns with a self-sustained flame at a rate greater than one-tenth of an inch per second along its major axis.

(17) "Flashpoint" means the minimum temperature at which a liquid gives off a vapor in sufficient concentration to ignite when tested as follows:

(i) Tagliabue Closed Tester (See American National Standard Method of Test for Flash Point by Tag Closed Tester, Z11.24-1979 (ASTM D 56-79)) for liquids with a viscosity of less than 45 Saybolt University Seconds (SUS) at 100°F (37.8°C), that do not contain suspended solids and do not have a tendency to form a surface film under test; or

(ii) Pensky-Martens Closed Tester (See American National Standard Method of Test for Flash Point by Pensky-Martens Closed Tester, Z11.7-1979 (ASTM D 93-79)) for liquids with a viscosity equal to or greater than 45 SUS at 100°F (37.8°C), or that contain suspended solids, or that have a tendency to form a surface film under test; or

(iii) Setaflash Closed Tester (See American National Standard Method of Test for Flash Point by Setaflash Closed Tester (ASTMD 3278-78))

Organic peroxides, which undergo autoaccelerating thermal decomposition, are excluded from any of the flash-point determination methods specified above.

(18) "Foreseeable emergency" means any potential occurrence such as, but not limited to, equipment failure, rupture of containers, or failure of control equipment which

could result in an uncontrolled release of a hazardous chemical into the workplace.

(19) "Hazardous chemical" means any chemical which is a physical hazard or a health hazard.

(20) "Hazard warning" means any words, pictures, symbols, or combination thereof appearing on a label or other appropriate form of warning which convey the hazard(s) of the chemical(s) in the container(s).

(21) "Health hazard" means a chemical for which there is statistically significant evidence based on at least one study conducted in accordance with established scientific principles that acute or chronic health effects may occur in exposed employees. The term "health hazard" includes chemicals which are carcinogens, toxic or highly toxic agents, reproductive toxins, irritants, corrosives, sensitizers, hepatotoxins, nephrotoxins, neurotoxins, agents which act on the hematopoietic system, and agents which damage the lungs, skin, eyes, or mucous membranes. Appendix B provides further definitions and explanations of the scope of health hazards covered by this section, and Appendix C describes the criteria to be used to determine whether or not a chemical is to be considered hazardous for purposes of this standard.

(22) "Identity" means any chemical or common name which is indicated on the material safety data sheet (MSDS) for the chemical. The identity used shall permit cross-references to be made among the required list of hazardous chemicals, the label and the MSDS.

(23) "Immediate use" means that the hazardous chemical will be under the control of and used only by the person who transfers it from a labeled container and only within the work shift in which it is transferred.

(24) "Label" means any written printed, or graphic material, displayed on or affixed to containers of hazardous chemicals.

(25) "Material safety data sheet (MSDS)" means written or printed material concerning a hazardous chemical which is prepared in accordance with paragraph 12-(g) of these regulations.

(26) "Mixture" means any combination of two or more chemicals if the combination is not, in whole or in part, the result of a chemical reaction.

(27) "Organic peroxide" means an organic compound that contains the bivalent-O-O-structure and which may be considered to be a structural derivative of hydrogen peroxide where one or both of the hydrogen atoms has been replaced by an organic radical.

(28) "Oxidizer" means a chemical other than a blasting agent or explosive as defined in 29 CFR 1910.109(a), that initiates or promotes combustion in other materials, thereby causing fire either of itself or through the release of oxygen or other gases.

(29) "Physical hazard" means a chemical for which there is scientifically valid evidence that it is a combustible liquid, a compressed gas, explosive, flammable, an organic peroxide, an oxidizer, pyrophoric, unstable (reactive) or water-reactive.

(30) "Produce" means to manufacture, process, formulate, or repackage.

(31) "Pyrophoric" means a chemical that will ignite spontaneously in air at a temperature of 130°F (54.4°C) or below.

(32) "Specific chemical identity" means the chemical name, Chemical Abstracts Service (CAS) Registry Number, or any other information that reveals the precise chemical designation of the substance.

(33) "Trade secret" means any confidential formula, pattern, process, device, information or compilation of information that is used in an employer's business, and that gives the employer an opportunity to obtain an advantage over competitors who do not know or use it. Appendix E sets out the criteria to be used in evaluating trade secrets.

(34) "Unstable (reactive)" means a chemical which in the pure state, or as produced or transported, will vigorously polymerize, decompose, condense, or will become self-reactive under conditions of shocks, pressure or temperature.

(35) "Use" means to package, handle, react, or transfer.

(36) "Water-reactive" means a chemical that reacts with water to release a gas that is either flammable or presents a health hazard.

(37) "Work area" means a room or defined space in a workplace where hazardous chemicals are produced or used, and where employees are present.

(38) "Workplace" means an establishment, job site, or project, at one geographical location containing one or more work areas under a public employer's control or direction.

12-(d) HAZARD DETERMINATION

(1) Public employers are not required to evaluate chemicals to determine if they are hazardous unless they choose not to rely on the evaluation performed by the chemical manufacturer and the material safety data sheet provided by the chemical manufacturer or distributor.

(2) Chemical manufacturers or employers evaluating chemicals shall identify and consider the available scientific evidence concerning such hazards. For health hazards, evidence which is statistically significant and which is based on at least one positive study conducted in accordance with established scientific principles is considered to be sufficient to establish a hazardous effect if the results of the study meet the definitions of health hazards in this section. Appendix B shall be consulted for the scope of health hazards covered, and Appendix C shall be consulted for the criteria to be followed with respect to the completeness of the evaluation, and the data to be reported.

(3) The chemical manufacturer or employer evaluating chemicals shall treat the following sources as establishing that the chemicals listed in them are hazardous:

(i) 29 CFR Part 1910, Subpart Z, Toxic and Hazardous Substances, Occupational Safety and Health Administration (OSHA); or,

(ii) Threshold Limit Values for Chemical Substances and Physical Agents in the Work Environment. American Conference of Governmental Industrial Hygienists (ACGIH) (latest edition).

The chemical manufacturer or employer is still responsible for evaluating the hazards associated with the chemicals in these source lists in accordance with the requirements of this standard.

(4) Chemical manufacturers and employers evaluating chemicals shall treat the following sources as establishing that a chemical is a carcinogen or potential carcinogen for hazard communication purposes:

(i) National Toxicology Program (NTP), Annual Report on Carcinogens (latest editions);

(ii) International Agency for Research on Cancer (IARC) Monographs (latest editions); or

(iii) 29 CFR Part 1910, Subpart Z, Toxic and Hazardous Substances, Occupational Safety and Health Administration;

Note: The Registry of Toxic Effects of Chemical Substances published by the National Institute for Occupational Safety and Health indicates whether a chemical has been found by NTP or IARC to be a potential carcinogen.

(5) The chemical manufacturer or employer shall determine the hazards of mixtures of chemicals as follows:

(i) If a mixture has been tested as a whole to determine its hazards, the results of such testing shall be used to determine whether the mixture is hazardous;

(ii) If a mixture has not been tested as a whole to determine whether the mixture is a health hazard, the mixture shall be assumed to present the same health hazards as do the components which comprise one percent (by weight or volume) or greater of the mixture, except that the mixture shall be assumed to present a carcinogenic hazard if it contains a component in concentrations of 0.1 percent or greater which is considered to be a carcinogen under paragraph 12-(d)(4) of this regulation;

(iii) If a mixture has not been tested as a whole to determine whether the mixture is a physical hazard, the chemical manufacturer or employer may use whatever scientifically valid data is available to evaluate the physical hazard potential of the mixture; and,

(iv) If the chemical manufacturer or employer has evidence to indicate that a component present in the mixture in concentrations of less than one percent (or in the case of carcinogens, less than 0.1 percent) could be released in concentrations which would exceed an established OSHA permissible exposure limit or ACGIH Threshold Limit Value, or could present a health hazard to employees in those concentrations, the mixture shall be assumed to present the same hazard.

(6) Employers evaluating chemicals shall describe in writing the procedures they use to determine the hazards of the chemical they evaluate. The written procedures are to be made available, upon request, to employees, their designated representatives, and the Director. The written description shall be incorporated into the hazard communication program under 12-(e) of these regulations.

12-(e) HAZARD COMMUNICATION PROGRAM

(1) Employers shall develop, implement, and maintain at the workplace, a written hazard communication program for their workplaces which at least describes how the criteria specified in paragraphs 12-(f), 12-(g), and 12-(h) of these regulations for labels and other forms of warning, material safety data sheets, and employee information and training will be met, and which shall include the following:

(i) A list of the hazardous chemicals known to be present, regardless of quantity, using an identity that is referenced on the appropriate material safety data sheet (the list may be compiled for the workplace as a whole or for individual work area); and,

(ii) The methods the employer will use to inform employees of the hazards of non-routine tasks, and the hazards associated with chemicals contained in unlabeled pipes in their work areas.

(2) Multi-employer workplaces. Employers who produce, use or store hazardous chemicals at a workplace in such a way that the employees of other employer(s) may be exposed (for example, employees of State Building Services working on-site at another state agency) shall ensure that they have a hazard communication program developed and implemented which includes the following:

(i) The methods the employer will use to provide the other employer(s) with a copy of the material safety data sheet, or to make it available at a central location in the workplace, for each hazardous chemical the other employer(s)' employees may be exposed to while working;

(ii) The methods the employer will use to inform the other employer(s) of any precautionary measures that need to be taken to protect employees during the workplace's normal operating conditions and in foreseeable emergencies; and,

(iii) The methods the employer will use to inform the other employer(s) of the labeling system used in the workplace.

(3) The employer shall make any written hazard communication program available, upon request, to employees, their designated representatives, and the Director.

12-(f) LABELS AND OTHER FORMS OF WARNING.

(1) Chemical manufacturers and distributors shall label each container of hazardous chemicals as required by 29 CFR 1910.1200. The employer need not affix new labels to comply with this regulation 12-(f) if existing labels already convey the required information.

(2) The employer shall ensure that each container of hazardous chemicals in the workplace is labeled, tagged or marked with the following information:

(i) Identity of the hazardous chemical(s) contained therein;
and

(ii) Appropriate hazard warnings.

(3) The employer is not required to label portable containers into which hazardous chemicals are transferred from labeled containers, and which are intended only for the immediate use of the employee who performs the transfer.

(4) The employer shall not remove or deface existing labels on incoming containers of hazardous chemicals.

(5) If a hazardous chemical is transferred from the original container to another container, the employer shall reproduce or otherwise place on the container to which the hazardous chemical was transferred the information required by 12-(f)(2). However, if such hazardous chemical is regulated under the Federal Insecticide, Fungicide, and Rodenticide Act, 7 United States Code " 136 et seq., or the Arkansas Pesticide Control Act, Arkansas Code " 2-16-401 et seq., then such employer shall reproduce on the container to which such hazardous chemical was transferred the chemical name or common name on the original container.

(6) The employer shall ensure that labels or other forms of warning are legible, in English, and prominently displayed on the container. Employers having employees who read only other languages shall add the information in their language to the material presented.

12-(g) MATERIAL SAFETY DATA SHEETS

(1) Chemical manufacturers shall obtain or develop a material safety data sheet for each hazardous chemical they produce or import. Employers shall have a material safety data sheet for each hazardous chemical which they use. Employers shall obtain or develop a material safety data sheet for each hazardous chemical they reproduce or generate.

(2) Each material safety data sheet shall be in English and shall contain at least the following information:

(i) The identity used on the label, and, except as provided for in regulation 12-(i) on trade secrets:

(A) If the hazardous chemical is a single substance, its chemical and common name(s);

(B) If the hazardous chemical is a mixture which has been tested as a whole to determine its hazards, the chemical and common name(s) of the ingredients which contribute to these known hazards, and the common name(s) of the mixture itself; or,

(C) If the hazardous chemical is a mixture which has not been tested as a whole: (1) The chemical and common name(s) of all ingredients which have been determined to be health hazards, and which comprise 1% or greater of the composition, except that chemicals identified as carcinogens under regulation 12-(d)(4) shall be listed in the concentrations are 0.1% or greater; and, (2) The chemical and common name(s) of all ingredients which have been determined to be health hazards, and which comprise less than 1% (0.1% for carcinogens) of the mixture, if there is evidence that the ingredient(s) could be released from the mixture in concentrations which would exceed an established OSHA permissible exposure limit or ACGIH Threshold Limit Value, or could present a health hazard to employees; and, (3) The chemical and common name(s) of all ingredients which have been determined to present a physical hazard when present in the mixture;

(ii) Physical and chemical characteristics of the hazardous chemical (such as vapor pressure, flash point);

(iii) The physical hazards of the hazardous chemical, including the potential for fire, explosion, and reactivity;

(iv) The health hazards of the hazardous chemical, including signs and symptoms of exposure, and any medical conditions which are generally recognized as being aggravated by exposure to the chemical;

(v) The primary route(s) of entry;

(vi) The OSHA permissible exposure limit, ACGIH Threshold Limit Value, and any other exposure limit used or recommended by the chemical manufacturer, importer, or employer preparing the material safety data sheet, where available;

(vii) Whether the hazard chemical is listed in the National Toxicology Program (NTP) Annual Report on Carcinogens (latest edition) or has been found to be a potential carcinogen in the International Agency for Research on Cancer (IARC) Monographs (latest editions), or by OSHA;

(viii) Any generally applicable precautions for safe handling and use which are known to the chemical manufacturer, importer or employer preparing the material safety data sheet, including appropriate hygienic practices, protective measures during repair and maintenance of contaminated equipment, and procedures for clean-up of spills and leaks;

(ix) Any generally applicable control measures which are known to the chemical manufacturer, importer or employer preparing the material safety data sheet, such as appropriate engineering controls, work practices, or personal protective equipment;

(x) Emergency and first aid procedures;

(xi) The date of preparation of the material safety data sheet or the last change to it; and,

(xii) The name, address and telephone number of the chemical manufacturer, importer, employer or other responsible party preparing or distributing the material safety data sheet, who can provide additional information on the hazardous chemical and appropriate emergency procedures, if necessary.

(3) If no relevant information is found for any given category on the material safety data sheet, the chemical manufacturer or employer preparing the material safety data sheet shall mark it to indicate that no applicable information was found.

(4) Where complex mixtures have similar hazards and contents (*i.e.*, the chemical ingredients are essentially the same, but the specific composition varies from mixture to mixture), the chemical manufacturer, importer or employer may prepare one material safety data sheet to apply to all of these similar mixtures.

(5) The chemical manufacturer or employer preparing the material safety data sheet shall ensure that the information recorded accurately reflects the scientific evidence used in making the hazard determination. If the chemical manufacturer or employer preparing the material safety data sheet becomes newly aware of any significant information regarding the hazards of a chemical, or ways to protect against the hazards, this new information shall be added to the material safety data sheet within three months. If the chemical is not currently being produced or imported the chemical manufacturer or importer shall add the information to the material safety data sheet before the chemical is introduced into the workplace again.

(6) Chemical manufacturers shall ensure that distributors and employers are provided an appropriate material safety data sheet with their initial shipment, and with the first shipment after a material safety data sheet is updated. The chemical manufacturer shall either provide material safety data sheets with the shipped containers or send them to the employer prior to or at the time of the shipment. If a material safety data sheet is not provided with the shipment that has been labeled as a hazardous chemical, the public employer shall request one in writing from the chemical manufacturer or distributor within five (5) business days.

(7) The employer shall maintain copies of the required material safety data sheets for each hazardous chemical in the workplace, and shall ensure that they are readily accessible during each work shift to employees and their designated representatives.

(8) Where employees must travel between workplaces during a workshift, i.e., their work is carried out at more than one geographical location, the material safety data sheets may be kept at a central location at the primary workplace facility. In this situation, the employer shall ensure that employees can immediately obtain the required information in an emergency. While material safety data sheets may be maintained at a central location in the primary workplace facility, a representative of the employer must be available at the central location to respond to requests for emergency information via telephone or other means.

(9) Material safety data sheets may be kept in any form, including operating procedures, and may be designed to cover groups of hazardous chemicals in a work area where it may be more appropriate to address the hazards of a process rather than individual hazardous chemicals. However, the employer shall ensure that in all cases the required information is provided for each hazardous chemical, and is readily accessible during each work shift to employees when they are in their work area(s).

(10) Material safety data sheets shall also be made readily available, upon request, to employees, their designated representatives and the Director.

(11) (i) If an MSDS for a hazardous chemical is not readily available upon request, an employee or his designated representative may submit a written request for the MSDS to the public employer. The employer, within three (3) business days, either shall furnish a copy of the requested MSDS to the requester or, if the requested MSDS is not in the employer's possession, shall demonstrate to the requester that the employer has made an effort to obtain the MSDS from the distributor, manufacturer, or other source.

(ii) If after two (2) weeks from receipt of the request the public employer has not furnished the requester with the requested MSDS, the employer shall not require the employee to work with the hazardous chemical for which the MSDS was requested until the MSDS is furnished, unless:

(A) The manufacturer of the substance for which the MSDS was requested furnishes a written statement that the substance is not a hazardous chemical as defined in Ark. Code Ann. " 8-7-1003; or

(B) The employer can demonstrate to the employee that the MSDS cannot be obtained through no fault of the employer; or

(C) The employer can demonstrate to the employee that the MSDS will be furnished by a date specified by the employer within one (1) additional week, provided that the employee shall not be required to work with the hazardous

chemical if the MSDS is not furnished by the date specified.

(iii) If an employee declines to work with a hazardous chemical as authorized by this regulation, he shall not be penalized. Reassignment of an employee to other work, at equal pay and benefits, shall not be considered a penalty under this regulation.

12-(h) EMPLOYEE INFORMATION AND TRAINING.

Employers shall provide employees with information and training on hazardous chemicals in their work area.

(1) **Information.** Employees shall be informed of:

(i) The requirements of these regulations and Ark. Code Ann. " 8-7-1001 et seq.;

(ii) Any operations in their work area where hazardous chemicals are present;

(iii) The location and availability of any written hazard communication program, including list(s) of hazardous chemicals; and,

(iv) The location and availability of the material safety data sheets.

(2) **Training.** Employee training shall include at least;

(i) Methods and observations that may be used to detect the presence or release of a hazardous chemical in the work area (such as monitoring conducted by the employer, continuous monitoring devices, visual appearance or odor of hazardous chemicals when being released, etc.);

(ii) The physical and health hazards of the chemicals in the work area;

(iii) The measures employees can take to protect themselves from these hazards, including specific procedures the employer has implemented to protect employees from exposure to hazardous chemicals, such as appropriate work practices, emergency procedures, and personal protective equipment to be used;

(iv) The details of the hazard communication program developed by the employer, including an explanation of the labeling system and the material safety data sheet, and how employees can obtain and use the appropriate hazard information;

(v) General safety instructions on the handling, cleanup, and disposal of the hazardous chemicals in the workplace; and

(vi) Training on the specific hazardous chemicals an employee will be encountering in his/her routine employment.

(3) **Frequency of training.**

(i) Each public employer shall provide the initial information and training to its employees prior to July 1, 1992.

(ii) New or newly assigned employees shall be provided training before working in a work area containing hazardous chemicals. Additional instruction or

training shall be provided whenever a new hazard is introduced into their work area or whenever new and significant information is received by the employer concerning the hazards of a chemical.

(iii) Refresher training shall be provided existing employees at least annually.

(4) Records. Public employers shall keep a record of the dates of training sessions given to their employees, together with the name(s) of those employees who attended such sessions.

(5) Exemption from training. Public employers are not required to provide the training mandated by regulation 12-(h)(2)-(3) to toxicologists, chemists, and industrial hygienists. A public employer may apply to the Director for a training exemption for other employees with specialized expertise relating to hazardous chemicals. Application for such an exemption shall be on a form approved and provided by the Director.

12-(i) TRADE SECRETS.

(1) The chemical manufacturer or employer may withhold the specific chemical identity, including the chemical name and other specific identification of a hazardous chemical, from the material safety data sheet, provided that:

(i) The claim that the information withheld is a trade secret can be supported;

(ii) Information contained in the material safety data sheet concerning the properties and effects of the hazardous chemical is disclosed;

(iii) The material safety data sheet indicates that the specific chemical identity is being withheld as a trade secret; and,

(iv) The specific chemical identity is made available to health professionals, employees, and designated representatives in accordance with the applicable provisions of this regulation.

(2) Where a treating physician or nurse determines that a medical emergency exists and the specific chemical identity of a hazardous chemical is necessary for emergency or first-aid treatment, the chemical manufacturer or employer shall immediately disclose the specific chemical identity of a trade secret chemical to that treating physician or nurse, regardless of the existence of a written statement of need of a confidentiality agreement. The chemical manufacturer or employer may require a written statement of need and confidentiality agreement, in accordance with the provisions of paragraphs 12-(i)(3) and (4) of this regulation, as soon as circumstances permit.

(3) In non-emergency situations, a chemical manufacturer or employer shall, upon request, disclose a specific chemical identity, otherwise permitted to be withheld under paragraph 12-(i)(1) of this regulation, to a health professional (i.e., physician, industrial hygienist, toxicologist, epidemiologist, or occupational health nurse) providing medical or other occupational health services to exposed employee(s), and to employees or designated representatives, if:

(i) The request is in writing;

(ii) The request describes with reasonable detail one or more of the following occupational health needs for the information:

(A) To assess the hazards of the chemicals to which employees will be exposed;

(B) To conduct or assess sampling of the workplace atmosphere to determine employee exposure levels;

(C) To conduct pre-assignment or periodic medical surveillance of exposed employees;

(D) To provide medical treatment to exposed employees;

(E) To select or assess appropriate personal protective equipment for exposed employees;

(F) To design or assess engineering controls or other protective measures for exposed employees; and,

(G) To conduct studies to determine the health effects of exposure.

(iii) The request explains in detail why the disclosure of the specific chemical identity is essential and that, in lieu thereof, the disclosure of the following information to the health professional, employee, or designated representative, would not satisfy the purposes described in paragraph 12-(i)(3)(ii) of this regulation:

(A) The properties and effects of the chemical;

(B) Measures for controlling workers' exposure to the chemical;

(C) Methods of monitoring and analyzing worker exposure to the chemical; and,

(D) Methods of diagnosing and treating harmful exposures to the chemical;

(iv) The request includes a description of the procedures to be used to maintain the confidentiality of the disclosed information; and,

(v) The health professional, and the employer or contractor of the services of the health professional (i.e., downstream employer, labor organization, or individual employee), employee, or designated representative, agree in a written confidentiality agreement that the health professional, employee, or designated representative, will not use the trade secret information for any purpose other than the health need(s) asserted and agree not to release the information under any circumstances other than to the Director as provided in paragraph 12-(i)(6) of this regulation except as authorized by the terms of the agreement or by the chemical manufacturer or employer.

(4) The confidentiality agreement authorized by paragraph 12-(i)(3)(iv) of this regulation:

(i) May restrict the use of the information to the health purposes indicated in the written statement of need;

(ii) May provide for appropriate legal remedies in the event of a breach of the agreement, including stipulation of a reasonable pre-estimate of likely

damages; and,

(iii) May not include requirements for the posting of a penalty bond.

(5) Nothing in this standard is meant to preclude the parties from pursuing non-contractual remedies to the extent permitted by law.

(6) If the health professional, employee, or designated representative receiving the trade secret information decides that there is a need to disclose it to the Director, the chemical manufacturer, or employer who provided the information shall be informed by the health professional, employee, or designated representative prior to, or at the same time as, such disclosure.

(7) If the chemical manufacturer or employer denies a written request for disclosure of a specific chemical identity, the denial must;

(i) Be provided to the health professional, employee, or designated representative, within thirty (30) days of the request;

(ii) Be in writing;

(iii) Include evidence to support the claim that the specific chemical identity is a trade secret;

(iv) State the specific reasons why the request is being denied, and,

(v) Explain in detail how alternative information may satisfy the specific medical or occupational health need without revealing the specific chemical identity.

(8) The Director, upon his initiative, or upon request by the health professional, an employee, designated representative, or public employer, shall request any or all of the data substantiating the trade secret claim to determine whether the claim is valid.

(9) The Director shall protect from disclosure all information coming into his possession that is marked as confidential, and shall return all information so marked at the conclusion of his determination. Any information marked confidential pursuant to this regulation shall not be disclosed during any administrative proceeding held pursuant to this regulation. Administrative hearings held pursuant to this regulation shall not be open to the public, but otherwise shall be held in a manner consistent with that provided for in the Administrative Procedures Act, Arkansas Code " 5-15-201 et seq., for hearings in contested cases. The proponent of disclosure shall also have the right to be heard.

(10) No employee of the State of Arkansas shall disclose any information designated as a trade secret other than within the provision of Ark. Code. Ann " 8-7-1001 et seq.

(11) Nothing in this regulation shall be construed as requiring the disclosure under any circumstances of process or percentages of mixture information that is trade secret.

(12) Any administrative order issued by the Director with respect to any trade secret claim is subject to appeal as provided in the Administrative Procedures Act, Arkansas Code " 5-15-201 et seq.

12-(j) WORKPLACE CHEMICAL LISTS TO BE FILED WITH DIRECTOR.

(1) Each public employer shall compile and maintain a workplace chemical list which shall contain the following information for each hazardous chemical normally used, generated or stored in the workplace in an amount equal to or greater than fifty-five (55) gallons or five hundred (500) pounds:

(i) The chemical name or common name used on the MSDS and/or the container label;

(ii) The Chemical Abstracts Service number for such hazardous chemical if such number is included on the MSDS; and

(iii) The work area or workplace in which the hazardous chemical is normally used, generated or stored.

(2) Each public employer shall file the workplace chemical list with the Director no later than October 1, 1991, as required by Ark. Code Ann. ' 8-7-1007(b). The workplace chemical list shall be updated and filed with the Director any time a new hazardous chemical is used, generated or stored in the workplace in an amount equal to or greater than fifty-five (55) gallons or five hundred (500) pounds. A new or updated workplace chemical list shall be filed with the Director no later than July 1 of each subsequent year or the public employer shall notify the Director in writing that there has been no change which would require an addition or deletion to the workplace chemical list previously filed.

(3) The workplace chemical list shall be maintained and filed on a form substantially as provided in Appendix A.

12-(k) ENFORCEMENT

(1) If, after investigation, the Director determines that there has been a violation of the provisions of Ark. Code Ann. " 8-7-1001 et seq. or these regulations, the Director shall issue an order to the official or party responsible for performing the required duties directing that official or party to cease and desist the act or omission constituting the violation. Such an order, when final, shall constitute prima facie evidence of a violation in any enforcement action as provided by Ark. Code Ann. ' 8-7-10149(a).

(2) The cease and desist order shall be final unless within twenty (20) days after receipt of notice thereof by certified mail, the person, official or party charged with the violation notifies the Director in writing that he contests such order. In the event the order is contested, a final determination shall be made after notice and hearing pursuant to the Administrative Procedures Act, Ark. Code Ann. " 25-15-201 et seq.

(3) If the Director determines that a public employer has violated regulation 12-(h) or Ark. Code Ann. ' 8-7-1008 relating to employee information and training, and within sixty (60) days of issuance of a cease and desist order the public employer has not remedied the violation, the Director may conduct a program or programs to remedy the violation and require such public employer to reimburse the Director for the cost of doing so. The date of issuance of a cease and desist order shall be the date such order becomes final.

(4) The issuance of a cease and desist order by the Director shall not be a prerequisite for adverse personnel action by the public employer against any supervisory personnel responsible for the violation.

(5) In interpreting these regulations, the Director may rely on Interpretive Bulletins issued by the Occupational Safety and Health Administration, U.S. Department of

Labor involving OSHA's Hazard Communication Standard. 29 CFR ' 1910.1200.

12-(I) EFFECTIVE DATE

The effective date of these regulations shall be December 1, 1991.

**APPENDIX A TO SAFETY CODE NO. 12
ARKANSAS WORKPLACE CHEMICAL LIST**

NAME OF EMPLOYER: _____

CONTACT PERSON: _____ **PHONE:** _____

WORKPLACE LOCATION: _____

MAILING ADDRESS: _____

CITY AND ZIP CODE: _____

List below each hazardous chemical used, generated, or stored in the workplace in an amount equal to or greater than fifty-five (55) gallons or five hundred (500) pounds. Fill in the appropriate information in each of the listed columns. If you have any questions contact the Arkansas Department of Labor at 682-4526 or 682-4522.

Chemical Name or Common Name Used on the MSDS or the Container Label	CAS Number (if on the MSDS)	Location of the Chemical in the Workplace	Amount Present
---	--	--	---------------------------

1. _____

2. _____

3. _____

4.

5.

6.

7.

8.

9.

10.

(If more space is needed use an additional form.)

Return the completed list to: Kevin Looney
Arkansas Department of Labor
Public Employee Right To Know
10421 West Markham
Little Rock, Arkansas 72205

APPENDIX B TO SAFETY CODE NO. 12

DEFINITIONS (Mandatory)

Although safety hazards related to the physical characteristics of a chemical can be objectively defined in terms of testing requirements (e.g. flammability), health hazard definitions are less precise and more subjective. Health hazards may cause measurable changes in the body-such as decreased pulmonary function. These changes are generally indicated by the occurrence of signs and symptoms in the exposed employees-such as shortness of breath, a non-measurable, subjective feeling. Employees exposed to such hazards must be apprised of both the change in body function and the signs and symptoms that may occur to signal that change.

The determination of occupational health hazards is complicated by the fact that many of the effects or signs and symptoms occur commonly in non-occupationally exposed populations, so that effects of exposure are difficult to separate from normally occurring illnesses. Occasionally, a substance causes an effect that is rarely seen in the population

at large, such as angiosarcomas caused by vinyl chloride exposure, thus making it easier to ascertain that the occupational exposure was the primary causative factor. More often, however, the effects are common, such as lung cancer. The situation is further complicated by the fact that most chemicals have not been adequately tested to determine their health hazard potential, and data do not exist to substantiate these effects.

There have been many attempts to categorize effects and to define them in various ways. Generally, the terms "acute" and "chronic" are used to delineate between effects on the basis of severity or duration. "Acute" effects usually occur rapidly as a result of short-term exposures, and are of short duration. "Chronic" effects generally occur as a result of long-term exposure, and are of long duration.

The acute effects referred to most frequently are those defined by the American National Standards Institute (ANSI) standard for Precautionary Labeling of Hazardous Industrial Chemicals (Z129.1-1982) - irritation, corrosivity, sensitization and lethal dose. Although these are important health effects, they do not adequately cover the considerable range of acute effects which may occur as a result of occupational exposure, such as, for example, narcosis.

Similarly, the term chronic effect is often used to cover only carcinogenicity, teratogenicity, and mutagenicity. These effects are obviously a concern in the workplace, but again, do not adequately cover the area of chronic effects, excluding, for example, blood dyscrasias (such as anemia), chronic bronchitis and liver atrophy.

The goal of defining precisely, in measurable terms, every possible health effect that may occur in the workplace as a result of chemical exposures cannot realistically be accomplished. This does not negate the need for employees to be informed of such effects and protected from them. Appendix C, which is also mandatory, outlines the principles and procedures of hazardous assessment.

For purposes of this section, any chemicals which meet any of the following definitions, as determined by the criteria set forth in Appendix C are health hazards:

(1) **Carcinogen:** A chemical is considered to be a carcinogen if:

(a) It has been evaluated by the International Agency for Research on Cancer (IARC), and found to be a carcinogen or potential carcinogen; or

(b) It is listed as a carcinogen or potential carcinogen in the Annual Report on Carcinogens published by the National Toxicology Program (NTP) (latest edition); or,

(c) It is regulated by OSHA as a carcinogen.

(2) **Corrosive:** A chemical that causes visible destruction of, or irreversible alterations in, living tissue by chemical action at the site of contact. For example, a chemical is considered to be corrosive if, when tested on the intact skin of albino rabbits by the method described by the U.S. Department of Transportation in Appendix A to 49 CFR Part 173, it destroys or changes irreversibly the structure of the tissue at the site of contact following an exposure period of four hours. This term shall not refer to action on inanimate surfaces.

(3) **Highly toxic:** A chemical falling within any of the following categories:

(a) A chemical that has a median lethal dose of 50 milligrams or less per kilogram of body weight when administered orally to albino rats weighing between 200 and 300 grams each.

(b) A chemical that has a median lethal dose of 200 milligrams or less per kilogram of body weight when administered by continuous contact for 24 hours (or less if death occurs within 24 hours) with the bare skin of albino rabbits weighing between two and three kilograms each.

(c) A chemical that has a median lethal concentration in air of 200 parts per million by volume or less of gas or vapor, or 2 milligrams per liter or less of mist, fume, or dust, when administered by continuous inhalation for one hour (or less if death occurs within one hour) to albino rats weighing between 200 and 300 grams each.

(4) **Irritant:** A chemical, which is not corrosive, but which causes a reversible inflammatory effect on living tissue by chemical action at the site of contact. A chemical is a skin irritant if, when tested on the intact skin of albino rabbits by the methods of 16 CFR 1500.41 for four hours exposure or by other appropriate techniques, it results in an empirical score of five or more. A chemical is an eye irritant, if so determined under the procedure listed in 16 CFR 1500.42 or other appropriate techniques.

(5) **Sensitizer.** A chemical that causes a substantial proportion of exposed people or animals to develop an allergic reaction in normal tissue after repeated exposure to the chemical.

(6) **Toxic.** A chemical falling within any of the following categories:

(a) A chemical that has a median lethal dose of more than 50 milligrams per kilogram but not more than 500 milligrams per kilogram of body weight when administered orally to albino rats weighing between 200 and 300 grams each.

(b) A chemical that has a median lethal dose of more than 200 milligrams per kilogram but not more than 1,000 milligrams per kilogram of body weight when administered by continuous contact for 24 hours (or less if death occurs within 24 hours) with the bare skin of albino rabbits weighing between two and three kilograms each.

(c) A chemical that has a median lethal concentration in air of more than 200 parts per million but not more than 2,000 parts per million by volume of gas or vapor, or more than two milligrams per liter but not more than 20 milligrams per liter of mist, fume, or dust, when administered by continuous inhalation for one hour (or less if death occurs within one hour) to albino rats weighing between 200 and 300 grams each.

(7) **Target organ effects.** The following is a target organ categorization of effects which may occur, including examples of signs and symptoms and chemicals which have been found to cause such effects. These examples are presented to illustrate the range and diversity of effects and hazards found in the workplace, and the broad scope employers must consider in this area, but are not intended to be all-inclusive.

(a) **Hepatotoxins:** Chemicals which produce liver damage
Signs & Symptoms: Jaundice; liver enlargement
Chemicals: Carbon tetrachloride; nitrosamines

(b) **Nephrotoxins:** Chemicals which produce kidney damage
Signs & Symptoms: Edema; proteinuria
Chemicals: Halogenated hydrocarbons; uranium

(c) **Neurotoxins:** Chemicals which produce their primary toxic effects on the nervous system
Signs & Symptoms: Narcosis; behavioral changes; decrease in motor functions

Chemicals: Mercury; carbon disulfide

- (d) Agents which act on the blood or hematopoietic system: Decrease hemoglobin function; deprive the body tissues of oxygen
Signs & Symptoms: Cyanosis; loss of consciousness
Chemicals: Carbon monoxide; cyanides**
- damage the**
- (e) Agents which damage the lung: Chemicals which irritate or pulmonary tissue
Signs & Symptoms: Cough, tightness in chest, shortness of breath
Chemicals: Silica, asbestos**
- capabilities**
- (f) Reproductive toxins: Chemicals which affect the reproductive including chromosomal damage (mutations) and effects on (teratogenesis)
Signs & Symptoms: Birth defects; sterility
Chemicals: Lead; DBCP**
- fetuses**
- (g) Cutaneous hazards: Chemicals which affect the dermal layer of**
- the body**
- Signs & Symptoms: Defatting of the skin; rashes; irritation
Chemicals: Ketones; chlorinated compounds**
- (h) Eye hazards: Chemicals which affect the eye or visual capacity
Signs & Symptoms: Conjunctivitis; Corneal damage
Chemicals: Organic solvents; acids**

APPENDIX C TO SAFETY CODE NO. 12

DETERMINATION (MANDATORY)

The quality of a hazard communication program is largely dependent upon the adequacy and accuracy of the hazard determination. The hazard determination requirement of this standard is performance-oriented. Chemical manufacturers and employers evaluating chemicals are not required to follow any specific methods for determining hazards, but they must be able to demonstrate that they have adequately ascertained the hazards of the chemicals produced or imported in accordance with the criteria set forth in this Appendix.

Hazard evaluation is a process which relies heavily on the professional judgment of the evaluator, particularly in the area of chronic hazards. The performance-orientation of the hazard determination does not diminish the duty of the chemical manufacturer or employer to conduct a thorough evaluation, examining all relevant data and producing a scientifically defensible evaluation. For purposes of this standard, the following criteria shall be used in making hazard determinations that meet the requirements of this standard.

(1) **Carcinogenicity:** As described in paragraph 12-(d)(4) and Appendix B of these regulations, a determination by the National Toxicology Program, the International Agency for Research on Cancer, or OSHA that a chemical is a carcinogen or potential carcinogen will be considered conclusive evidence for purposes of these regulations.

(2) **Human data:** Where available, epidemiological studies and case reports of adverse health effects shall be considered in the evaluation.

(3) **Animal data:** Human evidence of health effects in exposed populations is generally not available for the majority of chemicals produced or used in the workplace. Therefore, the available results of toxicological testing in animal populations shall be used to predict the health effects that may be experienced by exposed workers. In particular, the definitions of certain acute hazards refer to specific animal testing results (See Appendix B).

(4) **Adequacy and reporting of data.** The results of any studies which are designed and conducted according to established scientific principles, and which report statistically significant conclusions regarding the health effects of a chemical, shall be a sufficient basis for a hazard determination and reported on any material safety data sheet. The chemical manufacturer or employer may also report the results of other scientifically valid studies which tend to refute the findings of hazard.

APPENDIX D TO SAFETY CODE NO. 12

SOURCES (ADVISORY)

The following is a list of available data sources which the chemical manufacturer, distributor, or employer may wish to consult to evaluate the hazards of chemicals they produce or import:

- Any information in their own company files, such as toxicity testing results or illness experience of company employees.

- Any information obtained from the supplier of the chemical, such as material safety data sheets or product safety bulletins.

- Any pertinent information obtained from the following source list (latest editions should be used):

Condensed Chemical Dictionary

Van Nostrand Reinhold Co., 135 West 50th Street, New York, NY 10020

The Merck Index: An Encyclopedia of Chemicals and Drugs

Merck and Company, Inc., 126 E. Lincoln Avenue, Rahway, NJ 07065

IARC Monographs on the Evaluation of the Carcinogenic Risk of Chemicals to Man

Geneva: World Health Organization. International Agency for Research on Cancer, 1972-Present. (Multivolume work). Summaries are available in supplement volumes. 49 Sheridan Street, Albany, NY 12210

Industrial Hygiene and Toxicology, by F.A. Patty

John Wiley & Sons, Inc., New York, NY (Multivolume work)

Clinical Toxicology of Commercial Products

Gleason, Gosselin, and Hodge

Casarett and Doull's Toxicology: The Basic Science of Poisons

Doull, Klaassen, and Amdur, Macmillan Publishing Co., Inc., New York, NY

Industrial Toxicology, by Alice Hamilton and Harriet L. Hardy

Publishing Sciences Group, Inc., Acton, MA.

Toxicology of the Eye, by W. Morton Grant

Charles C. Thomas, 301- 327 East Lawrence Avenue, Springfield, IL.

Recognition of Health Hazards in Industry

William A. Burgess, John Wiley and Sons, 605 Third Avenue, New York, NY 10158.

Chemical Hazards of the Workplace

Nick H. Proctor and James P. Hughes, J.P. Lipincott Company, 6 Winchester Terrace, New York, NY 10022.

Handbook of Chemistry and Physics

Chemical Rubber Company, 18901 Cranwood Parkway, Cleveland, OH 44128

Threshold Limit Values for Chemical Substances and Physical Agents in the Work Environment and Biological Exposure Indices with Intended Changes

American Conference of Governmental Industrial Hygienists (ACGIH). 6500 Glenway Avenue, Bldg, D-5, Cincinnati, OH 45211.

Information on the physical hazards of chemicals may be found in publications of the National Fire Protection Association, Boston, MA.

NOTE - The following documents may be purchased from the Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402.

Occupational Health Guidelines

NIOSH/OSHA (NIOSH Pub. No. 81-123)

NIOSH Pocket Guide to Chemical Hazards

NIOSH Pub. No. 85-114

Registry of Toxic Effects of Chemical Substances

NIOSH Pub. No. 80-192

Miscellaneous Documents published by the National Institute for Occupational Safety and Health:

Criteria Documents.

Special Hazard Reviews.

Occupational Hazard Assessments.

Current Intelligence Bulletins.

OSHA's General Industry Standards (29 CFR Part 1910)

NTP Annual Report on Carcinogens and Summary of the Annual Report on Carcinogens.

National Technical Information Service (NTIS), 5285 Port Royal Road, Springfield, VA 22161; (703) 487-4650.

BIBLIOGRAPHIC DATA BASES

Service Provider	File Name
<p>Bibliographic Retrieval Services (BRS), 1200 Route 7 Latham, NY 12110</p>	<p>Biosis Previews CA Search Medlars NTIS Hazardline American Chemical Society Journal Excerpta Medica IRCS Medical Science Journal Pre-Med Int'l Pharmaceutical Abstracts Paper Chem</p>
<p>Lockheed-DIALOG Information Services, Inc. 3460 Hillview Avenue Palo Alto, CA 94304</p>	<p>Biosis Prev. Files CA Search Files CAB Abstracts Chemical Exposure Chemname Chemsis Files Chemzero Embase Files Environmental Bibliographies Enviroline Federal Research in Progress IRL Life Science Collection NTIS Occupational Safety and Health (NISOH) Paper Chem</p>
<p>SDC-Orbit, SDC Information Service 2500 Colorado Avenue Santa Monica, CA 90406 National Library of Medicine Department of Health and Human Services Public Health Service National Institutes of Health Bethesda, MD 20209</p>	<p>CAS Files Chemdex, 2,3 NTIS Hazardous Substances Data Bank (NSDB) Medline Files Toxline Files Cancerlit RTECS Chemline</p>
<p>Pergamon International Information Corp. 1340 Old Chain Bridge Rd., McLean, VA 22101 Questel, Inc. 1625 Eye Street, NW., Suite 818 Washington, DC 20006 Chemical Information System ICI (ICIS) Bureau of National Affairs 1133 15th Street, NW., Suite 300 Washington, DC 20005</p>	<p>Laboratory Hazard Bulletin</p> <p>CIS/ILO Cancernet</p> <p>Structure and Nomenclature Search System (SANSS) Acute Toxicity (RTECS) Clinical Toxicology of Commercial Products Oil and Hazardous Materials Technical</p>
<p>Occupational Health Services 400 Plaza Drive Secaucus, NJ 07094</p>	<p>Assistance Data System CCRIS CESARS MSDS Hazardline</p>

APPENDIX E TO SAFETY CODE NO. 12 DEFINITION OF "TRADE SECRET" (MANDATORY)

The following is a reprint of the Restatement of Torts section 757, comment b (1939):

b. **Definition of trade secret.** A trade secret may consist of any formula, pattern, device or compilation of information which is used in one's business, and which gives him an opportunity to obtain an advantage over competitors who do not know or use it. It may be a formula for a chemical compound, a process of manufacturing, treating or preserving materials, a pattern for a machine or other device, or a list of customers. It differs from other secret information in a business (see ' 759 of the Restatement of Torts which is not included in this Appendix) in that it is not simply information as to single or ephemeral events in the conduct of the business, as, for example, the amount or other terms of a secret bid for a contract or the salary of certain employees, or the security investments made or contemplated, or the date fixed for the announcement of a new policy or for bringing out a new model or the like. A trade secret is a process or device for continuous use in the operations of the business. Generally it relates to the production of goods, as, for example, a machine or formula for the production of an article. It may, however, relate to the sale of goods or to other operations in the business, such as a code for determining discounts, rebates or other concessions in a price list or catalogue, or a list of specialized customers, or a method of bookkeeping or other office management.

Secrecy. The subject matter of a trade secret must be secret. Matters of public knowledge or of general knowledge in an industry cannot be appropriated by one as his secret. Matters which are completely disclosed by the goods which one markets cannot be his secret. Substantially, a trade secret is known only in the particular business in which it is used. It is not requisite that only the proprietor of the business know it. He may, without losing his protection, communicate it to employees involved in its use. He may likewise communicate it to others pledged to secrecy. Others may also know of it independently, as for example, when they have discovered the process or formula by independent invention and are keeping it secret. Nevertheless, a substantial element of secrecy must exist, so that, except by the use of improper means, there would be difficulty in acquiring the information. An exact definition of a trade secret is not possible. Some factors to be considered in determining whether given information is one's trade secret are: (1) The extent to which the information is known outside of his business; (2) the extent to which it is known by employees and others involved in his business; (3) the extent of measures taken by him to guard the secrecy of the information; (4) the value of the information to him and his competitors; (5) the amount of effort or money expended by him in developing the information; (6) the ease or difficulty with which the information could be properly acquired or duplicated by others.

Novelty and prior art. A trade secret may be a device or process which is patentable: but it need not be that. It may be a device or process which is clearly anticipated in the prior art or one which is merely a mechanical improvement that a good mechanic can make. Novelty and invention are not requisite for a trade secret as they are for patentability. These requirements are essential to patentability because a patent protects against unlicensed use of the patented device or process even by one who discovers it properly through independent research. The patent monopoly is a reward to the inventor. But such is not the case with a trade secret. Its protection is not based on a policy of rewarding or otherwise encouraging the development of secret processes or devices. The protection is merely against breach of faith and reprehensible means of learning another's secret. For this limited protection it is not appropriate to require also the kind of novelty and invention which is requisite of patentability. The nature of the secret is, however, an important factor in determining the kind of relief that is appropriate

against one who is subject to liability under the rule stated in this section. Thus, if the secret consists of a device or process which is a novel invention, one who acquires the secret wrongfully is ordinarily enjoined from further use of it and is required to account for the profits derived from his past use. If, on the other hand, the secret consists of mechanical improvements that a good mechanic can make without resort to the secret, the wrongdoer's liability may be limited to damages, and an injunction against future use of the improvements made with the aid of the secret may be inappropriate.