



INTERNAL CORRESPONDENCE

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CHEMICALS AND PLASTICS

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To (Name) OH Team
C&P Industrial Hygienists
Exposure Guidelines Committee
(See Distribution List)

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Originating Dept SHARE - Occupational Health
Subject Industrial Hygiene Manual

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G. F. HURLEY

The enclosed information is forwarded to you for your interest and information.

Robert E. Peele

Robert E. Peele

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Attachment

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INDUSTRIAL HYGIENE MANUAL

CHAPTER I INDUSTRIAL HYGIENE AND OCCUPATIONAL HEALTH

A. Introduction

This chapter sets forth guidelines for the handling of health inspections and citations. Health hazards discussed in this chapter are environmental conditions present in the workplace which may cause illness or injury to the worker.

1. Scope

a. This chapter contains general instructions and policies on field compliance operations, with special emphasis on the assessment of health hazards found in the workplace. It supplements instructions and policies discussed in other chapters of the Field Operations Manual (FOM). It provides additional technical and management guidance for field health compliance operations. This chapter will be supplemented by a detailed Industrial Hygiene Manual and technological methodology for assessing workplace health hazards on a substance by substance basis.

b. Health compliance operations involve several technical and professional disciplines (i.e., Industrial Hygienists, Safety Engineers, Safety Specialist). Therefore the processing of all health inspections and citations requires close coordination between industrial hygienists, engineering specialists and local, regional and National staff. In addition, nonagency assistance either from outside consultants or from other agencies such as NIOSH may be required.

c. Within OSHA, a Compliance Safety and Health Officer (CSHO) with primary health expertise is an industrial hygienist. In this chapter, the designation of "I.H." refers to an industrial hygienist and "CSHO" refers to a safety specialist.

2. Responsibilities

a. The National Office shall coordinate the technical aspects of health programming among the regions through the Technical and Analytical Assistance Unit.

b. A Regional Industrial Hygienist will be designated in each Regional Office who will be responsible to the Regional Administrator through the Assistant Regional Administrator for Technical Support for coordinating the technical aspects of the health program within the region. Consultation and technical assistance on health related activities will be provided by the Regional I.H. and made available to the Regional staff, the Area Offices and the Regional Solicitor's staff. This responsibility shall include, but is not limited to, providing guidelines for the determination of noncompliance, case file preparation, contested case preparation and training

in the use of technical equipment in accordance with criteria provided by the National Office.

c. As stated in Chapter III of the FOM, the Area Director shall administer the field compliance program within the designated geographic area. Each Area Director shall designate a Senior Industrial Hygienist who is responsible for the technical aspects of the health compliance program and for the determination and implementation of health inspection priorities on an area-wide basis.

d. Some inspections require a team effort involving more than one specialty. In such cases, the Area Director shall designate the team leader to coordinate such compliance efforts. Such assignments shall be made with special attention to the nature of the total inspection and personnel qualification. The Senior I.H. shall provide guidance in health inspection procedures.

e. The I.H. shall conduct health inspections in industries in accordance with priorities established by the Area Director. A health inspection can be either a complete survey of a particular workplace for all health hazards or a special survey such as an accident investigation.

f. The industrial hygiene trainee is an industrial hygienist who does not have the authority independently to inspect a workplace and recommend citations until his training is completed. The trainee can accompany a compliance officer to a workplace and assist in an inspection. Industrial hygiene samples collected by a trainee are valid if overseen by an I.H.

B. Inspection Priorities

1. Generally, OSHA's priority system for conducting inspections for health hazards follows the programming set forth in Chapter IV. In addition, periodic health alerts and special programs generated by the National Office will receive priority as assigned by the National Office. The investigation of health complaints will follow the procedures outlined in Chapter VI of the FOM. Health complaints will be investigated by an I.H. or a CSHO who has received training to recognize health hazards and evaluate the conditions. Complaints involving the appropriateness of unusual medical testing or questionable results of medical findings shall be discussed with the Regional I.H. and the Technical and Analytical Assistance Unit.

2. Regional Scheduled Inspection/Referral Inspections

a. The Senior I.H. and the Area Director shall prepare a priority inspection system for approval by the Regional

Office. The Regional I.H. shall consult with the Technical and Analytical Assistance Unit and the Regional Program Director for NIOSH in the development of regionally scheduled inspections.

b. The compliance activity must be determined on the Area Office level due to the unequal distribution of industrial health hazards from area to area. General considerations for scheduled inspection activity are as follows:

- Referrals from CSHO review.
- Industry inventory (paragraph C. of this chapter contains details).
- Knowledge from past inspection activity.
- New industries or operations.
- Number and type of industries.
- Estimated number of workers at risk.
- Severity of hazard (i.e., all carcinogens, high noise levels, accumulative toxicants).
- Duration and extent of exposure.
- Status of promulgated standards.
- Injury and illness statistics.

3. The Regional Administrator, with the assistance of the Regional I.H. shall annually assess the scheduled inspection programs in the region. A written report shall be submitted by January 30 of each year to the Assistant Secretary or his designee.

C. Workplace Inventory

1. Each Area Office shall establish an inventory of workplaces within the area. The purpose of the inventory is to collect information for scheduling and preparing inspections and for general use. The inventory shall be maintained by company name and shall include, as a minimum, the following:

- Company name.
- Company location.
- Company telephone number.
- SIC codes and subcodes.
- Type of industry.
- Size of workplace.
- Estimated number of workers.
- Manufactured products and by products.
- Process information.
- Beginning materials and process intermediates.
- List of potential health hazards and the location of likely occurrence.
- Inspection records.
- Status of compliance with health standards.
- Variances.
- Injury and illness statistics.
- Personal protective equipment utilized.
- Extent of control measures utilized.

2. The workplace inventory information can be obtained through research literature, trade associations, NIOSH evaluations, State Directory of Industries, Regional Office data, National Office data, when necessary, and CSHO inspections.

3. The inventory shall be updated whenever new information is available to the Area Office and during January of each year.

D. Health Hazards Uncovered During CSHO Safety Inspection

1. After training in recognition and evaluation of health hazards the CSHO shall collect health hazard information for referral to the I.H. Priorities of inspection by the I.H. based on referrals are to be incorporated into the regular inspection schedule.

2. During the safety inspection, the CSHO shall carry a sound level meter and a detector tube kit. The detector tubes should be specific for the gases anticipated at the worksite based on the industry inventory. Spot samples shall be collected when a health hazard is suspected.

a. A health hazard can be suspected when any of the following occur:

- (1) Eye irritation is felt when entering the work area.
- (2) A strong odor is noticed when entering the work area.
- (3) Visible dust clouds are observed coming from the operation into the workplace.
- (4) Visible clouds are observed coming from poorly maintained ventilation systems such as holes in ducts.
- (5) The local ventilation system is not capturing all of the contaminants, which are therefore being released into the workplace.

(6) Visible fumes are released into the workplace. For example, in welding operations, local exhaust is not used by the welder.

(7) The noise levels require raising the voice to be heard.

(8) Chemicals are mishandled as evidenced by chemical spills and careless handling of highly toxic materials.

(9) Substances which are hazardous under normal conditions of control and handling such as carcinogens are located at the worksite.

(10) Worker's comments and symptoms indicate exposure to contaminant.

b. During a routine safety inspection, if the CSHO observes a potential health hazard for which he has the training to determine full-shift time weighted average exposures, the CSHO must return to the plant and collect the appropriate samples if he is unable to do so during the safety inspection.

c. When a health hazard is suspected, during the course of safety inspection the CSHO shall make a written notation consisting of the following, as applicable:

- Name of plant.
- Suspected health hazard(s).
- Description of operation.
- Description of location of operation in the plant.
- Reason for suspecting the health hazard.
- Worker comments regarding the health hazards.
- Number of employees affected.
- Results of spot samples.
- Date and time.
- Signature of CSHO and CSHO number.

d. The CSHO shall collect samples and make referrals only when personal protective equipment is not worn or utilized.

3. The Area Director shall carefully screen all referrals to determine their appropriateness and inspect

tion priority. The Senior I.H. shall make recommendations to the Area Director concerning CSHO referrals. Where a referral reveals a potential imminent danger or a potential serious violation, immediate inspection by an I.H. is necessary. For less severe hazards, referrals may be delayed and scheduled as general or regular health inspections by the Area Director but no later than 60 days after the CSHO safety inspection.

4. The Regional Administrator with the assistance of the Regional I.H. shall annually assess the referral practices in the region. A written report shall be submitted by January 30 of each year to the Assistant Secretary or his designee.

E. The Health Inspection

An industrial hygiene inspection of an establishment is often complex and time consuming. The following are the essential elements: preinspection planning, opening conference, walkthrough inspection, collecting samples and closing conference.

1. *Preinspection Planning.* Preinspection preparation is necessary to expedite the process of an industrial hygiene inspection in the wide varieties of industries and associated health hazards.

a. The I.H. shall carefully review all information contained in the workplace inventory for a particular industry or plant. The I.H. shall be familiar with the general process information and size of the industry or plant.

b. The I.H. shall review appropriate standards and sampling methods.

c. If the planned inspection is a referral visit to a workplace that has been previously inspected by a CSHO, the I.H. shall review all information contained in the previous inspection data and reports.

d. Based on his experience and the workplace inventory, the I.H. may be able to anticipate the field instruments necessary for the inspection. If so, the I.H. shall prepare instruments and equipment according to the standard methods of sampling and calibration.

2. *Opening Conference.* Upon entering the workplace, the industrial hygienist shall conduct the opening conference procedures found in Chapter V of the FOM as follows:

a. The I.H. shall obtain complete process flow charts and plant layouts from the plant management at the beginning of the inspection. If the plant layout chart is not available, the I.H. shall sketch a plant layout, identifying the operations, distribution of equipment, including engineering controls, and approximate dimensions of the plant.

b. A brief examination shall be made of all required records of the workplace. Some valuable insights can be determined from such records (i.e., nature of injuries or illnesses, dermatitis, respirator usage, monitoring data, ventilation tests, process flow sheets, and a log of hazardous materials received) which will assure a more effective inspection. Recordkeeping requirements shall be determined at the closing conference after the inspection has been made or after sampling results have been analyzed.

3. *Walkthrough Inspections.* A walkthrough is required for all health inspections, regardless of whether the plant was previously inspected. (See Chapter V, D. of the FOM.)

a. The main purpose of a walkthrough inspection is to identify potential health hazards in the workplace. The identification of potential health hazards requires that during the walkthrough the I.H. becomes familiar with plant processes, collects information of physical and chemical agents, observes workers' activities and surveys existing engineering controls. The information is needed to prepare for the field measurement phase of the inspection. As the I.H. proceeds with the walkthrough inspection, he or she shall identify and record on the plant layout or sketch, the potential sources of health hazards, locations of the workers, types of engineering controls, and the usage of protective devices including types of respirators.

b. Data collection of physical and chemical agents.

(1) As the I.H. proceeds with the walkthrough inspection, he or she shall obtain all information concerning substances used and produced, and intermediate substances, if any. Estimated volumes of these substances present in the plant and a complete storeroom inventory shall be obtained. In addition a request shall be made for a list of raw materials received at the loading dock.

(2) The I.H. shall obtain all information concerning potential physical agents, such as noise and heat, present in the plant. It is also essential that the sources of these agents be identified and recorded.

(3) Utilizing visual and olfactory means and instrumentation, the I.H. shall estimate the diffusion of these agents within the plant. All openings to the external environment shall be identified and recorded.

c. Observation of worker activities.

(1) The I.H. shall observe worker activities throughout the plant, particularly concentrating on potential health hazard areas. Estimated numbers of workers at each such area shall be recorded on the plant layout or sketch.

(2) Employee interviews are encouraged during this phase of the inspection. The I.H. shall observe and record the general mobility of the workers and indicate whether they are engaged in stationary or transient activities.

d. Survey of existing engineering controls.

(1) The I.H. shall sketch, identify and record the layout of existing engineering controls on the plant layout or sketch. Ventilation measurements shall be made and recorded on the plant sketch at strategic locations in the duct system.

(2) The I.H. shall request information from the plant manager concerning a preventive maintenance program for engineering controls.

e. The I.H. must keep alert for all imminent dangers during the walkthrough inspection and take action as described in Chapter IX of the FOM.

f. In a very small plant, sampling for obvious health hazards can be initiated soon after the opening conference and details of the walkthrough can be accomplished while collecting samples.

g. Photographs shall be used to document the survey and the plant sketch, and to record all employees who are not wearing personal protective equipment.

4. *Collecting Samples.* After the initial walkthrough inspection, the I.H. shall prepare a sampling schedule utilizing information collected during the walkthrough survey. The sampling schedule shall identify potential chemical and physical hazards, number of samples to be taken and the locations of potential health hazards.

a. Representative jobs must be selected for sampling and personal sampling devices prepared accordingly. Occupations with the highest expected exposure should be monitored.

b. It is suggested that the sampling program should be planned, if possible, to follow the particular industrial process from its beginning to the final product. If the processes are mixed throughout the plant, such as in a machine shop, the sampling program should follow each operation (degreasing, welding, machinery, etc.)

c. All sampling equipment shall be checked and calibrated according to standard calibration methods. A record of each calibration must be included in the inspection report. The following are requirements for the sampling procedure:

(1) All sampling, calibration and analysis shall be performed according to standard methods described in the Industrial Hygiene Manual.

(2) The levels of both physical and chemical agents in the work environment shall be measured as they relate to the workers. Unless otherwise specified in a standard, the measurements shall represent the personal exposure of the employee. The I.H. shall take measurements in close proximity to the employee (i.e., breathing zone for air contaminants, hearing zone for noise, etc.).

(3) Airborne concentrations of materials in Tables Z-1, Z-2, and Z-3 of 29 CFR 1910.1000, air contaminants, and other promulgated standards such as noise and asbestos, must be measured on the basis of 8-hour time weighted averages (except for ceiling limits).

(4) The I.H. should collect samples that represent a full-shift exposure when the determination of time weighted average concentration or action level is made, unless a ceiling level applies. A minimum of 7 hours of sampling is required to evaluate a full 8-hour shift. A single sample or a series of samples that represent a 7-hour sampling can be utilized.

(5) A minimum of one full-shift, time weighted average concentration shall be determined for each employee selected for the inspection. When the results indicate that the values are at or near the time weighted average required by the standard, additional samples shall be collected. In order to determine the extent of exposure in a potentially hazardous area, the I.H. may collect several dozen samples. He should remain at the workplace until all of the necessary samples are obtained. When several spot samples are collected to determine an employee exposure, the time weighted average shall be used to determine the full-shift exposure.

d. For the evaluation of ceiling limit, a short sampling time is necessary. Instantaneous sampling should be used to determine ceiling limits so long as multiple samplings can be made in a period of time specified by

the standard. Where time periods for exposure to ceiling limits are not specified in the standard, 15 minutes should generally be used to determine peak limits.

e. Records and notes shall be kept as described in the standard methods for sampling, calibrations and analysis found in the Industrial Hygiene Manual.

5. *Closing Conference.* The general procedure described in Chapter V of the FOM shall be followed. An immediate explanation of available inspection results shall be given along with general guidelines in controlling the hazards.

a. Since the I.H. may not have the results of environmental measurements at the end of the inspection or during the closing conference, an ultimate or second closing conference may be held by telephone, in person or by letter. At that time, if the results indicate noncompliance, discussions shall be held on alleged violations, abatement procedures, and interim methods of control. Employees or their representatives shall be informed of the inspection results at that time.

b. At the closing conference, written information on the employer's occupational health program is gathered for evaluation. The evaluation can be made onsite or if assistance of the Senior Industrial Hygienist or Area Director is required, in the OSHA office.

c. Information on the following aspects of the employer's occupational health program must be gathered during the inspection for evaluation. They are discussed in the closing conference and are later considered in relation to requirements of the standards and as evidence of good faith in the proposal of penalties.

(1) Monitoring program. Detailed information concerning the industrial hygiene program shall be obtained, which includes qualified personnel, necessary sampling and calibration equipment, ventilation, measurement equipment and laboratory services.

(2) Medical program. Detailed information concerning the employer's medical program shall be obtained. The I.H. shall investigate whether the employer provides his employees with preemployment and regular medical examinations. The medical examination protocol shall be obtained to determine the extent of the medical examination.

(3) Education and training program. Detailed information concerning the employee education and training program shall be obtained. A special effort shall be made to evaluate the employee's knowledge about the hazards which exist in the plant; the extent to which the program covers precautions to be taken, emergency procedures and personal protective equipment; and the extent of employee participation in the education and training program.

(4) Recordkeeping program. The I.H. shall investigate the employer's recordkeeping program, including types and duration of recordkeeping. It is also required that the I.H. determine the accessibility of these records to the employees.

(5) Compliance program.

(a) Engineering controls. The I.H. shall determine the employer's implementation of engineering controls, including work practices with appropriate equipment and preventive maintenance. The I.H. should evaluate a

specific engineering control in the context of the plant.

(b) Work-practice and administrative controls. These control techniques include isolation of operations, rotation of employees, sanitation and housekeeping practices. A detailed description of such controls shall be obtained. It is essential that work-practice controls and the education program be implemented simultaneously. The overall effect of such practices and programs shall be evaluated, emphasizing the employees' knowledge of their exposures.

(c) Protective devices. The I.H. shall determine whether an effective protective device program exists in the plant. A detailed investigation of the personal protection program shall be made to determine compliance with 29 CFR 1910.134. If there is a written program, it should be obtained and evaluated. Special emphasis shall be given to the determination of sanitary condition of the equipment, of maintenance of the equipment and of the training program on the selection and usage of protective devices. The I.H. shall also obtain information concerning any medical examinations which are required prior to the issuance of a respirator.

(6) Regulated areas. The I.H. shall investigate procedures for regulated areas, as required by certain standards, as follows:

(a) Regulated areas are clearly identified and known to all employees.

(b) Sampling has been utilized to determine designation of regulated areas.

(c) The regulated area designations are maintained according to the prescribed criteria of the standard.

(d) Daily rosters are maintained of authorized personnel entering and leaving the regulated area. Summaries of such rosters are acceptable.

(e) Regulated areas are established based on employee exposures in excess of prescribed levels.

(7) Emergency procedures. Some standards provide for specific emergency procedures to be developed in handling certain hazardous substances. The I.H. and CSHO shall evaluate the emergency program for the following:

(a) Inclusion of all potential emergency conditions in the written plan.

(b) Explanation of such emergency conditions to employees.

(c) Training scheme for the protection of affected employees.

(d) Delegation of authority for the implementation of the operational plan for emergency situations.

F. Evaluation of Sampling Data

The I.H. and Area Director must use professional judgment in the evaluation of the data and conditions to confirm the sampling results. The following are guidelines to be weighed.

1. The I.H.'s past experiences must indicate that the sampling results are reasonable.

2. The sampling results in the plant must correlate with each other. For example, the occupation that is expected to be dusty should have higher dust concentrations measured than those expected to be less dusty.

3. The sampling results should reasonably correlate with previous measurements made by OSHA, the company and labor, taking into account variations due to weather, production, breakdowns, etc.

4. The sampling results indicate exposure with allowance made for instrument accuracy.

5. All sampling must be performed according to OSHA standard methods and the industrial hygienists record must so state.

G. Issuance of Citations

1. A detailed description of the issuance of citations and classification of violations as serious or other-than-serious is provided in the Industrial Hygiene Manual.

2. The I.H. shall make a maximum effort to discover whether appropriate personal protective equipment as required by 29 CFR 1910.95(a), 1910.134, 1910.1000(e) and 1910.1000(d) is being fitted and worn by all employees exposed to toxic substances.

a. Where respirators or other personal protective equipment are not properly fitted or worn, and the affected employee is exposed to a toxic substance in excess of the permissible exposure limits required by the applicable standard, a citation shall be issued with classification as serious or other than serious, determined according to the hazard as described in the Industrial Hygiene Manual.

b. For purposes of proposing a penalty, the gravity of the serious health violation will depend on (1) the number of employees exposed without personal protective equipment, as compared with the number of employees properly wearing personal protective equipment; (2) the potential health consequences of the compound or condition to which the employee is exposed. More specific penalty guidelines will be given with the publication of Chapter XI.

3. An employer shall be cited for an other than serious violation where he has not established written operating procedures governing the use of respirators, has not trained and instructed employees in their proper use, and has not regularly cleaned and disinfected the respirators, even though such respirators are properly fitted and worn.

4. When appropriate personal protective equipment is being properly used, citations will be issued for failure to utilize administrative or engineering controls when the I.H. has a reasonable belief that such controls are feasible. Generally, such citations will be other than serious unless available data indicates that the personal protective equipment, even when properly fitted and worn, is not effective in fully reducing exposure to acceptable limits as required by the applicable standard.

5. During the course of the inspection, the I.H. will carefully investigate the source or cause of observed hazards to determine if some type of engineering or administrative control or combination thereof may be applied which would significantly reduce employee exposure. In order to cite, the OSHA representative's knowledge need not establish that the controls would reduce exposure to the limits prescribed by the applicable standard.

6. Work practices and personal hygiene.

a. Citations for serious violations should be issued where an air contaminant's route of ingress into the human body may be through ingestion or absorption and when employees consume food or drink where such contaminants are present. The proper citation would be for 29 CFR 1910.141(g)(2) for allowing an employee to consume beverages or food "in any area exposed to a toxic material." A "toxic material" is defined in 29 CFR 1910.141(a)(2)(viii) as "a material in concentration or amount which exceeds the applicable limit established by a standard, such as §§ 1910.1000 and 1910.1001 or, in the absence of an applicable standard, which is of such toxicity so as to constitute a recognized hazard that is causing or is likely to cause death or serious physical harm."

b. The following paragraph is an explanation of the definition of toxic material as per 1910.141(a)(2)(viii). Where a compound's permissible exposure limit is listed in Table Z-1 of 29 CFR 1910.1000, citation for improper work practices or personal hygiene will *not* depend on measurements of airborne levels in excess of those required by Table Z-1, which is only relevant when the hazards of airborne concentrations are present. Thus where a compound is either listed in Table Z-1 and Table Z-2 or is a recognized hazard and employees are exposed to the hazards of ingestion or absorption in an area where they are allowed to consume beverages or food, a citation should be issued under 1910.141(g)(2).

c. Citations for specific work practices and personal hygiene requirements for carcinogenic substances; e.g., 29 CFR 1910.1004(c)(4)(iii), should be issued under the applicable standard.

7. Where ingestion or absorption dangers to Table Z-1 and Table Z-2 substances or recognized hazards are present in *nonconsumption* areas a serious citation should be issued under section 5(a)(1) of the Act if it is a recognized hazard after consultation with the Regional Office with directions provided by the Technical and Analytical Assistance Unit. Thus, where airborne, ingestive or absorptive exposure to a toxic substance is not governed by a specific standard, a citation under the general duty clause should be issued if the exposure constitutes a recognized hazard likely to cause death or serious physical harm. Particular attention should be given to establishing the systemic effects of this substance upon the human body, the levels of exposure, the number of employees affected, the effectiveness of the respirator program and the recognition of the hazard in the applicable industry. A toxic substance may be regulated for airborne exposures in 29 CFR 1910.1000 but not regulated for ingestive or absorptive exposures. These are also subject to the general duty clause as specified above.

H. Feasible Engineering and Administrative Controls

1. Administrative Control

Any procedure which significantly limits daily exposure by control or manipulation of the work schedule. The use of personal protective equipment is *not* considered a means of administrative control.

2. Engineering Control

Any procedure other than administrative control or the use of personal protective equipment that reduces exposure at its sources or close to the employee; e.g., hearing zone, breathing zone, etc. Proper work practices and personal hygiene facilities are defined as engineering controls.

3. Feasibility

Existence of general technical knowledge as to materials or methods which are available or adaptable to specific circumstances with a reasonable possibility that employee exposure to violative conditions of noise, dust or other substances or conditions will be reduced.

a. Determining Feasibility.

(1) Engineering controls are feasible when the I.H. using directions and guidelines provided by the Technical and Analytical Assistance Unit through the Regional Technical Support possesses general knowledge as to present or developing technology based upon, but not limited to, one of the following sources:

(a) Similar situations observed elsewhere with adequate engineering controls to reduce employee exposure.

(b) Written source materials or conference presentations that indicate equipment and designs are available to reduce employee exposure in similar situations.

(c) Studies by a qualified consulting firm, professional engineer, industrial hygienist, or insurance carrier that show engineering controls are technically feasible.

(d) Studies and materials collected and prepared by the Technical and Analytical Assistance Unit.

(e) Equipment catalogs and suppliers that indicate engineering controls are technically feasible and are or will become available within the citation's abatement period.

(2) General knowledge of industry and available and developing technology indicates that feasible engineering controls will exist in most cases.

b. Economics and Feasibility.

(1) The employer's economic cost of abatement will not be considered to be a factor in the issuance of a citation. However, if the cost of utilization of effective engineering or administrative controls, or combination, which would bring the employer into compliance with permissible exposure limits would so seriously jeopardize his financial condition as to result in the probable shutdown of his establishment or a substantial part, then only a personal protective equipment program should be required in the interim, and an extended abatement date should be granted to permit the extended implementation of feasible engineering or administrative controls taking into account the employer's financial condition. The burden of proof of economic infeasibility rests upon the employer. Any abatement date based on economic grounds shall be approved by the Regional Administrator.

(a) Wherever feasible engineering controls which can be instituted are not sufficient to reduce exposures to, at, or below the permissible exposure limit, they shall be

used nonetheless to reduce exposure to the lowest practicable level.

(b) Where a personal protective equipment program is being followed but feasible engineering and/or administrative controls have not been implemented, other-than-serious citations shall be issued. However, in light of the difficulty of discovering irregularities in a personal protective equipment program, as well as the presumptive inadequacy of personal protective equipment, an exceptional penalty schedule should be established for other-than-serious violations of feasibility requirements. For example, if exposure levels are very high and no controls have been put in place, an unadjusted penalty of \$1000 should be proposed, subject to adjustment for size, good faith and past history.

Abatement

1. Abatement Dates

Under Section 9(a) of the Act, the citation for feasible engineering or administrative controls must "fix a reasonable time for abatement of the violation." In the implementation of such controls, a step-by-step program for abatement is of paramount importance. Therefore, the citation as reflected by the Standard Alleged Violation examples shall contain the following abatement elements with specific abatement dates for their completion as determined by the I.H., using guidelines of the Technical and Analytical Assistance Unit, in consultation with the Regional Technical Support.

a. The employer shall immediately insure the use of effective and appropriate personal protective equipment as an interim measure until feasible engineering or administrative controls can be developed and implemented.

b. By a date certain, a written detailed schedule of abatement shall be submitted to the Area Director, outlining the program for feasible engineering or administrative controls. (Note: With regard to the noise standard, engineering and administrative controls are equivalent abatement priorities; with regard to air contaminants, engineering controls must be exhausted before an employer may rely upon administrative controls.) The employer should be advised that the schedule should include target dates for such items as:

- (1) Hiring of identified engineering consultant;
- (2) Completion of preliminary surveys and engineering studies;
- (3) Decision on optimally feasible abatement program;
- (4) Completion of design phase;
- (5) Selection of contractor;
- (6) Ordering of equipment and materials; and
- (7) Submission of regular progress reports.

c. By a date certain, the feasible engineering controls must be determined. This date should reflect the progress in b. (3) above which provides for a "decision on optimally feasible abatement program."

d. By a date certain, all feasible engineering or administrative controls will be in place, thereby reducing employee exposure to the levels required by the relevant standard.

2. Monitoring of Abatement Plans

A multistep, extended abatement plan must be closely monitored by the Area Office in order to determine whether the schedule is being met and whether maximum effort is being directed toward the implementation of feasible controls. Although no formal approval of plans will be given by OSHA in the context of uncontested citation, OSHA shall acknowledge receipt of the plan in writing. Where an Area Office discovers apparent deficiencies in the employer's proposed plan, the employer should be urged to correct such deficiencies if the abatement efforts are to be successful. The specific elements of such a monitoring program are as follows:

a. Careful analysis of the detailed abatement schedule and of all progress reports submitted pursuant thereto. Such analysis will require close coordination with the AARD for Technical Support, the Technical and Analytical Assistance Unit and National Office personnel familiar with the state of the technical art;

b. Monitoring visits conducted one or two times per year to insure that target dates are being met and that controls are being expeditiously implemented. Such monitoring visits shall involve not only an evaluation of engineering progress, but also the sampling of employee exposures and the detailed examination of all medical data to determine the extent of continuing exposure and its effect upon the employees. In those instances where severe symptomology is detected by licensed physicians at any time, including during the course of abatement, serious consideration should be given to instituting imminent danger proceedings pursuant to Chapter IX of the FOM in coordination with the Regional Solicitor and the Technical Assistant and Analytical Unit.

3. Petitions for Modification of Abatement Dates

The Secretary has promulgated regulations, 29 CFR 1903.14a, governing the disposition of petitions for modification of abatement dates. Before the Area Director grants such a petition, the following procedure is to be followed:

a. No petition may be granted unless all five requirements in 29 CFR 1903.14a(b)(1)-(5) are set forth in detail in the employer's petition.

b. Before an extension is granted, a monitoring inspection must be conducted to insure that the employer's representations are true and in good faith and that the employer has attempted to implement controls as expeditiously as possible. This monitoring inspection can be conducted before the petition for modification of abatement is received providing the inspection adequately represents the conditions at the time the detection for modification of abatement date is received.

c. Where it is determined that the employer has not made a good faith effort to comply with the abatement requirements by the dates contained in the original citation, a failure to abate notification should be issued in conjunction with the objection of the petition for modification of abatement date. The latter document must be forwarded to the Commission pursuant to 29 CFR 1903.14a(d).

d. Where employees comment on an extension of

abatement date, written notation of the fact and details must be recorded and placed in the case file.

4. Consultation with Affected Employees and Their Representatives

It should be emphasized that the implementation of engineering controls and work practices in the context of a long-range abatement plan vitally affects employees and their working conditions. Accordingly, in order to maximize the effectiveness of any abatement plan, close coordination and consultation with affected employees or their representatives is imperative. Specifically, the following actions should be taken:

a. All abatement schedules and progress reports shall be made available to affected employees or their representatives, subject to any trade secret protections of Section 15 of the Act.

b. All monitoring visits shall be conducted with the full opportunity for participation by employee representatives.

In such cases where an employee or his representative files objections, the petition is treated as a contested case pursuant to 29 CFR 1903.14a(d).

5. Failure to Abate

a. Where a determination is made during a

monitoring visit and prior to the expiration of the final abatement date (see 1.2.) the employer has failed to maintain the schedule for abatement, no failure to abate notification shall be issued unless the employer has not made a good faith effort to meet the target dates set forth in his abatement plan and such failure will make it impossible to complete abatement by the final date established in the citation.

b. A thorough investigation of the extent of abatement must be made at the expiration of a final abatement date. This investigation shall include analysis of the employer's final abatement report and an inspection of the worksite. Where the employer has failed to implement any controls, a failure to abate notification shall be issued. Where the employer has implemented some controls, but other technology was available during the abatement period which would have brought the levels of airborne concentrations or noise within the regulatory requirements, a failure to abate notification shall be issued. Where failure to abate by means of engineering controls is found to be due to infeasibility of technology, no failure to abate notification shall be issued for a failure to implement feasible engineering controls; however, if proper administrative controls, work practices or personal protective equipment are not utilized, a failure to abate notification shall be issued.

CLASSIFICATION OF HEALTH VIOLATIONS

Figure I

OSHA/ACGIH SUBSTANCE TOXICITY REPORT

EXPLANATION OF TABLE HEADINGS												
FIELD NO		CODE		SUBSTANCE		PHY ST	OSHA PEL PPM	OSHA PEL MG/M3	ACGIH PEL PPM	ACGIH PEL MG/M3	HEALTH HAZARD CATEGORY	HEALTH HAZARD CLASSIFICATION
1	2	3	4	5	6	7	8					

1---CODE NUMBER ASSIGNED TO EACH HEALTH HAZARD CATEGORY; TOTAL CATEGORY NUMBERS=60. FOR SUBSTANCES WHERE THE PEL(TLV) HAS BEEN ESTABLISHED TO GUARD AGAINST ONE PRINCIPAL EFFECT, NUMBERS 1 THROUGH 19 WERE ASSIGNED IN RANK ORDER FROM MOST SERIOUS HEALTH HAZARD, (EXAMPLE: 1 CANCER-CAUSING AGENTS CURRENTLY REGULATED AS SUCH (CODE #11) CUMULATIVE TOXIC SUBSTANCES ALSO SUSPECTED AS CARCINOGENS (CODE #21) ... MARKED IRRITANTS (CODE #13) ... HOUSEKEEPING/LOW HAZARD POTENTIAL (CODE #19). FOR SUBSTANCES WHERE THE PEL(TLV) HAS BEEN ESTABLISHED TO GUARD AGAINST TWO OR MORE PRINCIPAL EFFECTS, NUMBERS 20 THROUGH 60 WERE ASSIGNED ON AN ARBITRARY BASIS.

2---FIELD NUMBER CURRENTLY ASSIGNED BY OSHA FOR REPORTING SPECIFIC VIOLATIONS IN THE FIELD. WHERE SUBSTANCES DO NOT HAVE A CODE NUMBER, IT MEANS THAT THEY ARE MOST LIKELY NEW ADDITIONS TO THE ACGIH TLV LIST. PREFIX C -- CARCINOGEN; PREFIX P -- PESTICIDE.

3---CHEMICAL NAME OF SUBSTANCE AS CITED BY OSHA (29 CFR 1910.1000, TABLES Z-1, Z-2, OR Z-3) AND ACGIH (1975 TLV LIST).

4---PHYSICAL STATE OF SUBSTANCE: 1-SOLID; 2-LIQUID; 3-GAS; 4-FUM-FUME; 5-MIXTURE; 6-VARIES WITH INDIVIDUAL COMPOUNDS; 7-VAPOR.

5---OSHA STANDARD AS PRESENTED IN 29 CFR 1910.1000, TABLES Z-1, Z-2, OR Z-3; PPM-PARTS PER MILLION PARTS OF AIR; MG/M3-MILLIGRAMS PER CUBIC METER OF AIR. IN CASE OF CATEGORY #1 - CANCER, STD 1910.10-- REFER TO WORK PRACTICE STANDARDS LISTED IN 29 CFR. 1-C-CEILING LIMIT; NONE-INDICATES NO OSHA STANDARD.

6---PEL(TLV) ADOPTED(A) AND PROPOSED(P) BY THE AMERICAN CONFERENCE OF GOVERNMENTAL INDUSTRIAL HYGIENISTS (ACGIH) TLV COMMITTEE FOR 1975. HANDLING: PROD-PRODUCTION; WHEP THERE IS AN A OR P DESIGNATION FOR ANY VALUE IN THIS COLUMN. IT MEANS THAT THESE SUBSTANCES WERE ADOPTED OR PROPOSED BY ACGIH AFTER 1968. THE YEAR FROM WHICH OSHA PEL(TLV) STANDARDS WERE DERIVED. IN SOME CASES, THE 1975 ACGIH VALUE WILL BE LOWER THAN THE CURRENT OSHA VALUE.

7---PRINCIPAL EFFECT(S) OF EACH SUBSTANCE FOR WHICH THE PEL(TLV) WAS ESTABLISHED TO PREVENT OR DIMINISH.

8---RATING OF VIOLATION AS SERIOUS(S) OR OTHER(O) BASED ON DATA IN DOCUMENTATION OF THRESHOLD LIMIT VALUES ACGIH, THIRD EDITION(1971), AND SUPPLEMENTS PUBLISHED SINCE 1971.

OSHA/ACGIH SUBSTANCE TOXICITY REPORT

CRITERIA FOR RATING A SUBSTANCE SERIOUS OR OTHER

IN CATEGORIZING SUBSTANCES AS EITHER SERIOUS OR OTHER, ONLY THE TOXICOLOGIC PROPERTIES OF A CHEMICAL SUBSTANCE WERE USED. NO ATTEMPT WAS MADE TO INCLUDE AN EVALUATION OF THE INDUSTRIAL PROCESSES FOR SUBSTANCES OR THE LIKELIHOOD THAT ANY GIVEN MATERIAL COULD EXCEED THE PEL. BASICALLY, EIGHT MAJOR CATEGORIES WERE USED AS FOLLOWS:

MAJOR HEALTH HAZARD CATEGORY	SUBSET EXPLANATION	CODE #
I CANCER	REGULATED AT PRESENT AS CARCINOGENS BY OSHA/ CHIEFLY WORK PRACTICE STANDARDS	1
II CHRONIC (CUMULATIVE) TOXICITY	SUSPECT CARCINOGENS ALSO NO EVIDENCE OF CANCER POTENTIAL AT PRESENT	2 3 4
III ACUTE SYSTEMIC TOXICITY		5
IV NERVOUS SYSTEM DISTURBANCES	CHOLINESTERASE INHIBITION CNS EFFECTS OTHER THAN NARCOSIS NARCOSIS	6 7
V RESPIRATORY EFFECTS OTHER THAN IRRITATION	RESPIRATORY SENSITIZATION (ASTHMA) CUMULATIVE LUNG DAMAGE (PNEUMOCONIOSIS) ACUTE LUNG DAMAGE WITH EDEMA	8 9 10
VI HEMATOLOGIC (BLOOD) DISTURBANCES	HEMOLYTIC ANEMIA METHEMOGLOBINEMIA	11 12
VII IRRITATION-EYE, NOSE, THROAT,	MARKED MODERATE MILD	13 14 15
VIII GENERAL LOW RISK HEALTH EFFECTS	ASPHYXIANTS, ANOXIANTS "INERT" (NUISANCE) PARTICULATES ODOR GOOD HOUSEKEEPING	16 17 18 19

THE DOCUMENTATION PRESENTED BY ACGIH FOR EACH SUBSTANCE WAS REVIEWED AND GREAT WEIGHT WAS GIVEN TO ACGIH'S REASONS FOR ESTABLISHING THE PEL AS WELL AS SCIENTIFIC EVIDENCE FROM EITHER HUMAN OR ANIMAL EXPERIENCE. AN EXPOSURE ABOVE THE PEL WAS CONSIDERED TO BE A POTENTIALLY SERIOUS VIOLATION IF THE SUBSTANCE WAS OCCU-
RRENTLY AS CAPABLE OF PRODUCING THE EFFECTS AT THE SPECIFIED PEL (OTHER THAN CODES 15, 17, 18, & 19). IF THE TOXIC EFFECTS WERE CUMULATIVE AND/OR IF THE TOXIC EFFECTS WERE POTENTIALLY IRREVERSIBLE, ALL OTHERS WERE EITHER NONSERIOUS OR NONSERIOUS WITH SOME UPPER LIMIT ABOVE THE TLV WHERE CONTINUED EXPOSURE WOULD LEAD TO IRREVERSIBLE EFFECTS.

OSHA/ACGIH SUBSTANCE TOXICITY REPORT
*** FILE SORTED BY SUBSTANCE ***

FIELD NO	SUBSTANCE	PHY ST	OSHA PEL PPM	MG/M3	ACGIH PEL PPM	MG/M3	HEALTH HAZARD CATEGORY	HEALTH HAZARD CLASSIFICATION
5 0005	ABATE	S	NONE	NONE	A -	10	CHOLINESTERASE INHIBITION	0-UP TO 3XPEL 5-ABOVE 3XPEL
13 0010	ACETALDEHYDE	L	200	340	A 100	100	MARKED IRRITATION - EYE, NOSE, THROAT, SKIN	5-AT CURRENT OSHA PEL OF 200 PPM
13 0020	ACETIC ACID	L	10	25	10	25	MARKED IRRITATION - EYE, NOSE, THROAT, SKIN	0-UP TO 3XPEL 5-ABOVE 3XPEL
13 0030	ACETIC ANHYDRIDE	L	5	20	A C 5	20	MARKED IRRITATION - EYE, NOSE, THROAT, SKIN	5- ABOVE 5 PPM
7 0040	ACETONE	L	1000	2400	1000	2400	MILD IRRITATION-EYE, NOSE, THROAT/ NARCOSIS	0- UP TO 3XPEL 5- ABOVE 3XPEL
4 0060	ACETONITRILE	L	40	70	40	70	MILD IRRITATION - EYE, NOSE, THROAT/ ACUTE TOXICITY (CYANOSIS)	S
1 0065	2-ACETYLAMINOFLUORENE	S	STD 1910,1014	NONE	NONE	NONE	CANCER	S
16 0070	ACETYLENE	G	NONE	NONE	A F	-	SIMPLE ASPHYXIATION	0-BELOW 5000 PPM 5-ABOVE 5000 PPM
3 0080	ACETYLENE TETRABROMIDE	L	1	14	1	14	CUMULATIVE LIVER & LUNG DAMAGE	S
13 0110	ACHOLEIN	L	0.1	0.25	0.1	0.25	MARKED IRRITATION - EYE, NOSE, THROAT, LUNGS, SKIN	S
6 0115	ACRYLAMIDE - SKIN	S	-	0.3	-	0.3	ACUTE SYSTEMIC TOXICITY (CNS)	S
4 0120	ACRYLONITRILE - SKIN	L	20	45	20	45	MODERATE IRRITATION - EYE, NOSE, THROAT/ ACUTE TOXICITY (CYANOSIS)	S

OSHA/ACGIH SUBSTANCE TOXICITY REPORT
*** FILE SORTED BY SUBSTANCE ***

FIELD NO CODE SUBSTANCE	PHY ST	OSHA PEL PPM	ACGIH PEL PPM	HEALTH HAZARD CATEGORY	HEALTH HAZARD CLASSIFICATION
2 0125 ALORIN - SKIN	S	-	0.25	CUMULATIVE LIVER DAMAGE/SUSPECT CARCINOGEN	S
17 0160 ALLURDUM(AL2O3)	S	NONE	A -	10 "INERT" PARTICULATE (ACCUMULATION IN LUNGS)	0
13 0130 ALLYL ALCOHOL - SKIN	L	2	5	5 MARKED IRRITATION - EYE, NOSE, THROAT, SKIN/CUMULATIVE EYE DAMAGE	S
3 0140 ALLYL CHLORIDE	L	1	3	3 MARKED IRRITATION - EYE, NOSE, THROAT, SKIN/CUMULATIVE LIVER DAMAGE	S
13 0145 ALLYL GLYCIDYL ETHER (AGE) SKIN	L	C 10	45	22 MARKED IRRITATION - EYE, NOSE, THROAT SKIN/CONTACT ALLERGY SKIN	S
13 0150 ALLYL PROPYL DISULFIDE	L	2	12	12 MARKED IRRITATION- EYE, NOSE, THROAT	S
13 0618 ALPHA-CHLOROACETOPHENONE	L/S	0.05	0.03	0.03 MARKED IRRITATION- EYE, NOSE, THROAT, LUNGS, SKIN	S
14 1778 ALPHA-METHYL STYRENE	L	C 100	480	480 MODERATE IRRITATION- EYE, NOSE, THROAT	S-ABOVE CEILING LIMIT
1 C1815 ALPHA-NAPHTHYLAMINE	S	STD 1910.1004	NONE	NONE CANCER-BLADDER (SUSPECT)	S
1 C0162 4-AMINODIPHENYL-SKIN	S	STD 1910.1011	A1B	- CANCER	S
3 0165 2-AMINOPYRIDINE	S	0.5	2	2 CUMULATIVE TOXICITY INCREASED BLOOD PRESSURE	0-UP TO 3XPEL S-ABOVE 3XPEL
13 0170 AMMONIA	G	50	35	18 MARKED IRRITATION - EYE, NOSE, THROAT, LUNGS	S-ABOVE 25 PPM

OSHA/ACGIH SUBSTANCE TOXICITY REPORT
*** FILE SORTED BY SUBSTANCE ***

FIELD NO CODE SUBSTANCE	PHY ST	OSHA PEL PPM	ACGIH PEL PPM	HEALTH HAZARD CATEGORY	HEALTH HAZARD CLASSIFICATION
15 0175 AMMONIUM CHLORIDE	S	NONE	A -	10 MILD IRRITATION - EYE, NOSE, THROAT	0
15 0185 AMMONIUM SULFANATE	S	-	A -	10 MILD IRRITATION - EYE, NOSE, THROAT	0
14 0190 N-AMYL ACETATE	L	100	100	525 MODERATE IRRITATION - EYE, NOSE, THROAT	0-UP TO 2XPEL S-ABOVE 2XPEL
14 0191 AMYL ACETATE-SEC	L	125	125	650 MODERATE IRRITATION - EYE, NOSE, THROAT	0-UP TO 2XPEL S-ABOVE 2XPEL
12 0220 ANILINE - SKIN	L	5	5	19 METHEMOGLOBIN FORMATION/ACUTE TOXIC (SYSTEMIC) EFFECTS	0-UP TO 2XPEL S-ABOVE 2XPEL
3 0225 ANISIDINE (O,P - ISOMERS)	L	-	-	0.5 METHEMOGLOBIN FORMATION/CUMULATIVE TOXICITY	0-UP TO 3XPEL S-ABOVE 3XPEL
3 0230 ANTIMONY & COMPOUNDS (AS SB)	S	-	P HNDL. 5, PROD .05	CUMULATIVE LIVER AND HEART DAMAGE	S
3 0235 ANTU (ALPHA NAPHTHYL THIOUREA)	S	-	-	0.3 CUMULATIVE ENDOCRINE (THYROID AND ADRENAL) DAMAGE	S
16 0240 ARGON	0	NONE	A F	- SIMPLE ASPHYXIAION	0-IF OXYGEN IS GREATER THAN 18% BY VOL
2 0260 ARSENIC & COMPOUNDS (AS AS)	S	-	P HNDL .25, PROD .05	CUMULATIVE SYSTEMIC POISON/SUSPECT CARCINOGEN	S
4 0270 ARSINE	G	0.05	0.05	0.2 ACUTE SYSTEMIC TOXICITY	S
1 9020 ASBESTOS (ALL FORMS)	S	STD 1910.1001	2 FIBERS/CC	ASBESTIOSIS/CANCER	S
2 0290 ASPHALT (PETROLEUM) FUMES	FUM	NONE	A -	5 GOOD HOUSEKEEPING PRACTICE/SUSPECT CARCINOGEN	S

OSHA/ACGIH SUBSTANCE TOXICITY REPORT
 *** FILE SORTED BY SUBSTANCE ***

FILE NO	SUBSTANCE	PHY ST	OSHA PEL PPM	ACGIH PEL PPM	HEALTH HAZARD CATEGORY	HEALTH HAZARD CLASSIFICATION
5	0300 AZINPHOS METHYL-SKIN	S	-	0.2	CHOLINESTERASE INHIBITION	0-UP TO 3XPEL S-ABOVE 3XPEL
3	0310 BARIUM (SOLUBLE COMPOUNDS)	S	-	0.5	CUMULATIVE HEART, LUNG, & BRAIN DAMAGE	S
5	DAYGON (PROPOXUR)	S	NONE	0.5	CHOLINESTERASE INHIBITION	0-UP TO 10XPEL S-ABOVE 10XPEL
2	0320 BENZENE - SKIN	L	10	10A2	CUMULATIVE BONE MARROW DAMAGE/SUSPECT LEUKEMOGEN	S
1	0330 BENZIDINE - SKIN	S	STD 1910.1010	A	IR CANCER OF BLADDER	S
2	0335 BENZOYL PEROXIDE	S	-	5	MODERATE IRRITATION EYE, NOSE, THROAT/SUSPECT CARCINOGEN	S
2	0340 BENZYL CHLORIDE	L	1	1	MARKED IRRITATION - EYE, NOSE, THROAT/SUSPECT CARCINOGEN	S
2	0360 BERYLLIUM AND COMPOUNDS	S	-	0.002	CUMULATIVE LUNG DAMAGE (BRUYLLIOSIS)/SUSPECT CARCINOGEN	S
1	01820 BETA-NAPHTHYLAMINE	S	STD 1910.1009	A1B	CANCER-BLADDER	S
1	02163 BETA-PROPIOLACTONE	L	STD 1910.1013	A 2	ACUTE SYSTEMIC TOXICITY (HIGH)/CANCER	S
14	1011 BIPHENYL (DIPHENYL)	S	0.2	1	MODERATE IRRITATION EYE, NOSE, THROAT, LUNGS	0-UP TO 3XPEL S-ABOVE 3XPEL
1	02630 BIS-CHLOROMETHYL ETHER	L	STD 1910.100H	A1A	CANCER (LUNG)	S
17	0370 BISMUTH TELLURIDE	S	NONE	A -	"INERT" PARTICULATE (ACCUMULATION IN LUNGS)	0

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OSHA/ACGIH SUBSTANCE TOXICITY REPORT
*** FILE SORTED BY SUBSTANCE ***

FIELD NO CODE SUBSTANCE	PHY ST	OSHA PEL PPM	MG/M3	ACGIH PEL PPM	HEALTH HAZARD CATEGORY	HEALTH HAZARD CLASSIFICATION
3 0370 BISMUTH TELLURIDE (SE-DOPED)	S	NONE	NONE	A -	5 CUMULATIVE LUNG DAMAGE	S
14 0371 BORATES, TETRA, SODIUM SALT, ANHYDRATE	S	NONE	NONE	P -	1 MODERATE IRRITATION- EYE, NOSE, THROAT, SKIN	0-UP TO 2XPEL S-ABOVE 2XPEL
14 0372 BORATES, TETRA, SODIUM SALT, DECAHYDRATE	S	NONE	NONE	P -	5 MODERATE IRRITATION- EYE, NOSE, THROAT, SKIN	0-UP TO 2XPEL S-ABOVE 2XPEL
14 0373 BORATES, TETRA, SODIUM SALT, PENTAHYDRATE	S	NONE	NONE	P -	1 MODERATE IRRITATION- EYE, NOSE, THROAT, SKIN	0-UP TO 2XPEL S-ABOVE 2XPEL
17 0380 BORON OXIDE	S	-	15	A -	10 "INERT" PARTICULATE (ACCUMULATION IN LUNGS)	0
13 0381 BORON TRIBROMIDE	L	NONE	NONE	A 1	10 MARKED IRRITATION- EYE, NOSE, THROAT, LUNGS	S
10 0382 BORON TRIFLUORIDE	G	C 1	3	C 1	3 ACUTE AND CHRONIC LUNG IRRITATION (PNEUMONIA)	S
13 0390 BROMINE	L	0.1	0.7	0.1	0.7 MARKED IRRITATION- EYE, NOSE, THROAT, LUNGS	S
13 0391 BROMINE PENTAFLUORIDE	L	NONE	NONE	A 0.1	0.7 MARKED IRRITATION- EYE, NOSE, THROAT, LUNGS	S
3 0400 BROMOFORM - SKIN	L	0.5	5	0.5	5 MARKED IRRITATION- EYE, NOSE, THROAT/ CUMULATIVE LIVER DAMAGE	S
14 0410 BUTADIENE (1,3 - BUTADIENE)	G	1000	2200	1000	2200 MODERATE IRRITATION EYE, NOSE, THROAT	0-UP TO 3XPEL S-ABOVE 3XPEL
7 0420 BUTANE	G	NONE	NONE	P 600	1450 NARCOSIS	0-UP TO 3XPEL S-ABOVE 3XPEL

OSHA/ACGIH SUBSTANCE TOXICITY REPORT
 *** FILE SORTED BY SUBSTANCE ***

FIELD NO CODE SUBSTANCE	PHY ST	OSHA PEL PPM	MG/M3	ACGIH PEL PPM	MG/M3	HEALTH HAZARD CATEGORY	HEALTH HAZARD CLASSIFICATION
7 0430 2-UNITANONE (HEX)	L	200	590	200	590	MILD IRRITATION - EYE, NOSE, THROAT/ NARCOSIS	0-UP TO 2XPEL S-ABOVE 2XPEL
3 0435 2-BUTOXYETHANOL-SKIN	L	50	240	50	240	MILD IRRITATION- EYE, NOSE, THROAT/ CUMULATIVE ORC & KIDNEY DAMAGE	0-UP TO 2XPEL S-ABOVE 2XPEL
14 0440 N-BUTYL ACETATE	L	150	710	150	710	MODERATE IRRITATION- EYE, NOSE, THROAT, LUNGS (UPPER)	0-UP TO 2XPEL S-ABOVE 2XPEL
14 0441 BUTYL ACETATE-SEC	L	200	950	200	950	MODERATE IRRITATION- EYE, NOSE, THROAT, LUNGS (UPPER)	0-UP TO 2XPEL S-ABOVE 2XPEL
14 0442 BUTYL ACETATE-TERT	L	200	950	200	950	MODERATE IRRITATION- EYE, NOSE, THROAT, LUNGS (UPPER)	0-UP TO 2XPEL S-ABOVE 2XPEL
7 0461 BUTYL ALCOHOL-SEC	L	150	450	150	450	MODERATE IRRITATION- EYE, NOSE, THROAT/ NARCOSIS	0-UP TO 2XPEL S-ABOVE 2XPEL
14 0460 N-BUTYL ALCOHOL-SKIN	L	100	300	P 50	150	MODERATE IRRITATION- EYE, NOSE, THROAT	S-AT CURRENT OSHA PEL
14 0462 BUTYL ALCOHOL-TERT	S	100	300	100	300	MODERATE IRRITATION- EYE, NOSE, THROAT	0-UP TO 2XPEL S-ABOVE 2XPEL
2 0473 BUTYL CHROMATE-TERT (AS CRO3)-SKIN	S	C -	0.1	C -	0.1	MARKED IRRITATION - EYE, NOSE, THROAT SKIN/SUSPECT CARCINOGEN (CRO3 BASIS)	S
15 0477 N-BUTYL GLYCIDYL ETHER (RGE)	L	50	270	50	270	MILD IRRITATION- EYE, NOSE, THROAT, SKIN	0-UP TO 2XPEL S-ABOVE 2XPEL
14 - BUTYL LACTATE	L	NONE	NONE	P 5	25	MODERATE IRRITATION- EYE, NOSE, THROAT, LUNGS	S-AT PROPOSED PEL OLD 1 GRD LEVEL SAFER

OSHA/ACGIH SUBSTANCE TOXICITY REPORT
*** FILE SORTED BY SUBSTANCE ***

FILED NO CODE SUBSTANCE	PHY ST	OSHA PEL PPM	ACGIH PEL PPM	HEALTH HAZARD CATEGORY	HEALTH HAZARD CLASSIFICATION
14 0480 BUTYL MERCAPTAN	L	10	35 A 0.5	1.5 ODOOR/MODERATE IRRITATION-EYE, NOSE, THROAT	S-AT CURRENT OSHA PEL
3 0485 P-TERT-BUTYL TOLUENE	L	10	60	60 CUMULATIVE LIVER, KIDNEY, CNS DAMAGE	S
13 0470 BUTYLAMINE - SKIN	L	C 5	15 C 5	15 MARKED IRRITATION - EYE, NOSE, THROAT, LUNGS, SKIN	S
2 0490 CADMIUM (METAL DUST & SOLUBLE SALTS)	S	-	0.2	0.2 CUMULATIVE KIDNEY & LUNG DAMAGE/SUSPECT CARCINOGEN	S
2 0491 CADMIUM OXIDE (FUME)	FUM	-	0.1 A -	0.05 CUMULATIVE KIDNEY & LUNG DAMAGE/SUSPECT CARCINOGEN	S
2 0500 CALCIUM ARSENATE AS AS	S	-	1	1 CUMULATIVE SYSTEMIC AS POISONING/ SUSPECT CARCINOGEN	S
17 0505 CALCIUM CARBONATE	S	NONE	NONE A -	10 "INERT" PARTICULATE (ACCUMULATION IN LUNGS)	0
14 0510 CALCIUM CYANAMIDE	S	NONE	NONE P -	0.5 MODERATE IRRITATION EYE, NOSE, THROAT SKIN	S
13 ----- CALCIUM HYDROXIDE	S	NONE	NONE P -	2 MARKED IRRITATION- EYE, NOSE, THROAT, SKIN	S
13 0520 CALCIUM OXIDE	S	-	5	5 MARKED IRRITATION - EYE, NOSE, THROAT, SKIN	S
4 0522 CAMPHOR (SYNTHETIC)	S	2	12 2	12 MODERATE IRRITATION EYE, NOSE, THROAT/ ACUTE TOXICITY	S
15 ----- CAPROLACTAM DUST	S	NONE	NONE A -	1 MILD IRRITATION - EYE, NOSE, THROAT, SKIN	O-UP TO 2X PEL S-ABOVE 2X PEL

OSHA/ACGIH SUBSTANCE TOXICITY REPORT
*** FILE SORTED BY SUBSTANCE ***

FIELD NO CODE SUBSTANCE	PHY ST	OSHA PFL PPM	OSHA PFL MG/M3	ACGIH PEL PPM	HEALTH HAZARD MG/M3 CATEGORY	HEALTH HAZARD CLASSIFICATION
15 CAPROLACTAM VAPOR	VAP	NONE	NONE	A 5	20 MILD IRRITATION- EYE, NOSE, THROAT, SKIN	0-UP TO 2XPEL 5-ABOVE 2XPEL
8 CAPTAFOLO (DIFOLATAN) SKIN	S	NONE	NONE	P -	0.1 RESPIRATORY SENSITIZATION (ASTHMA)/PHOTOTOXIC DERMATITIS	S
3 CAPTAN	S	NONE	NONE	P -	5 CUMULATIVE SYSTEMIC TOXICITY/POTENTIAL MUTAGEN	S
3 P0525 CARBARYL (SEVIN)	S	-	5	-	5 CHOLINESTERASE INHIBITION/ CUMULATIVE LIVER DAMAGE	S
5 CARBOFURAN	S	NONE	NONE	P -	0.1 CHOLINESTERASE INHIBITION	0-UP TO 2XPEL 5-ABOVE 2XPEL
2 0527 CARBON BLACK	S	-	3.5	-	3.5 CUMULATIVE HEART DAMAGE/SUSPECT CARCINOGEN	S
16 0530 CARBON DIOXIDE	G	5000	9000	5000	9000 SIMPLE ASPHYXIATION	0-UP TO 10XPEL 5-ABOVE 10XPEL
3 0540 CARBON DISULFIDE-SKIN	L	20	60	20	60 CUMULATIVE CNS DAMAGE	S
16 0560 CARBON MONOXIDE	G	50	55	50	55 CHEMICAL ANOXIA AND ASPHYXIATION	0-UP TO 1.5XPEL 5-ABOVE 1.5XPEL
3 CARBON TETRABROMIDE	S	NONE	NONE	A 0.1	1.4 ACUTE AND CHRONIC TOXIC EFFECTS ON LUNGS, LIVER, AND KIDNEYS	S
2 0570 CARBON TETRACHLORIDE - SKIN	L	10	65	10	65 CUMULATIVE LIVER DAMAGE/SUSPECT CARCINOGEN	S

OSHA/ACGIH SUBSTANCE TOXICITY REPORT
*** FILE SORTED BY SUBSTANCE ***

FIELD NO CODE	SUBSTANCE	PHY ST	OSHA PEL PPM	OSHA PEL MG/M3	ACGIH PEL PPH	HEALTH HAZARD CATEGORY	HEALTH HAZARD CLASSIFICATION
3	CATECHOL (PYROCATECHOL)	S	NONE	NONE	P -	20 CUMULATIVE LIVER, KIDNEY & SKIN DAMAGE	S
17	0575 CELLULOSE (PAPER FIBER)	S	NONE	NONE	A -	10 "INERT" PARTICULATE (ACCUMULATION IN LUNGS)	0
15	CESIUM HYDROXIDE	S	NONE	NONE	A -	2 MILD IRRITATION - EYES, NOSE, THROAT, SKIN	0
2	0611 CHLOROANE - SKIN	L	-	0.5	-	0.5 CUMULATIVE LIVER DAMAGE/SUSPECT CARCINOGEN	S
3	0612 CHLORINATED CAMPHENE - SKIN	S	-	0.5	-	0.5 CUMULATIVE LIVER DAMAGE	S
3	0613 CHLORINATED DIPHENYL OXIDE	S	-	0.5	-	0.5 CUMULATIVE LIVER DAMAGE	S
9	0640 CHLORINE	G	1	3	1	3 CUMULATIVE LUNG DAMAGE/ACUTE TOXICITY	S
13	0614 CHLORINE DIOXIDE	G	0.1	0.3	0.1	0.3 MARKED IRRITATION - EYE, NOSE, THROAT, LUNGS	S
13	0615 CHLORINE TRIFLUORIDE	O/L	C 0.1	0.4	C 0.1	0.4 MARKED IRRITATION - EYES, NOSE, THROAT, LUNGS	S
14	0660 1-CHLORO-1-NITROPROPANE	L	20	100	20	100 MODERATE IRRITATION - EYE, NOSE, THROAT, SKIN	0-UP TO 3XPEL S-ABOVE 3XPEL
19	2-CHLORO-6-(TRICHLOROMETHYL) PYRIDINE	S	NONE	NONE	A -	10 GOOD HOUSEKEEPING PRACTICE (ACCUMULATION IN LUNGS)	0-UP TO 3XPEL S-ABOVE 3XPEL
13	0617 CHLOROACETALDEHYDE	L	C 1	3	C 1	3 MARKED IRRITATION - EYES, NOSE, THROAT, LUNGS SKIN	S

OSHA/ACGIH SUBSTANCE TOXICITY REPORT
 *** FILE SORTED BY SUBSTANCE ***

FIELD NO CODE SUBSTANCE	PHY ST	OSHA PFL PPN	OSHA PFL MG/M3	ACGIH PEL PPN	ACGIH PEL MG/M3	HEALTH HAZARD CATEGORY	HEALTH HAZARD CLASSIFICATION
7 0620 CHLOROBENZENE	L	75	350	75	350	NARCOSIS/CUMULATIVE SYSTEMIC TOXICITY	0-UP TO 2XPEL S-ABOVE 2XPEL
13 0623 O-CHLOROBENZYLIDENE MALONONITRILE-SKIN	S	0.05	0.4	0.05	0.4	MARKED IRRITATION - EYES, NOSE, THROAT , SKIN	S
3 0627 CHLOROBROMOMETHANE	L	200	1050	200	1050	CUMULATIVE HEART, LIVER, KIDNEY DAMAGE	S
19 0630 CHLORODIFLUOROMETHANE (F22)	G	NONE	NONE	A 1000	3500	GOOD HOUSEKEEPING PRACTICE	0-UP TO 3XPEL S-ABOVE 3XPEL
3 0630 CHLORODIPHENYL (42% CI)-SKIN	S	-	1	-	1	CUMULATIVE LIVER DAMAGE/CHLORACNE (SKIN)	S
2 0630 CHLORODIPHENYL (54% CI)-SKIN	S	-	0.5	-	0.5	CUMULATIVE LIVER DAMAGE/CHLORACNE/ SUSPECT CARCINOGEN	S
2 0670 CHLOROFORM	L	C 50	240	A 25	120	CUMULATIVE LIVER AND KIDNEY DAMAGE/ SUSPECT CARCINOGEN	S
13 0675 CHLOROPICRIN	L	0.1	0.7	0.1	0.7	MARKED IRRITATION - EYES, NOSE, THROAT	S
7 0680 CHLOROPRENE-SKIN	L	25	90	25	90	NARCOSIS/ACUTE TOXIC EFFECTS ON KIDNEY, LIVER, LUNGS	0-UP TO 3XPEL S-ABOVE 3XPEL
5 0685 CHLOROPYRIFOS (DURSBAN)-SKIN	S	NONE	NONE	A -	0.2	CHOLINESTERASE INHIBITION	0-UP TO 10XPEL S-ABOVE 10XPEL
3 0685 O-CHLOROSTYRENE	L	NONE	NONE	A 50	295	CUMULATIVE LIVER & KIDNEY DAMAGE	0-UP TO 2XPEL S-ABOVE 2XPEL
7 0685 O-CHLOROTOLUENE	L	NONE	NONE	A 50	250	NARCOSIS	0-UP TO 3XPEL S-ABOVE 3XPEL
2 0685 CHROMATES, CERTAIN INSOL. FORMS	S	-	1	-	1	CUMULATIVE LUNG DAMAGE/SUSPECT CARCINOGEN	S

OSHA/ACGIH SUBSTANCE TOXICITY REPORT
*** FILE SORTED BY SUBSTANCE ***

FILED NO CODE SUBSTANCE	PHY ST	OSHA PEL PPM	MG/M3	ACGIH PEL PPM	MG/M3	HEALTH HAZARD CATEGORY	HEALTH HAZARD CLASSIFICATION
2 0605 CHROMIC ACID & CHROMATES	L	-	0.1	-	0.1	CUMULATIVE LUNG DAMAGE/SUSPECT CARCINOGEN	S
2 0690 CHROMIUM, SOL. CHROMATES SALTS	S	-	0.5	-	0.5	CUMULATIVE LUNG DAMAGE/SUSPECT CARCINOGEN	S
17 ----- CLOPIDOL (COYDEN)	S	NONE	NONE	A -	10	"INERT" PARTICULATE (ACCUMULATION IN LUNGS)	0-UP TO 3XPEL S-ABOVE 3XPEL
2 0700 COAL TAR PITCH VOLATILES	MIX	-	0.2	-	0.2	CUMULATIVE LUNG CHANGES/SUSPECT CARCINOGEN	S
3 0720 COBALT, METAL, FUME & DUST	S	-	0.1	P -	0.01	CUMULATIVE LUNG CHANGES (ASTHMA)	S
15 0730 COPPER DUSTS & MISTS	S	-	1	-	1	MILD IRRITATION - EYES, NOSE, THROAT, SKIN	0-UP TO 2XPEL S-ABOVE 2XPEL
15 0730 COPPER FUME	S	-	0.1	A -	0.2	MILD IRRITATION- EYE, NOSE, THROAT	0-UP TO 4XPEL S-ABOVE 4XPEL
17 1016 CORUNDUM (AL2O3)	S	NONE	NONE	A -	10	"INERT" PARTICULATE (ACCUMULATION IN LUNGS)	0
9 0735 COTTON DUST (RAW)	S	-	1	A -	0.2	CUMULATIVE LUNG DAMAGE (BYSSINOSIS)	S
3 P0737 CRAG HERBICIDE (SESONE)	S	-	15	A -	10	CUMULATIVE LIVER DAMAGE	S
6 0760 CRESOL (ALL ISOMERS)-SKIN	S/L	5	22	5	22	MARKED IRRITATION- SKIN/ACUTE TOXICITY (CNS)	S
13 0770 CROTONALDEHYDE	L	2	A	2	6	MARKED IRRITATION- EYE, NOSE, THROAT LUNGS	S

OSHA/ACGIH SUBSTANCE TOXICITY REPORT
*** FILE SORTED BY SUBSTANCE ***

FIELD	PHY ST	OSHA PEL PPH	OSHA PEL MG/M3	ACGIH PEL PPH	ACGIH PEL MG/M3	HEALTH HAZARD CATEGORY	HEALTH HAZARD CLASSIFICATION
NO CONE SUBSTANCE							
5 ----- CHUFONATE (PULENE)	S	NONE	NONE	A -	5	CHOLINESTERASE INHIBITION	0
7 0780 CUMENE-SKIN	L	50	245	50	245	NARCOSIS	0-UP TO 2XPEL 5-ABOVE 2XPEL
4 ----- CYANAMIDE	S	NONE	NONE	P -	2	MARKED IRRITATION - EYE, NOSE, THROAT, SKIN/ACUTE TOXICITY	5
15 0790 CYANIDES (AS CN)-SKIN	S	-	5	-	5	MILD IRRITATION - EYE, NOSE, THROAT	0-UP TO 2XPEL 5-ABOVE 2XPEL
4 0800 CYANOGEN	G	NONE	NONE	A 10	20	MODERATE IRRITA- TION - EYE, NOSE THROAT/ACUTE TOXICITY (CYANOSIS)	5
7 0810 CYCLOHEXANE	L	300	1050	300	1050	MODERATE IRRITA- TION - EYE, NOSE THROAT/NARCOSIS	0- UP TO 2XPEL 5- ABOVE 2XPEL
3 0820 CYCLOHEXANOL	S	50	200	50	200	MILD IRRITATION - EYE, NOSE, THROAT/ CUMULATIVE LIVER & KIDNEY DAMAGE	0- UP TO 2XPEL 5- ABOVE 2XPEL
3 0830 CYCLOHEXANONE	L	50	200	50	200	MARKED IRRITATION - EYE, NOSE, THROAT/ CUMULATIVE LIVER & KIDNEY DAMAGE	5 -
3 0840 CYCLOHEXENE	L	300	1015	300	1015	MODERATE IRRITA- TION - EYE, NOSE, THROAT/CUMULATIVE SYSTEMIC TOXICITY	0- UP TO 2XPEL 5- ABOVE 2XPEL
2 ----- CYCLOHEXYLAMINE-SKIN	L	NONE	NONE	A 10	40	MARKED IRRITATION - EYE, NOSE, THROAT, SKIN/SUSPECT CARCINOGEN	5
14 0845 CYCLOPENTADIENE	L	75	200	75	200	MODERATE IRRITA- TION - EYE, NOSE, THROAT	0- UP TO 2XPEL 5- ABOVE 2XPEL

OSHA/ACGIH SURSTANCE TOXICITY REPORT
*** FILE SORTED BY SUBSTANCE ***

FILED NO CODE SUBSTANCE	PHY ST	OSHA PEL PPM	ACGIH PEL MG/M3	HEALTH HAZARD CATEGORY	HEALTH HAZARD CLASSIFICATION
4 0866 2,4,4-DICHLOROPHENOL-ACETIC ACID	S	-	10	10 ACUTE SYSTEMIC TOXICITY	0- UP TO 3XPEL S- ABOVE 3XPEL
2 P0047 DDT - SKIN	S	-	1	1 CUMULATIVE TOXICITY /SUSPECT CARCINOGEN	S
4 0053 DECABORANE-SKIN	S	0.05	0.3	0.3 ACUTE CNS TOXICITY	S
5 P0857 DEMETON(SYSTOX)-SKIN	L	-	0.1	0.1 CHOLINESTERASE INHIBITION	S
19 1015 DI-SEC. OCTYL PHTHALATE	S	-	5	5 GOOD HOUSEKEEPING PRACTICE	0
14 0860 DIACETONE ALCOHOL	L	50	240	240 MODERATE IRRITATION - EYE, NOSE, THROAT	0- UP TO 2XPEL S- ABOVE 2XPEL
5 P2720 DIAZINON - SKIN	L	NONE	NONE	0.1 CHOLINESTERASE INHIBITION	S
2 0861 DIAZOMETHANE	G	0.2	0.4	0.4 MARKED EDEMA - LUNGS/SUSPECT CARCINOGEN	S
6 ----- DIBORANE	G	0.1	0.1	0.1 MARKED EDEMA - LUNGS/ACUTE CNS TOXIN	S
5 P0932 DIBROM	S	-	3	3 CHOLINESTERASE INHIBITION	0- UP TO 2XPEL S- ABOVE 2XPEL
2 1140 1,2-DIBROMOETHANE(ETHYLENEBROMIDE)SKIN	L	20	145	145 SUSPECT CARCINOGEN	S
15 0863 DIBUTYL PHOSPHATE	L	1	5	5 MILD IRRITATION - EYE, NOSE, THROAT, LUNGS (UPPER)	0
5 ----- 2-N-DIBUTYLAMINOETHANOL-SKIN	L	NONE	NONE	14 CHOLINESTERASE INHIBITION	0- UP TO 3XPEL S- ABOVE 3XPEL
19 0864 DIBUTYLPHthalate	L	-	5	5 GOOD HOUSEKEEPING PRACTICE (ACCUMULATION IN LUNGS)	0

OSHA/ACGIH SUBSTANCE TOXICITY REPORT
 *** FILE SORTED BY SUBSTANCE ***

FIELD NO CODE SUBSTANCE	PHY SY	OSHA PEL PPM	ACGIH PEL MG/H3	ACGIH PEL PPM	HEALTH HAZARD CATEGORY	HEALTH HAZARD CLASSIFICATION
4 0890 1,1-DICHLORO-1-NITROETHANE	L	C 10	60	10	60 ACUTE SYSTEMIC TOXICITY (LUNGS, HEART, LIVER, KIDNEYS)	S
13 0872 1,3-DICHLORO-5,5-DIMETHYL HYDANTOIN	S	-	0.2	-	0.2 MARKED IRRITATION - EYE, NOSE THROAT, LUNGS (UPPER)	0- UP TO 3XPEL 5- ABOVE 3XPEL
3 0865 DICHLOROACETYLENE	L	NONE	NONE	C 0.1	0.4 CUMULATIVE CNS TOXICITY (DISABLING NAUSEA)	S
13 0867 O-DICHLOROBENZENE	L	C 50	300	C 50	30 MARKED IRRITATION - EYE, NOSE, THROAT	S
3 0868 P-DICHLOROBENZENE	S	75	450	75	450 CUMULATIVE SYSTEMIC TOXICITY	S
1 0869 2,3-DICHLOROPREZIDINE-SKIN	S	STD 1910.1007	A	2	CANCER (BLADDER)	S
19 0871 DICHLORODIFLUOROMETHANE (F12)	G	1000	4950	1000	4950 GOOD HOUSEKEEPING PRACTICE (ACCUMULATION IN LUNGS)	0
3 1160 1,1-DICHLOROETHANE	L	100	400	A 200	820 CUMULATIVE LIVER DAMAGE	0-UP TO 3X CURRENT OSHA PEL 5-ABOVE 3XPEL
3 0874 1,2-DICHLOROETHANE (ETHYLENE DICHLORIDE)	L	50	200	50	200 CUMULATIVE LIVER DAMAGE	S
13 0880 DICHLOROMETHYL ETHER - SKIN	L	C 15	90	A 5	30 MARKED IRRITATION - EYE, NOSE, THROAT, LUNGS	S- AT CURRENT OSHA PEL
7 0870 1,2-DICHLOROETHYLENE	L	200	790	200	790 NARCOSIS	0- UP TO 3XPEL 5- ABOVE 3XPEL
19 0887 DICHLORODIFLUOROMETHANE (F21)	G	1000	4200	1000	4200 GOOD HOUSEKEEPING (ATTAINABLE) PRACTICE	0- UP TO 3XPEL 5- ABOVE 3XPEL

OSHA/ACGIH SUBSTANCE TOXICITY REPORT
*** FILE SORTED BY SUBSTANCE ***

FIELD NO CODE SUBSTANCE	PHY ST	OSHA PEL PPH	MG/M3	ACGIH PEL PPH	MG/M3	HEALTH HAZARD CATEGORY	HEALTH HAZARD CLASSIFICATION
19 0900 DICHLOROTETRAFLUOROETHANE	0	1000	7000	1000	7000	GOOD HOUSEKEEPING (ATTAINABLE) PRACTICE	0- UP TO 3XPEL S- ABOVE 3XPEL
5 P0850 DICHLORVOS (DOVP)-SKIN	L	-	1	-	1	CHOLINESTERASE INHIBITION	0- UP TO 2XPEL S- ABOVE 2XPEL
5 ---- DICROTOPHOS (BIDRIN)-SKIN	L	NONE	NONE	P -	0.25	CHOLINESTERASE INHIBITION	S
3 ---- DICYCLOPENTADIENE	L	NONE	NONE	P 5	30	MILD IRRITATION - EYE, NOSE, THROAT /CUMULATIVE LIVER & KIDNEY DAMAGE	S
19 ---- DICYCLOPENTADIENYL-IRON	S	NONE	NONE	A -	10	GOOD HOUSEKEEPING PRACTICE	0
2 P0905 DIELDRIN-SKIN	S	-	0.25	-	0.25	CUMULATIVE LIVER DAMAGE/SUSPECT CARCINOGEN	S
13 0910 DIETHYLAMINE	L	25	75	25	75	MARKED IRRITATION - EYE, NOSE, THROAT, LUNGS, SKIN	S
13 0920 DIETHYLAMINOETHANOL-SKIN	L	10	50	10	50	MARKED IRRITATION - EYE, NOSE, THROAT	S
8 0921 DIETHYLENE TRIAMINE-SKIN	L	NONE	NONE	A 1	4	MARKED IRRITATION - EYE, NOSE, THROAT, LUNGS, SKIN/ASTHMA	S
15 ---- DIETHYLPHTHALATE	L	NONE	NONE	A 0.65	5	MILD IRRITATION - EYE, NOSE THROAT	0
3 0922 DIFLUORODIBROMOMETHANE	L	100	660	100	660	CUMULATIVE LIVER AND CNS DAMAGE	S
3 0923 DIGLYCIDYL ETHER (DGE)	L	C 0.5	2.8	C 0.5	2.8	MARKED IRRITATION - EYE, NOSE, THROAT, LUNGS, SKIN/ CUMULATIVE TOXICITY	S

OSHA/ACGIH SUBSTANCE TOXICITY REPORT
*** FILE SORTED BY SUBSTANCE ***

FIELD NO CODE SUBSTANCE	PHY ST	OSHA PEL PPM	ACGIH PEL PPM	HEALTH HAZARD CATEGORY	HEALTH HAZARD CLASSIFICATION
7 0924 DIISOBUTYL KETONE	L	50	A 25	150 MODERATE IRRITA- TION - EYE, NOSE, THROAT/NARCOISIS	0- UP TO 2XPEL S- ABOVE 2XPEL
13 0925 DIISOPROPYLAMINE-SKIN	L	5	5	20 MARKED IRRITATION- EYE, NOSE, THROAT, LUNGS	S
3 0927 DIMETHYL ACETAMIDE-SKIN	L	10	10	35 CUMULATIVE LIVER DAMAGE	S
1 0929 4-DIMETHYL AMINOAZOBENZENE	S	STD 1910.1015	NONE	NONE CANCER	S
2 0960 DIMETHYL SULFATE-SKIN	L	1	C 0.1	A2 ACUTE LUNG EFFECTS SUSPECT CARCINOGEN	S- AT CURRENT OSHA PEL
3 0928 DIMETHYLAMINE	O	10	10	18 MARKED IRRITATION - EYE, NOSE, THROAT, SKIN/CUMULATIVE LIVER DAMAGE	S
12 0931 DIMETHYLANILINE-SKIN	L	5	5	25 METHEMOGLOBINEMIA	0- UP TO 2XPEL S- ABOVE 2XPEL
3 0930 DIMETHYLFORMAMIDE-SKIN	L	10	10	30 CUMULATIVE LIVER DAMAGE	S
2 0940 1,1-DIMETHYLHYDRAZINE-SKIN	L	0.5	0.5	1 ACUTE CNS TOXICITY AND ANEMIA/SUSPECT CAPCINOGEN	S
19 0950 DIMETHYLPHTHALATE	L	-	-	5 GOOD HOUSEKEEPING PRACTICE	0
3 0975 DINITRO-O-CRESOL-SKIN	S	-	-	0.2 CUMULATIVE SYSTEMIC (METABOLIC) TOXIN	S
3 ----- 3,5-DINITRO-O-TOLUAMIDE (20ALENE)	S	NONE	A -	5 CUMULATIVE LIVER DAMAGE	0- UP TO 2XPEL S- ABOVE 2XPEL
4 0970 DINITROBENZENE(ALL ISOMERS)-SKIN	S	-	-	1 METHEMOGLOBINEMIA/ HIGH ACUTE TOXICITY	S
12 0970 DINITROTOLUENE-SKIN	S	-	-	1.5 METHEMOGLOBINEMIA/ ANEMIA	S

OSHA/ACGIH SUBSTANCE TOXICITY REPORT
*** FILE SORTED BY SUBSTANCE ***

FIELD NO CODE SUBSTANCE	PHY ST	OSHA PEL PPH	OSHA PEL MG/M3	ACGIH PEL PPH	HEALTH HAZARD CATEGORY	HEALTH HAZARD CLASSIFICATION
2 1010 DIOXANE TECHNICAL GRADE-SKIN	L	100	360	A 50	1A0 CUMULATIVE KIDNEY AND LIVER DAMAGE/ SUSPECT CARCINOGEN	S- AT CURRENT OSHA PEL
5 P2740 DIOXATHION (DELVAR)	L	NONE	NONE	P -	0.2 CHOLINESTERASE INHIBITION	0- UP TO 2XPEL S- ABOVE 2XPEL
3 0926 DIPHENYLAMINE	S	NONE	NONE	A -	10 CUMULATIVE LIVER, KIDNEY, BLADDER DAMAGE	S
3 1014 DIPROPYLENE GLYCOL METHYL ETHER SKIN	L	100	600	100	600 MODERATE IRRITATION EYE, NOSE, THROAT/ CUMULATIVE LIVER & LUNG DAMAGE	S
3 ----- DIOUAT	S	NONE	NONE	A -	0.5 CUMULATIVE EFFECTS ON EYES (CATARACTS)	S
4 ----- DISULFURAM	S	NONE	NONE	P -	2 ACUTE TOXICITY (ANTABUSE-LIKE EFFECTS)	0
5 P2680 DISYSTON-SKIN	S	NONE	NONE	A -	0.1 CHOLINESTERASE INHIBITION	S
19 ----- 2,6-DITERT-BUTYL-P-CRESOL	S	NONE	NONE	A -	10 GOOD HOUSEKEEPING PRACTICE	0
5 ----- DIFONATE	S	NONE	NONE	P -	0.1 CHOLINESTERASE INHIBITION	S
17 1016 EMERY	S	NONE	NONE	A -	10 "INERT" PARTICULATE (ACCUMULATION IN LUNGS)	0
3 2425 ENDOSULFAN (THIODAN)-SKIN	S	NONE	NONE	A -	0.1 ACUTE CNS TOXIN/ CUMULATIVE KIDNEY DAMAGE	S
2 P1017 ENDRIIN	S	-	0.1	-	0.1 ACUTE TOXICITY/ SUSPECT CARCINOGEN	S
3 0645 EPICHLORHYDRIN-SKIN	L	5	19	5	19 CUMULATIVE KIDNEY DAMAGE/MARKED SKIN IRRITATION	S

OSHA/ACGIH SUBSTANCE TOXICITY REPORT
*** FILE SORTED BY SUBSTANCE ***

FIELD NO CODE SUBSTANCE	PHY ST	OSHA PEL PPM MG/M3	ACGIH PEL PPM MG/M3	HEALTH HAZARD CATEGORY	HEALTH HAZARD CLASSIFICATION
5 P1014 EPN-SKIN	L	-	0.5	0.5 CHOLINESTERASE INHIBITION	0-UP TO 3XPEL 5-ABOVE 3XPEL
16 1025 ETHANE	G	NONE	A F	- SIMPLE ASPHYXIATION	0
3 1030 ETHANOLAMINE	L	3	6	6 CUMULATIVE LIVER, LUNG AND KIDNEY DAMAGE	5
5 P2750 ETHION (INHALATE)-SKIN	L	NONE	P -	0.4 CHOLINESTERASE INHIBITION	5
3 1033 2-ETHOXYETHANOL	L	200	A 100	370 CUMULATIVE BLOOD DAMAGE	5- AT CURRENT OSHA PEL
3 1037 2-ETHOXYETHYLACETATE-SKIN	L	100	100	540 CUMULATIVE KIDNEY DAMAGE	5
15 1040 ETHYL ACETATE	L	400	400	1600 MILD IRRITATION - EYE, NOSE, THROAT, LUNGS (UPPER)	0- UP TO 3XPEL 5- ABOVE 3XPEL
13 1050 ETHYL ACRYLATE-SKIN	L	25	25	100 MARKED IRRITATION - EYE, NOSE, THROAT, LUNGS	5
14 1060 ETHYL ALCOHOL	L	1000	1000	1900 MODEPATE IRRITA- TION - EYE, NOSE, THROAT	0-UP TO 5XPEL 5-ABOVE 5XPEL
14 1080 ETHYL BENZENE	L	100	100	435 MODERATE IRRITA- TION - EYE, NOSE, THROAT	0- UP TO 2XPEL 5- ABOVE 2XPEL
3 1090 ETHYL BROMIDE	L	200	200	890 NARCOSIS/CUMULATIVE LIVER, KIDNEY, AND HEART DAMAGE	5
7 1100 ETHYL BUTYL KETONE	L	50	50	230 MILD IRRITATION - EYE, NOSE, THROAT/ NARCOSIS	0- UP TO 3XPEL 5- ABOVE 3XPEL

OSHA/ACGIH SUBSTANCE TOXICITY REPORT
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FIELD NO CODE SUBSTANCE	PHY ST	OSHA PEL PPM	OSHA PEL MG/M3	ACGIH PEL PPM	HEALTH HAZARD MG/M3 CATEGORY	HEALTH HAZARD CLASSIFICATION
7 1110 ETHYL CHLORIDE	0	1000	2600	1000	2600 NARCOSIS	0- UP TO 5XPEL S- ABOVE 5XPEL
7 1210 ETHYL ETHER	L	400	1200	400	1200 MILD IRRITATION - EYE, NOSE, THROAT/ NARCOSIS	0- UP TO 2XPEL S- ABOVE 2XPEL
15 1155 ETHYL FORMATE	L	100	300	100	300 MILD IRRITATION - EYE, NOSE, THROAT	0- UP TO 2XPEL S- ABOVE 2XPEL
4 1220 ETHYL MERCAPTAN	L	C 10	25	A 0.5	1 ODOR/ACUTE SYSTEMIC TOXICITY	S- AT CURRENT OSHA PEL
14 1075 ETHYL SEC-AMYL KETONE	L	25	130	25	130 MODERATE IRRITA- TION - EYE, NOSE, THROAT	0- UP TO 2XPEL S- ABOVE 2XPEL
3 1230 ETHYL SILICATE	L	100	850	100	850 MILD IRRITATION - EYE, NOSE, THROAT/ CUMULATIVE KIDNEY DAMAGE	S
13 1070 ETHYLAMINE	L	10	18	10	18 MARKED IRRITATION - EYE, NOSE, THROAT, LUNGS	S
16 ----- ETHYLENE	G	NONE	NONE	A F	- SIMPLE ASPHYXIATION	0- AT OXYGEN LEVELS GREATER THAN 18% BY VOLUME
4 1120 ETHYLENE CHLOROHYDRIN-SKIN	L	5	16	P 1	3 ACUTE TOXICITY (LOCAL & SYSTEMIC)	S-AT CURRENT OSHA PEL AND ACGIH
14 1130 ETHYLENE DIAMINE	L	10	25	10	25 MODERATE IRRITA- TION - EYE, NOSE, THROAT, SKIN / CONTACT ALLERGY	0- UP TO 2XPEL S- ABOVE 2XPEL
3 1910 ETHYLENE GLYCOL DINITRATE-SKIN	L	C 0.2	1.2	C 0.2	1.2 CUMULATIVE EFFECT ON BLOOD PRESSURE, FIBRILLATION	S
3 1170 ETHYLENE GLYCOL MONOMETHYL ETHERACETATE-SKIN	L	25	120	25	120 CUMULATIVE CNS AND BLOOD (ANEMIA) EFFECTS	S

OSHA/ACGIH SUBSTANCE TOXICITY REPORT
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FIELD NO CODE SUBSTANCE	PHY ST	OSHA PEL PPM	MG/M3	ACGIH PEL PPM	MG/M3	HEALTH HAZARD CATEGORY	HEALTH HAZARD CLASSIFICATION
14 ----- ETHYLENE GLYCOL, PARTICULATE	L	NONE	NONE	A -	10	MODERATE IRRITATION - EYE, NOSE & THROAT	0- UP TO 2XPEL S- ABOVE 2XPEL
14 ----- ETHYLENE GLYCOL, VAPOR	VAP	NONE	NONE	A 100	250	MODERATE IRRITATION - EYE, NOSE, THROAT	0- UP TO 2XPEL S- ABOVE 2XPEL
3 1190 ETHYLENE OXIDE	O	50	90	50	90	CUMULATIVE LUNG LIVER & KIDNEY DAMAGE	S
1 C1175 ETHYLENEIMINE-SKIN	L	STD 1910.1012	0.5	0.5	1	CANCER	S
3 ----- ETHYLIDENE NORBORNENE	S	NONE	NONE	C A 5	25	MODERATE IRRITATION- EYE, NOSE, THROAT/ CUMULATIVE LIVER DAMAGE	S
14 1225 N-ETHYLmorpholine-SKIN	L	20	94	20	94	MODERATE IRRITATION- EYE, NOSE, THROAT	0-UP TO 2XPEL S-ABOVE 2XPEL
5 ----- FENSULFOTHION(DASANIT)	S	NONE	NONE	P -	0.1	CHOLINESTERASE INHIBITION	0-UP TO 5XPEL S-ABOVE 5XPEL
15 P1263 FERBAN	S	-	15	A -	10	MILD IRRITATION- EYE, NOSE, UPPER RESPIRATORY	0
14 1267 FERRO VANADIUM DUST	S	-	1	-	1	MODERATE IRRITATION- UPPER RESPIRATORY	0-(WIDE MARGIN OF SAFETY)
3 1280 FLUORIDE (AS F)	S	-	2.5	-	2.5	MARKED IRRITATION- EYE, NOSE, THROAT/ CUMULATIVE NOSE DAMAGE	S
10 1270 FLUORINE	G	0.1	0.2	A 1	2	MODERATE EDEMA- LUNGS	0-AT CURRENT OSHA PEL
6 1285 FLUOROTRICHloromethane(F11)	L	1000	5600	1000	5600	ACUTE CNS EFFECTS (MANIFESTED AS TREMORS)	0-UP TO 3XPEL S-ABOVE 3XPEL

OSHA/ACGIH SUBSTANCE TOXICITY REPORT
*** FILE SORTED BY SUBSTANCE ***

FIELD NO CODE SUBSTANCE	PHY ST	OSHA PEL PPM	ACGIH PEL PPM	HEALTH HAZARD CATEGORY	HEALTH HAZARD CLASSIFICATION
13 1290 FORMALDEHYDE	L	3	C A 2	3 MARKED IRRITATION- EYES, LUNGS, SKIN	S-AT CURRENT OSHA PEL
3 1300 FORMAMIDE	L	NONE	A 20	30 CUMULATIVE SYSTEMIC TOXICITY	S
13 1310 FORMIC ACID	L	5	5	9 MARKED IRRITATION- EYES, NOSE, THROAT LUNGS	S
14 1320 FURFURAL-SKIN	L	5	5	20 MODERATE IRRITATION- EYE, NOSE, THROAT	O-UP TO 2XPEL S-ABOVE 2XPEL
7 1330 FURFURYL ALCOHOL	L	50	A 5	20 MODERATE IRRITATION- EYES, LUNGS/NARCOSIS	S-AT CURRENT OSHA PEL
3 1340 GASOLINE	L	NONE	A -	82 MILD IRRITATION/ CUMULATIVE BLOOD EFFECTS	O-AS HEALTH HAZARD S-AS FLAMMA- BILITY HAZARD
4 1360 GERMANIUM TETRAHYDRIDE	G	NONE	A 0.2	0.6 ACUTE SYSTEMIC TOXICITY (HEMOLYSIS)	S
17 1300 GLASS, FIBROUS OR DUST	S	NONE	A -	10 "INERT" PARTICULATE (LUNG ACCUMULATION)/ SKIN IRRITATION	O
13 1350 GLUTARALDEHYDE	L	NONE	C P 2	8 MARKED IRRITATION- EYE, NOSE, THROAT SKIN/ALLERGY	S
13 1360 GLUTARALDEHYDE (ALKALINE ACTIVATED)	L	NONE	P -	0.25 MARKED IRRITATION- EYE, NOSE, THROAT, SKIN/ALLERGY	S
17 1363 GLYCERIN MIST	L	NONE	A -	10 "INERT" PARTICULATE (ACCUMULATION IN LUNGS)	O
7 1365 GLYCIDOL	L	50	50	150 MODERATE IRRITATION- EYE, NOSE, THROAT, SKIN/NARCOSIS	O-UP TO 2XPEL S-ABOVE 2XPEL

OSHA/ACGIH SUBSTANCE TOXICITY REPORT
 *** FILE SORTED BY SUBSTANCE ***

FILE NO	SUBSTANCE	PHY ST	OSHA PEL PPM	OSHA PEL MG/M3	ACGIH PEL PPM	ACGIH PEL MG/M3	HEALTH HAZARD CATEGORY	HEALTH HAZARD CLASSIFICATION
9	9090 GRAPHITE (NATURAL)	S	-	15 MPPCF	-	15 MPPCF	CUMULATIVE LUNG DAMAGE-SILICOSIS	S
9	1366 GRAPHITE (SYNTHETIC)	S	NONE	NONE	A -	10	CUMULATIVE LUNG DAMAGE-SILICOSIS	S
17	1367 GYPSUM	S	NONE	NONE	A -	10	"INERT" PARTICULATE (ACCUMULATION IN LUNGS)	O
3	1368 MAGNETIUM	S	-	0.5	-	0.5	CUMULATIVE LIVER DAMAGE	S
16	1400 HELIUM	O	NONE	NONE	A F	-	SIMPLE ASPHYXIAATION	O-IF OXYGEN IS GREATER THAN 18% BY VOLUME
2	P1369 HEPTACHLOR-SKIN	S	-	0.5	-	0.5	CUMULATIVE LIVER DAMAGE/SUSPECT CARCINOGEN	S
3	1371 HEPTANE	L	500	2000	P 400	1600	MODERATE IRRITATION-EYE, NOSE, LUNGS/ PLOYNEURITIS	S
3	----- HEXACHLOROCYCLOPENTADIENE	L	NONE	NONE	A 0.01	0.11	MARKED EDEMA-LUNGS/ CUMULATIVE (VARIED) ORGAN DAMAGE	S
3	1372 HEXACHLOROETHANE-SKIN	S	1	10	1	10	CUMULATIVE ORGAN DAMAGE (VAPOROUS)	S
3	P1373 HEXACHLORONAPHTHALENE-SKIN	S	-	0.2	-	0.2	CUMULATIVE LIVER DAMAGE	S
3	----- HEXAFLUOROACETONE	L	NONE	NONE	A 0.1	0.7	CUMULATIVE LUNG, KIDNEY, TESTES DAMAGE	S
7	1380 N-HEXANE	L	500	1800	P 100	360	NARCOSIS/ POLYNEURITIS	S-AT CURRENT OSHA PEL
3	1690 2-HEXANONE (MBK)-SKIN	L	100	410	P 25	100	MODERATE IRRITATION-EYE, NOSE, THROAT/ PERIPHERAL NEUROPATHY	S-AT CURRENT OSHA PEL

OSHA/ACGIH SUBSTANCE TOXICITY REPORT
*** FILE SORTED BY SUBSTANCE ***

FIELD NO CODE SUBSTANCE	PHY ST	OSHA PEL PPM	MG/M3	ACGIH PEL PPM	MG/M3	HEALTH HAZARD CATEGORY	HEALTH HAZARD CLASSIFICATION
14 1305 MEKONE (MIPK)-SKIN	L	100	410	100	410	Moderate Irritation- Eye, Nose, Throat	0-UP TO 2XPEL S-ABOVE 2XPEL
15 1367 HEXYLACETATE-SEC	L	50	300	50	300	MILD Irritation- Eye, Nose, Throat	0-UP TO 2XPEL S-ABOVE 2XPEL
7 ----- HEXYLENE GLYCOL	L	NONE	NONE	C A 25	125	MILD Irritation- Eye, Nose, Throat, SKIN/NAUCOSIS	0
2 1390 HYDRAZINE-SKIN	L	1	1.3	P 0.1	0.1	Marked Irritation/ Cumulative Liver Damage/Suspect Carcinogen	S
16 1410 HYDROGEN	G	NONE	NONE	A F	-	SIMPLE ASPHYXIATION	0-IF OXYGEN IS GREATER THAN 18% BY VOLUME
13 1420 HYDROGEN BROMIDE	G	3	10	3	10	Marked Irritation- Eye, Nose, Throat	S
13 1430 HYDROGEN CHLORIDE	G	C 5	7	C 5	7	Marked Irritation- Eye, Nose, Throat	S
4 1440 HYDROGEN CYANIDE-SKIN	G	10	11	10	11	Acute and Cumulative Systemic Toxicity (Cyanosis)	S
3 1460 HYDROGEN FLUORIDE	G	3	2	3	2	Marked Irritation- Eye, Nose, Throat, Lungs/Cumulative Bone Damage	S
13 1470 HYDROGEN PEROXIDE, 90%	L	1	1.4	1	1.4	Marked Irritation- Eye, Nose, Throat, SKIN	S
4 1475 HYDROGEN SELENIDE	G	0.05	0.2	0.05	0.2	Marked Acute Lung Damage and Systemic Toxicity	S
4 1480 HYDROGEN SULFIDE	G	C 20	30	A 10	15	Marked Irritation Eye (Conjunctivitis), Lungs/Acute Systemic Toxicity	S-AT CURRENT OSHA PEL AND ACCIR

OSHA/ACGIH SUBSTANCE TOXICITY REPORT
 *** FILE SORTED BY SUBSTANCE ***

FILED NO CODE SUBSTANCE	PHY ST	OSHA PPL PPM	OSHA PPL MG/MT	ACGIH PEL PPM	HEALTH HAZARD CATEGORY	HEALTH HAZARD CLASSIFICATION
3 ----- HYDROGENATED TERPENEYLS	S	NONE	NONE	P 0.5	S CUMULATIVE LIVER, KIDNEY, LUNG DAMAGE	S
3 ----- HYDROQUINONE	S	-	2	-	2 CUMULATIVE CORNEAL (EYE) DAMAGE	S
4 1500 INDENE	L	NONE	NONE	A 10	45 MARKED IRRITATION- EYE, NOSE, THROAT/ ACUTE SYSTEMIC TOXICITY	S
10 1510 INDIUM & COMPOUNDS, AS IN	S	NONE	NONE	A -	0.1 CUMULATIVE LUNG DAMAGE	S
13 1515 IODINE	S	C 0.1	1	C 0.1	1 MARKED IRRITATION- EYE, NOSE, THROAT, LUNGS	S
4 ----- IODOFORM	S	NONE	NONE	P 0.2	3 MODERATE IRRITATION- EYE, NOSE, THROAT, LUNGS/ACUTE CNS EFFECTS	S
2 1520 IRON OXIDE FUME	FUM	-	10	A B 4	5 LUNG CHANGES (SIDEROSIS)/ SUSPECT CARCINOGEN (HAEMATITE MINES)	S-AT CURRENT OSHA PEL
4 1520 IRON PENTACARBONYL	L	NONE	NONE	A 0.01	0.00 ACUTE TOXICITY(CNS)	S
14 1520 IRON SALTS, SOLUBLE, AS FE	S	NONE	NONE	A -	1 MODERATE IRRITATION- UPPER RESPIRATORY TRACT, SKIN	O-UP TO 2XPEL S-ABOVE 2XPEL
14 1530 ISOAMYL ACETATE	L	100	525	100	525 MODERATE IRRITATION- UPPER RESPIRATORY TRACT	O-UP TO 2XPEL S-ABOVE 2XPEL
7 1532 ISOAMYL ALCOHOL	L	100	360	100	360 MILD IRRITATION- EYE, NOSE, THROAT/ NARCOSIS	O-UP TO 2XPEL S-ABOVE 2XPEL
15 1534 ISOBUTYL ACETATE	L	150	700	150	700 MILD IRRITATION- EYE, NOSE, THROAT	O-UP TO 3XPEL S-ABOVE 3XPEL

OSHA/ACGIH SUBSTANCE TOXICITY REPORT
*** FILE SORTED BY SUBSTANCE ***

FILED NO CODE SUBSTANCE	PHY ST	OSHA PEL PPM	MG/H3	ACGIH PEL PPM	HEALTH HAZARD CATEGORY	HEALTH HAZARD CLASSIFICATION
15 1536 ISOBUTYL ALCOHOL	L	100	300	P 50	150 MILD IRRITATION- EYE, NOSE, THROAT	O-UP TO 2XPEL S-ABOVE 2XPEL
7 1538 ISOPHORONE	L	25	140	P C 5	25 MARKED IRRITATION- EYE, NOSE, THROAT/ NARCOSIS (FATIGUE AND MALAISE)	S-AT CURRENT OSHA PEL
8 ----- ISOPHORONE DIISOCYANATE-SKIN	L	NONE	NONE	P 0.01	0.06 MARKED IRRITATION- EYE, NOSE, THROAT, LUNGS, SKIN/ALLERGY	S
15 1540 ISOPROPYL ACETATE	L	250	950	250	950 MILD IRRITATION- EYE, NOSE, THROAT	O-UP TO 2XPEL S-ABOVE 2XPEL
7 1560 ISOPROPYL ALCOHOL-SKIN	L	400	980	400	980 MILD IRRITATION- EYE, NOSE, THROAT/ NARCOSIS	S
13 1562 ISOPROPYL AMINE	L	5	12	5	12 MARKED IRRITATION- EYE, NOSE, THROAT, LUNGS	O-UP TO 2XPEL S-ABOVE 2XPEL
15 1565 ISOPROPYL ETHER	L	500	2100	A 250	1050 MILD IRRITATION- EYE, NOSE, THROAT	O-AT CURRENT OSHA PEL
9 1567 ISOPROPYL GLYCIDYL ETHER (IGE)	L	50	240	50	240 MODERATE IRRITATION- EYE, NOSE, THROAT/ CUMULATIVE LUNG DAMAGE	O-UP TO 2XPEL S-ABOVE 2XPEL
17 ----- KAOLIN	S	NONE	NONE	A -	10 "INERT" PARTICULATE (ACCUMULATION IN LUNGS)	0
13 ----- KETENE	0	0.5	0.9	0.5	0.9 MARKED IRRITATION- LUNGS (EDEMA)	S
2 1590 LEAD ARSENATE, AS PB	S	-	0.15	-	0.15 CUMULATIVE INTOX- ICATION (VAPORIZED/ SUSPECT CARCINOGEN)	S
3 1590 LEAD, INORG., FUMES & DUSTS, AS PB	S	-	0.2	A -	0.15 CUMULATIVE INTOX- ICATION (BLOOD, NEUROLOGIC)	S

OSHA/ACGIH SUBSTANCE TOXICITY REPORT
 *** FILE SORTED BY SUBSTANCE ***

FILED NO CODE	SUBSTANCE	PHY ST	OSHA PEL PPM	ACGIH PEL PPM	HEALTH HAZARD CATEGORY	HEALTH HAZARD CLASSIFICATION
17 1593	LIMESTONE	S	NONE	A -	10 "INERT" PARTICULATE (ACCUMULATION IN LUNGS)	0
2 P1595	LINDANE-SKIN	S	-	-	0.5 CUMULATIVE LIVER & CNS DAMAGE/ SUSPECT CARCINOGEN	S
13 1503	LITHIUM HYDRIDE	S	-	-	0.025 MARKED IRRITATION- EYE, NOSE, THROAT	S
7 1830	LPG (LIQUIFIED PETROLEUM GAS)	0	1000	1000	1000 NARCOSIS	0-UP TO 2XPEL 5-ABOVE 2XPEL
17 1615	MAGNESITE	S	NONE	A -	10 "INERT" PARTICULATE (ACCUMULATION IN LUNGS)	0
17 1610	MAGNESIUM OXIDE FUME	S	-	A -	10 "INERT" PARTICULATE (ACCUMULATION IN LUNGS/FINE FEVER	0
5 P1616	MALATHION-SKIN	L	-	-	15 CHOLINESTERASE INHIBITION	0-UP TO 2XPEL 5-ABOVE 2XPEL
8 1618	MALEIC ANHYDRIDE	S	0.25	0.25	1 MARKED IRRITATION- EYE, NOSE, THROAT, LUNGS, SKIN/CONTACT ALLERGY/ASTHMA	S
3 1620	MANGANESE AND COMPOUNDS	S	C -	C -	5 CUMULATIVE CNS DAMAGE	S
3 -----	MANGANESE CYCLOPENTADIENYL TRICARBONYL	S	NONE	A -	0.1 CUMULATIVE KIDNEY AND CNS DAMAGE	S
17 -----	MARBLE	S	NONE	A -	10 "INERT" PARTICULATE (ACCUMULATION IN LUNGS)	0
3 1630	MERCURY (ALKYL COMPOUNDS)-SKIN AS Hg	VAR	C 0.04	A 0.001	0.01 CUMULATIVE CNS DAMAGE	S
3 1630	MERCURY (INORGANIC) AS Hg-SKIN	VAR	-	A -	0.05 CUMULATIVE CNS DAMAGE	S

OSHA/ACGIH SUBSTANCE TOXICITY REPORT
*** FILE SORTED BY SUBSTANCE ***

FIELD NO	CODE	SUBSTANCE	PHY ST	OSHA PEL PPM	MG/M3	ACGIH PEL PPM	MG/M3	HEALTH HAZARD CATEGORY	HEALTH HAZARD CLASSIFICATION
13	1635	MESITYL OXIDE	L	25	100	25	100	MARKED IRRITATION- EYE, NOSE, THROAT	0-UP TO 2XPEL 5-ABOVE 2XPEL
16	1640	METHANE	G	NONE	NONE	A F	-	SIMPLE ASPHYXIATION	0-IF OXYGEN IS GREATER THAN 18% BY VOLUME
5	-----	METHOMYL (LANNATE)	S	NONE	NONE	A -	2.5	CHOLINESTERASE INHIBITION	0-UP TO 3XPEL 5-ABOVE 3XPEL
4	1646	METHOXYCHLOR	S	-	15	A	10	ACUTE SYSTEMIC TOXICITY (LOW)	0-UP TO 3XPEL 5-ABOVE 3XPEL
3	0590	2-METHOXYETHANOL-SKIN (METHYL CELLULOSE)	L	25	80	25	80	CUMULATIVE CNS, KIDNEY AND LIVER DAMAGE	S
14	1735	METHYL 2-CYANOACRYLATE	L	NONE	NONE	A 2	8	MODERATE IRRITATION- EYE, NOSE, THROAT	0-UP TO 2XPEL 5-UP TO 2XPEL
15	1650	METHYL ACETATE	L	200	610	200	610	MILD IRRITATION- EYE, NOSE, THROAT, LUNGS/METHANOL TOXICITY	S-ABOVE 200PPM
19	1651	METHYL ACETYLENE	G	1000	1650	1000	1650	GOOD HOUSEKEEPING PRACTICE ("INERT" VAPOR)	0
19	1652	METHYL ACETYLENE-PROPADIENE MIX (HAPP)	G/L	1000	1800	1000	1800	GOOD HOUSEKEEPING PRACTICE ("INERT" VAPOR)	0
13	1653	METHYL ACRYLATE-SKIN	L	10	35	10	35	MARKED IRRITATION- EYE, NOSE, THROAT, SKIN	0-UP TO 3XPEL 5-ABOVE 3XPEL
3	-----	METHYL ACRYLONITRILE-SKIN	L	NONE	NONE	A 1	3	ACUTE TOXICITY/ CUMULATIVE LIVER & CNS DAMAGE	0-UP TO 3XPEL 5-ABOVE 3XPEL
4	1660	METHYL ALCOHOL-SKIN	L	200	260	200	260	ACUTE TOXICITY (NARCOSIS, EYE DAMAGE)	0-UP TO 1.5XPEL 5-ABOVE 1.5XPEL

OSHA/ACGIH SUBSTANCE TOXICITY REPORT
 *** FILE SORTED BY SUBSTANCE ***

FIELD NO	CODE	SUBSTANCE	PHY ST	OSHA PEL PPH	MG/M3	ACGIH PEL PPH	MG/M3	HEALTH HAZARD CATEGORY	HEALTH HAZARD CLASSIFICATION
13	1665	METHYL AMINE	G	10	12	10	12	MARKED IRRITATION- EYE, NOSE, THROAT, SKIN	S
6	1680	METHYL BROMIDE-SKIN	G	C 20	80	A 15	60	MARKED EDEMA-LUNGS/ CNS DAMAGE	S
6	1710	METHYL CHLORIDE	G	100	210	100	210	ACUTE AND CHRONIC CNS EFFECTS	S
15	1720	METHYL CHLOROFORM	L	350	1900	350	1900	MILD IRRITATION- EYE, NOSE, THROAT	O-UP TO 2XPEL S-ABOVE 2XPEL
1	C2640	METHYL CHLOROMETHYL ETHER	L	STD 1910.1006		NONE	NONE	CANCER (LUNG)	S
7	1740	METHYL CYCLOHEXANE	L	500	2000	P 400	1600	MILD IRRITATION- EYE, NOSE, THROAT/ NARCOSIS	O-UP TO 2XPEL S-ABOVE 2XPEL
3	1760	METHYL CYCLOHEXANOL	L	100	470	A 50	235	NARCOSIS/CUMULATIVE LIVER AND KIDNEY DAMAGE	S
7	1765	O-METHYL CYCLOHEXANONE-SKIN	L	100	460	50	230	MODERATE IRRITATION- EYE, NOSE, THROAT/ NARCOSIS	S-AT CURRENT OSHA PEL
13	-----	METHYL ETHYL KETONE PEROXIDE	L	NONE	NONE	C A 0.2	1.5	MARKED IRRITATION- EYE, NOSE, THROAT, LUNGS	S-ABOVE CEILING LIMIT
14	1770	METHYL FORMATE	L	100	250	100	250	MODERATE IRRITATION- EYE, NOSE, THROAT, LUNGS	O-UP TO 3XPEL S-ABOVE 3XPEL
3	1772	METHYL IODIDE-SKIN	L	5	28	5	28	CUMULATIVE CNS DAMAGE	S
14	-----	METHYL ISOBUTYL KETONE	L	NONE	NONE	A 100	475	MODERATE IRRITATION- EYE, NOSE, THROAT	O-UP TO 2XPEL S-ABOVE 2XPEL
13	1670	METHYL ISOBUTYL CARBINOL-SKIN	L	25	100	25	100	MARKED IRRITATION- EYE, NOSE, THROAT	O-UP TO 2XPEL S-ABOVE 2XPEL

OSHA/ACGIH SUBSTANCE TOXICITY REPORT
 *** FILE SORTED BY SUBSTANCE ***

FIELD NO	SUBSTANCE	PHY ST	OSHA PEL PPH	OSHA PEL MG/M3	ACGIH PEL PPH	HEALTH HAZARD CATEGORY	HEALTH HAZARD CLASSIFICATION
8	1773 METHYL ISOCYANATE-SKIN	L	0.02	0.05	0.02	0.05 MARKED IRRITATION- EYE, NOSE, THROAT, SKIN, LUNGS/ASTHMA	S
14	1643 METHYL MERCAPTAN	L	C 10	20	A 0.5	1 ODOR/MODERATE IRRITATION-EYE, NOSE, THROAT	S-AT CURRENT OSHA PEL
15	1774 METHYL METHACRYLATE	L	100	410	100	410 MILD IRRITATION- EYE, NOSE, THROAT	0-UP TO 2XPEL S-ABOVE 2XPEL
7	1675 METHYL N-AMYL KETONE	L	100	465	100	465 MODERATE IRRITATION- EYE, NOSE, THROAT /NARCOSIS	0-UP TO 3XPEL S-ABOVE 3XPEL
5	1775 METHYL PARATHION-SKIN	S	NONE	NONE	A -	0.2 CHOLINESTERASE INHIBITION	0-UP TO 3XPEL S-ABOVE 3XPEL
13	1777 METHYL SILICATE	S	NONE	NONE	C A 5	30 MARKED IRRITATION- EYE, NOSE, THROAT, LUNGS	S-ABOVE CEILING LIMIT
3	1655 METHYLAL	L	1000	3100	1000	3100 CUMULATIVE SYSTEMIC TOXICITY	0-UP TO 3XPEL S-ABOVE 3XPEL
3	----- METHYLCYCLOPENTADIENYL MANGANESE TRICARB	S	NONE	NONE	A 0.1	0.2 CUMULATIVE KIDNEY & CNS DAMAGE	S
5	----- METHYLOXETON-SKIN	S	NONE	NONE	A -	0.5 CHOLINESTERASE INHIBITION	S
8	----- METHYLENE BIS (4-CYCLOHEXYLISOCYANATE)	S	NONE	NONE	A C 0.01	0.11 MARKED IRRITATION OF SKIN/ASTHMA	S
1	C2650 4,4-METHYLENE BIS(2-CHLOROPHENYL) (MOCA)	S	STD 1910.1005		NONE	NONE CANCER	S
8	1073 METHYLENE BISPHENYL ISOCYANATE (MDI)	S	C 0.02	0.2	C 0.02	0.2 MARKED IRRITATION- EYE, NOSE, THROAT, SKIN/ASTHMA	S-ABOVE CEILING LIMIT
7	1730 METHYLENE CHLORIDE	L	500	1800	P 200	720 NARCOSIS/CHRONIC SYSTEMIC TOXICITY (METABOLIC CONVER- SION TO CO)	S-AT CURRENT OSHA PEL

OSHA/ACGIH SUBSTANCE TOXICITY REPORT
 *** FILE SORTED BY SUBSTANCE ***

FILE NO	SUBSTANCE	PHY ST	OSHA PEL PPM	ACGIH PEL PPM	HEALTH HAZARD CATEGORY	HEALTH HAZARD CLASSIFICATION
9	MICA	S	20 MPPCF	20 MPPCF	PNEUMOCONIOSIS (ACCUMULATION IN LUNGS)	0
17	MINERAL WOOL FIBER	S	NONE	A	10 "INERT" PARTICULATE	0
3	1790 MOLYBDENUM, AS MO (INSOLUBLES)	S	-	A -	10 CUMULATIVE SYSTEMIC TOXICITY/LIVER AND KIDNEYS	S
3	1790 MOLYBDENUM, AS MO (SOLUBLES)	S	-	-	5 CUMULATIVE SYSTEMIC TOXICITY/LIVER AND KIDNEYS	S
5	P2690 MONOCROTOPHOS (AZODRIN)	S	NONE	P -	0.25 CHOLINESTERASE INHIBITION	S
2	1794 MONOMETHYL HYDRAZINE-SKIN	L	C 0.2	C 0.2	0.35 ACUTE LUNG, CNS AND BLOOD DAMAGE/SUSPECT CARCINOGEN	S-ABOVE CEILING LIMIT
12	1972 MONOMETHYLANILINE-SKIN	L	2	2	9 METHEMOGLOBINEMIA	S
14	1797 MORPHOLINE-SKIN	L	20	20	70 MODERATE IRRITATION-EYE, NOSE, THROAT	0-UP TO 2X PEL S-ABOVE 2X PEL
7	0710 NAPHTHA (COAL TAR)	L	100	100	400 MODERATE IRRITATION-EYE, NOSE, THROAT/NAUSEA	0-UP TO 3X PEL S-ABOVE 3X PEL
11	1810 NAPHTHALENE	S	10	10	50 MARKED IRRITATION-EYE, NOSE, THROAT/ANEMIA	S
16	1850 NEON	0	NONE	A F	- SIMPLE ASPHYXIATION	0-IF OXYGEN IS GREATER THAN 18% BY VOLUME
2	1840 NICKEL (SOLUBLE COMPOUNDS)	S	-	P -	0.1 CUMULATIVE LUNG DAMAGE/SUSPECT CARCINOGEN	S
2	1841 NICKEL CARBONYL	L	0.001	P 0.05	0.035 ACUTE SYSTEMIC TOXICITY/SUSPECT CARCINOGEN	S

OSHA/ACGIH SUBSTANCE TOXICITY REPORT
*** FILE SORTED BY SUBSTANCE ***

FIELD NO CODE SUBSTANCE	PHY ST	OSHA PEL PPH	MG/M3	ACGIH PEL PPH	MG/M3	HEALTH HAZARD CATEGORY	HEALTH HAZARD CLASSIFICATION
2 1840 NICKEL, METAL & INSOLUBLE COMPOUNDS	S	-	1	-	1	CUMULATIVE LUNG DAMAGE/SUSPECT CARCINOGEN	S
4 1855 NICOTINE-SKIN	L	-	0.5	-	0.5	ACUTE SYSTEMIC TOXICITY	O-UP TO 2XPEL S-ABOVE 2XPEL
13 1860 NITRIC ACID	L	2	5	2	5	MARKED IRRITATION- EYE, NOSE, THROAT, SKIN	O-UP TO 5XPEL S-ABOVE 5XPEL
6 1890 NITRIC OXIDE	G	25	30	25	30	METHEMOGLOBINEMIA/ CNS EFFECTS	O-UP TO 2XPEL S-ABOVE 2XPEL
3 1865 P-NITROANILINE-SKIN	S	1	6	1	6	METHEMOGLOBINEMIA/ CUMULATIVE LIVER DAMAGE	S
12 1870 NITROBENZENE-SKIN	L	1	5	1	5	METHEMOGLOBINEMIA	O-UP TO 3XPEL S-ABOVE 3XPEL
1 1875 4-NITROBIPHENYL	S	STD 1910.1003		A18		CANCER-BLADDER	S
12 1872 P-NITROCHLOROBENZENE-SKIN	S	-	1	-	1	METHEMOGLOBINEMIA	O-UP TO 2XPEL S-ABOVE 2XPEL
7 1880 NITROETHANE	L	100	310	100	310	MODERATE IRRITATION/ NARCOSIS	O-UP TO 3XPEL S-ABOVE 3XPEL
16 1900 NITROGEN	G	NONE	NONE	F		SIMPLE ASPHYXIAATION	O-IF OXYGEN IS GREATER THAN 18% BY VOLUME
10 1903 NITROGEN DIOXIDE	G	5	9	A C 5		CUMULATIVE LUNG DAMAGE (BRONCHI- TIS AND EMPHYSEMA)	S
3 1907 NITROGEN TRIFLUORIDE	G	10	29	10	29	METHEMOGLOBINEMIA/ CUMULATIVE LIVER & KIDNEY DAMAGE	S
3 1912 NITROGLYCERIN-SKIN	L	C 0.2	2	C 0.2		CUMULATIVE EFFECT ON BLOOD PRESSURE, FIBRILLATION	S-ABOVE CULING LIMIT

ACCIDENT SUBSTANCE TOXICITY REPORT
 AND (IF KNOWN) BY SUBSTANCE

FILE NO	ACCIDENT SUBSTANCE	PHY ST	OSHA PEL PPM	ACGIH PEL PPM	HEALTH HAZARD CATEGORY	HEALTH HAZARD CLASSIFICATION
7	1920 NITROBENZENE	L	100	250	250 MARKED IRRITATION- EYE, NOSE, THROAT/ MUCOSIS	0-UP TO 2X PEL 5-ABOVE 2X PEL
10	1960 1-NITROPROPANE	L	25	90	90 MODERATE IRRITATION- EYE, NOSE, THROAT/ CUMULATIVE LIVER DAMAGE	5
10	1960 2-NITROPROPANE	L	25	90	90 MODERATE IRRITATION- EYE, NOSE, THROAT/ CUMULATIVE LIVER DAMAGE	5
11	1962 0-NITROSONITROETHYLENE-SKIN	L	STD 1910, 1016		A 2 CANCER	5
12	1965 NITROTOLUENE-SKIN	L	5	30	30 METHEMOGLOBINEMIA	0-UP TO 2X PEL 5-ABOVE 2X PEL
14	1953 NITROUS OXIDE	G	NONE	NONE	A F - SIMPLE ASPHYXIA	0-IF OXYGEN IS GREATER THAN 18% BY VOLUME
14	1955 OCTACHLORO NAPHTHALENE-SKIN	L	NONE	NONE	1050 0002/UNKNOWN TOXIC POTENTIAL (OCTANE ANALOGY)	0
15	1957 OCTANE	L	500	2350	0.1 CUMULATIVE LIVER DAMAGE	5
16	1910 OIL MIST, PARTICULATE	S	-	-	1450 0100	0
17	1910 OIL MIST, VAPOR	VAP	NONE	NONE	5 GOOD HOUSEKEEPING PRACTICE	0
18	1960 OSMIUM TETROXIDE, AS OS	S	-	0.002	- GOOD HOUSEKEEPING PRACTICE	0
19	1960 OXALIC ACID	S	-	-	0.002 MARKED IRRITATION- EYE, NOSE, THROAT, LUNGS	5
		S	-	-	1 MARKED IRRITATION- EYE, NOSE, THROAT, SKIN	5

OSHA/ACGIH SUBSTANCE TOXICITY REPORT
*** FILE SORTED BY SUBSTANCE ***

FIELD NO CODE SUBSTANCE	PHY ST	OSHA PEL PPM	ACGIH PEL PPM	HEALTH HAZARD CATEGORY	HEALTH HAZARD CLASSIFICATION
3 1975 OXYGEN DIFLUORIDE	G	0.05	0.1	0.1 MARKED EDEMA-LUNGS/ CUMULATIVE KIDNEY DAMAGE	S
3 1980 OZONE	G	0.1	0.2	0.2 MARKED IRRITATION- LUNGS/CUMULATIVE RADIOMETRIC (AGING) EFFECTS	S
15 ----- PARAFFIN WAX FUME	S	NONE	NONE	2 MILD IRRITATION- EYE, NOSE, THROAT	0
3 1982 PARAQUAT-SKIN	S	-	0.5	0.5 CUMULATIVE SYSTEMIC & LUNG DAMAGE	S
5 1984 PARATHION-SKIN	L	-	0.11	0.11 CHOLINESTERASE INHIBITION	S
3 1986 PENTABORANE	L	0.005	0.01	0.01 CUMULATIVE CNS DAMAGE	S
3 1988 PENTACHLORONAPHTHALENE-SKIN	S	-	0.5	0.5 CUMULATIVE LIVER DAMAGE & CHLORACNE	S
4 1989 PENTACHLOROPHENOL-SKIN	S	-	0.5	0.5 ACUTE SYSTEMIC TOXICITY & VAS- CULAR INJURY	S
17 1987 PENTAERYTHRITOL	S	NONE	NONE	10 "INERT" PARTICULATE (ACCUMULATION IN LUNGS)	0
7 1990 PENTANE	L	1000	2950	1800 MILD IRRITATION/ NARCOSIS	0
7 2010 2-PENTANONE	L	200	700	700 MARKED IRRITATION- EYE, NOSE, THROAT/ NARCOSIS	0-UP TO 2XPEL S-ABOVE 2XPEL
3 2020 PERCHLOROETHYLENE-SKIN	L	100	670	670 CUMULATIVE LIVER & CNS DAMAGE	S
13 2030 PERCHLOROMETHYLMERCAPTAN	L	0.1	0.8	0.8 MARKED IRRITATION- EYE, NOSE, THROAT	S

OSHA/ACGIH SUBSTANCE TOXICITY REPORT
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FIELD NO CODE SUBSTANCE	PHY ST	OSHA PEL PPM	MG/M3	ACGIH PEL PPM	MG/M3	HEALTH HAZARD CATEGORY	HEALTH HAZARD CLASSIFICATION
3 2033 PERCHLORYL FLUORIDE	G	3	13.5	3	13.5	MODERATE IRRITATION- EYE, NOSE, THROAT/ CUMULATIVE BONE DAMAGE	S
17 ----- PERLITE	S	NONE	NONE	P -	10	"INERT" PARTICULATE (ACCUMULATION IN LUNGS)	O
7 2037 PETROLEUM DISTILLATES-(NAPHTHA)	L	500	2000	A,B 3	-	MODERATE IRRITATION/ NARCOSIS	O-(DEPENDING UPON MIXTURE OF AROMATICS)
3 2040 PHENOL-SKIN	S	5	19	5	19	MARKED IRRITATION- EYE, NOSE, THROAT, LUNGS/CUMULATIVE LIVER, LUNG KIDNEY DAMAGE	S
14 ----- PHENOTHAZINE-SKIN	S	NONE	NONE	A -	5	MODERATE IRRITATION- SKIN/PHOTOSENSITIZA- TION - SKIN	O-UP TO 2XPEL S-ABOVE 2XPEL
14 2047 PHENYL ETHER (VAPOR)	L	1	7	1	7	MODERATE IRRITATION- EYE, NOSE, THROAT	O-UP TO 2XPEL S-ABOVE 2XPEL
14 2053 PHENYL ETHER-DIPHENYL MIX (VAPOR)	L	1	7	1	7	MODERATE IRRITATION- EYE, NOSE, THROAT	O-UP TO 2XPEL S-ABOVE 2XPEL
8 2042 P-PHENYLENE DIAMINE-SKIN	S	-	0.1	-	0.1	RESPIRATORY SENSITI- ZATION-ASTHMA	S
7 2057 PHENYLGLYCIDYL ETHER (PGE)	L	10	60	10	60	MODERATE IRRITATION- EYE, NOSE, THROAT/ NARCOSIS	O-UP TO 2XPEL S-ABOVE 2XPEL
11 2060 PHENYLHYDRAZINE-SKIN	L	5	22	5	22	HEMOLYTIC ANEMIA/ SKIN IRRITATION	S
3 ----- PHENYLPHOSPHINE	L	NONE	NONE	C 0.05	0.25	CUMULATIVE BLOOD DAMAGE (ANEMIA)	S-ABOVE CEILING LIMIT
5 ----- PHORATE (THIMET)-SKIN	L	NONE	NONE	A -	0.05	CHOLINESTERASE INHIBITION	S

OSHA/ACGIH SUBSTANCE TOXICITY REPORT
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FIELD NO CODE SUBSTANCE	PHY ST	OSHA PEL PPM	ACGIH PEL PPM	HEALTH HAZARD CATEGORY	HEALTH HAZARD CLASSIFICATION
5 P2065 PHOSORIN (MEVINPHOS)-SKIN	L	-	0.1	0.1 CHOLINESTERASE INHIBITION	S
10 2070 PHOSGENE	G	0.1	0.05	0.2 MARKED EDEMA-LUNGS	S-AT CURRENT OSHA PEL
4 2080 PHOSPHINE	G	0.3	0.3	0.4 ACUTE SYSTEMIC TOXICITY	S
13 2085 PHOSPHORIC ACID	L	-	-	1 MARKED IRRITATION- EYE, NOSE, THROAT	0-UP TO 2XPEL S-ABOVE 2XPEL
3 2090 PHOSPHORUS (YELLOW)	S	-	-	0.1 CUMULATIVE HONE AND LIVER DAMAGE	S
10 2091 PHOSPHORUS PENTACHLORIDE	S	-	-	1 MARKED IRRITATION & DAMAGE TO LUNGS (EDEMA)	S
13 2092 PHOSPHORUS PENTASULFIDE	S	-	-	1 MARKED IRRITATION & H2S HAZARD	S
13 2093 PHOSPHORUS TRICHLORIDE	L	0.5	0.5	3 MARKED IRRITATION- EYE, NOSE, THROAT, LUNGS	S
8 2110 PHTHALIC ANHYDRIDE	S	2	P 1	4 MARKED IRRITATION- EYE, NOSE, THROAT, LUNGS/ASTHMA	S
17 ----- M-PHTHALODINITRILE	S	NONE	P -	5 "INERT" PARTICULATE (LOW TOXICITY)	0
17 ----- PICLORAH (TORDON)	S	NONE	A -	10 "INERT" PARTICULATE (LOW TOXICITY)	0
3 2120 PICRIC ACID-SKIN	S	-	-	0.1 CUMULATIVE KIDNEY, LIVER & HBC DAMAGE/ DERMATITIS	S
3 P2125 PIVAL	S	-	-	0.1 CUMULATIVE ANTI- COAGULANT EFFECTS (WARFARIN ANALOGY)	S

OSHA/ACGIH SUBSTANCE TOXICITY REPORT
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FILED NO CODE SUBSTANCE	PHY ST	OSHA PPM	PEL MG/M3	ACGIH PPM	PEL MG/M3	HEALTH HAZARD CATEGORY	HEALTH HAZARD CLASSIFICATION
17 2127 PLASTER OF PARIS	S	NONE	NONE	A -	10 "INERT" PARTICULATE (ACCUMULATION IN LUNGS)	0	
8 2130 PLATINUM (SOLUBLE SALTS) AS PT.	S	-	0.002	-	0.002 RESPIRATORY SENSITIZATION (ASTHMA)	S	
4 2135 POLYTETRAFLUOROETHYLENE DECOMP. PRODUCTS	VAR	NONE	NONE	A -	B 1 ACUTE TOXIC EFFECTS (POLYMER FUME FEVER)	S	
17 0577 PORTLAND CEMENT	S		50 MPPCF	30 MPPCF	"INERT" PARTICULATE (ACCUMULATION IN LUNGS)	0-IF QUARTZ CONTENT<1% S-OTHERWISE	
13 2140 POTASSIUM HYDROXIDE	S	NONE	NONE	C A -	2 MARKED IRRITATION- EYE, NOSE, THROAT, LUNGS, SKIN	S-ABOVE CEILING LIMIT	
7 2150 PROPANE	G	1000	1800	A F	- NARCOSIS/ ASPHYXIATION	0	
13 2167 PROPARGYL ALCOHOL-SKIN	L	1	2	1	2 MARKED IRRITATION- EYE, NOSE, THROAT, SKIN	S	
15 2180 N-PROPYL ACETATE	L	200	840	200	840 MILD IRRITATION- EYE, NOSE, THROAT	0	
15 2170 PROPYL ALCOHOL-SKIN	L	200	500	200	500 MILD IRRITATION- EYE, NOSE, THROAT	0	
3 2185 N-PROPYL NITRATE	L	25	110	25	110 CUMULATIVE SYSTEMIC EFFECTS (METHEMO- GLOBINEMIA, HYPO- TENSION)	S	
3 2190 PROPYLENE DICHLORIDE	L	75	350	75	350 CUMULATIVE LIVER DAMAGE	S	
3 1,2-PROPYLENE GLYCOL DINITRATE-SKIN	L	NONE	NONE	P 0.05	0.35 CUMULATIVE BLOOD PRESSURE & CNS CHANGES (HEADACHE), FIBRILLATION	S	

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FIELD NO CODE SUBSTANCE	PHY ST	OSHA PEL PPM	ACGIH PEL PPM	HEALTH HAZARD CATEGORY	HEALTH HAZARD CLASSIFICATION
18 --- PROPYLENE GLYCOL MONOMETHYL ETHER	L	NONE	A 100	350 0000	0-UP TO 2XPEL S-ABOVE 2XPEL
4 2213 PROPYLENE IMINE-SKIN	L	2	2	5 MODERATE IRRITATION- EYE, NOSE, THROAT/ ACUTE TOXICITY	S
3 2215 PROPYLENE OXIDE	L	100	100	240 CUMULATIVE CNS, KIDNEY & LIVER DAMAGE	S
15 P2216 PYRETHRUM	S	-	-	5 MILD IRRITATION- LUNGS	0-UP TO 3XPEL S-ABOVE 3XPEL
3 2220 PYRIDINE	L	5	5	15 CUMULATIVE LIVER, KIDNEY & BONE MARROW DAMAGE	S
3 2222 OXIMONE	S	0.1	0.1	0.4 CUMULATIVE EYE (CORNEAL) DAMAGE	S
6 2224 ROX-SKIN(CYCLOTRIMETHYLENE TRINITRANINE)	S	-	-	1.5 ACUTE CNS EFFECTS (HAUSEA, CONVULSIONS)	S
14 --- RESORCINOL	S	NONE	P 10	45 MODERATE IRRITATION- EYE, NOSE, THROAT, SKIN	0-UP TO 3XPEL S-ABOVE 3XPEL
8 2225 RHODIUM, METAL FUME & DUSTS (AS RH)	S	-	-	0.1 RESPIRATORY SENSITIZATION (ASTHMA)	S
8 2225 RHODIUM, SOLUBLE SALTS	S	0.	0.	0.001 RESPIRATORY SENSITIZATION (ASTHMA)	S
5 2226 RONNFL	S	-	-	10 CHOLINESTERASE INHIBITION	0-UP TO 3XPEL S-ABOVE 3XPEL
13 --- ROSIN CORE SOLDER PYROLYSIS PRODUCTS(S)	VAR	NONE	A -	0.1 MARKED IRRITATION- EYE, NOSE, THROAT	S
2 P2228 ROTENONE	S	-	-	5 CUMULATIVE SYSTEMIC TOXICITY/SUSPECT CARCINOGEN	S

OSHA/ACGIH SUBSTANCE TOXICITY REPORT
 *** FILE SORTED BY SUBSTANCE ***

FIELD NO CODE SUBSTANCE	PHY ST	OSHA PEL PPM	ACGIH PEL PPM	HEALTH HAZARD CATEGORY	HEALTH HAZARD CLASSIFICATION
17 2229 ROUGE	S	NONE	A -	10 "INERT" PARTICULATE (ACCUMULATION IN LUNGS)	0
3 ----- RUBBER SOLVENT	L	NONE	P 4	- CUMULATIVE CENTRAL & PERIPHERAL NERVOUS SYSTEM DAMAGE	S
3 2230 SELENIUM COMPOUNDS (AS SE)	S	-	0.2	0.2 MODERATE IRRITATION - EYE, NOSE, THROAT/ CUMULATIVE LUNG, LIVER-KIDNEY DAMAGE	S
10 2231 SELENIUM HEXAFLUORIDE, AS SE	G	0.05	0.05	0.4 ACUTE LUNG DAMAGE (EDEMA)	S
9 9050 SILICA (AMORPHOUS)	S	20 MPPCF	20 MPPCF	GOOD HOUSEKEEPING PRACTICE/POSSIBLE SILICOSIS	S
9 9013 SILICA (FUSED)	S	USE QUARTZ FORMULA	USE QUARTZ FORMULA	PNEUMOCONIOSIS (SILICOSIS)	S
9 9010 SILICA (QUARTZ) RESPIRABLE	S	100MG/M3 / 55102+2	100MG/M3 / 55102+2	PNEUMOCONIOSIS (SILICOSIS)	S
17 ----- SILICON	S	NONE	A -	10 "INERT" PARTICULATE (ACCUMULATION IN LUNGS)	0
17 2236 SILICON CARBIDE	S	NONE	A -	10 "INERT" PARTICULATE (ACCUMULATION IN LUNGS)	0
4 ----- SILICON TETRAHYDRIDE (SILANE)	G	NONE	A 0.5	0.7 ACUTE SYSTEMIC TOXICITY BY ANALOGY WITH OTHER METAL HYDRIDES	S- UNTIL NEW EVIDENCE IS OBTAINED
3 2240 SILVER, METAL & SOLUBLE COMPOUNDS, AS AG S	S	-	0.01	0.01 CUMULATIVE SKIN PIGMENTATION AND KIDNEY DAMAGE	S

OSHA/ACGIH SUBSTANCE TOXICITY REPORT
*** FILE SORTED BY SUBSTANCE ***

FIELD NO CODE SUBSTANCE	PHY ST	OSHA PEL PPM	ACGIH PEL PPM	HEALTH HAZARD CATEGORY	HEALTH HAZARD CLASSIFICATION
9 9085 SOAPSTONE	S	-	20 MPPCF	PNEUMOCONIOSIS (ACCUMULATION IN LUNGS)	S- IF CONTAINS TRENOLITE
3 ----- SODIUM AZIDE	S	NONE	C 0.1	0.3 CUMULATIVE CNS AND BLOOD PRESSURE DAMAGE	S
4 2250 SODIUM FLUOROACETATE (1080) - SKIN	S	-	0.05	ACUTE SYSTEMIC TOXICITY (METABOLIC PATHWAY INHIBITION)	S
13 2260 SODIUM HYDROXIDE	S	-	2 A C -	2 MARKED IRRITATION - EYE, NOSE, THROAT, LUNGS, SKIN	S- ABOVE CEILING LIMIT
17 2263 STARCH	S	NONE	A -	10 "INERT" PARTICULATE (ACCUMULATION IN LUNGS)	0
4 2267 STIBINE	0	0.1	0.5	0.5 ACUTE SYSTEMIC TOXICITY (RBC HEMOLYSIS)	S
7 2270 STODDARD SOLVENT	L	500	P 100	575 NARCOSIS/CUMULATIVE SYSTEMIC EFFECTS	S- AT CURRENT OSHA PEL
4 2275 STRYCHNINE	S	-	0.15	0.15 ACUTE AND CHRONIC SYSTEMIC TOXICITY (CNS, PARALYSIS)	S
7 2280 STYRENE, MONOMER	L	100	100	420 MODERATE IRRITA- TION - EYE, NOSE, THROAT/NARCOSIS	S
8 9220 SUBTILISINS (PROTEOLYTIC ENZYMES)	S	NONE	AC -	0.00006 RESPIRATORY ALLERGY (ASTHMA & LUNG DAMAGE)	S- ABOVE CEILING LIMIT
17 ----- SUCROSE	S	NONE	A -	10 "INERT" PARTICULATE (ACCUMULATION IN LUNGS)	0
13 2290 SULFUR DIOXIDE	G	5	5	13 MARKED IRRITATION - EYE, NOSE, THROAT, LUNGS	S

OSHA/ACGIH SUBSTANCE TOXICITY REPORT
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FIELD NO	CODF	SUBSTANCE	PHY ST	OSHA PEL PPM	ACGIH PEL PPM	HEALTH HAZARD CATEGORY	HEALTH HAZARD CLASSIFICATION
19	2300	SULFUR HEXAFLUORIDE	0	1000	6000	GOOD HOUSEKEEPING PRACTICE	0
13	2320	SULFUR MONOCHLORIDE	L	1	6	A MARKED IRRITATION - EYE, NOSE, THROAT, LUNG	S
10	2321	SULFUR PENTAFLUORIDE	0	0.025	0.25	0.25 MARKED IRRITATION - LUNGS (EDEMA AND DAMAGE)	S
4	---	SULFUR TETRAFLUORIDE	0	NONE	NONE	0.4 MARKED IRRITATION - LUNGS (EDEMA)/ACUTE TOXICITY	S
13	2310	SULFURIC ACID	L	-	1	1 MARKED IRRITATION - EYE, NOSE, THROAT, SKIN	S
3	2323	SULFURYL FLUORIDE	0	5	20	20 CUMULATIVE LIVER & KIDNEY DAMAGE	S
4	2324	2,4,5-T	S	-	10	10 ACUTE SYSTEMIC TOXICITY	S
9	9030	TALC (NON-ASBESTIFORM)	S	-	20 MPPCF	20 MPPCF PNEUMONITIS (TALCOSIS)	0
15	2325	TANTALUM	S	-	5	5 MILD IRRITATION - EYE, NOSE, THROAT, LUNGS	0
5	P2327	TEBP - SKIN	S	-	0.2	0.2 CHOLINESTERASE INHIBITION	S
4	2329	TEFLON DECOMPOSITION PRODUCTS	VAR	NONE	NONE	B1 ACUTE SYSTEMIC TOXICITY (POLYMER FUME FEVER)	S
3	2330	TELLURIUM	S	-	0.1	0.1 CUMULATIVE LIVER DAMAGE/GARLIC BREATH	S
4	2332	TELLURIUM HEXAFLUORIDE, AS TE	0	0.02	0.2	0.2 ACUTE SYSTEMIC TOXICITY (HIGH)	S

OSHA/ACGIH SUBSTANCE TOXICITY REPORT
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FIELD NO CODE	SUBSTANCE	PHY ST	OSHA PEL PPM	MG/M3	ACGIH PEL PPM	MG/M3	HEALTH HAZARD CATEGORY	HEALTH HAZARD CLASSIFICATION
5	P2334 TEPP - SKIN	L	-	0.05	-	0.05	CHOLINESTERASE INHIBITION	S
13	2335 TERPHENYLS	S	C 1	9	C 1	9	MARKED IRRITA- TION - EYE, NOSE, THROAT, LUNGS	S- ABOVE CEILING LIMIT
3	2370 TETRA METHYL LEAD (AS PH) - SKIN	L	-	0.07	A -	0.15	CUMULATIVE LIVER, CNS, KIDNEY DAMAGE	S
4	2380 TETRA METHYL SUCCINONITRILE - SKIN	S	0.5	3	0.5	3	ACUTE SYSTEMIC TOXICITY (CNS)	S
3	2339 1,1,2,2-TETRACHLORO-1,2-DIFLUOROETHANE	L	500	4170	500	4170	CUMULATIVE LIVER DAMAGE & LEUKOPENIA	S
3	2337 1,1,1,2-TETRACHLORO-2,2-DIFLUOROETHANE	L	500	4170	500	4170	CUMULATIVE LIVER DAMAGE LEUKOPENIA	S
3	2340 1,1,2,2-TETRACHLOROETHANE-SKIN	L	5	35	5	35	CUMULATIVE LIVER DAMAGE	S
3	2350 TETRACHLORONAPHTHALENE-SKIN	S	-	2	-	2	CUMULATIVE LIVER DAMAGE & CHLORACNE	S -
3	2360 TETRAETHYL LEAD (AS PB) - SKIN	L	-	0.075	A -	0.1	CUMULATIVE LIVER CNS/KIDNEY DAMAGE	S
7	2390 TETRANORFURAN	L	200	590	200	590	MARKED IRRITATION - EYE, NOSE, THROAT/ NARCOSIS	S
3	2395 TETRANITROMETHANE	L	1	8	1	8	MARKED IRRITATION - EYE, NOSE, THROAT/ CUMULATIVE LUNG, HEART, & CNS DAMAGE	S
3	2410 TETHYL-SKIN	S	-	1.5	-	1.5	CUMULATIVE SYSTEMIC TOXICITY (LIVER)/ CONTACT DERMATITIS	S
3	2420 THALLIUM (SOLUBLE COMPOSD) - SKIN	S	-	0.1	-	0.1	CUMULATIVE CNS AND ENDOCRINE DAMAGE	S

OSHA/ACGIH SUBSTANCE TOXICITY REPORT
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FILED NO CODE SUBSTANCE	PHY ST	OSHA PEL PPH	ACGIH PEL PPH	HEALTH HAZARD CATEGORY	HEALTH HAZARD CLASSIFICATION
17 4,4'-THIONIS (6 TERT BUTYL-H-CRESOL)	S	NONE	NONE	10 "INERT" PARTICULATE (ACCUMULATION IN LUNGS)	0
4 2427 INIRAM	S	-	5	5 ACUTE SYSTEMIC TOXICITY ("ANTABUSE" -LIKE EFFECTS) (LOW)	0
9 2430 TIN (INORGANICS, EXCEPT SNH4 & SNH2)	S	-	2	2 PNEUMOCONIOSIS (STANNOSIS) & LUNG DAMAGE	5
3 2431 TIN (ORGANICS)-SKIN AS SN	VAR	-	0.1	0.1 CUMULATIVE SYSTEMIC TOXICITY	5
17 2432 TIN OXIDE	S	NONE	NONE	10 "INERT" PARTICULATE (ACCUMULATION IN LUNGS)	0
17 2440 TITANIUM DIOXIDE	S	-	15	10 "INERT" PARTICULATE ACCUMULATION IN LUNGS)	0
7 2460 TOLUENE - SKIN	L	200	750	375 MODERATE IRRITA- TION - EYE, NOSE, THROAT/NAPOCOSIS	5- AT CURRENT OSHA PEL
8 2470 TOLUENE-2,4-DIISOCYANATE (TOI)	L	C 0.02	0.14	0.14 MARKED IRRITATION - EYE, NOSE, THROAT, LUNGS/ASTHMA	5- ABOVE CEILING LIMIT
2 2 75 0-TOLUIDINE-S 'N	L	5	22	22 METHEMOGLOBINEMIA/ SUSPECT CARCINOGEN	5
14 77 TRIBUTYL PHOSPHATE	L	-	5	5 MODERATE IRRITATION - EYE, NOSE, THROAT, LUNGS	0-UP TO 3XPEL 5-ABOVE 3XPEL
19 2485 1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	L	1000	7600	7600 GOOD HOUSEKEEPING PRACTICE	0
3 1,2,4-TRICHLOROBENZENE	L	NONE	NONE	40 CUMULATIVE LIVER DAMAGE	0- UP TO 3XPEL 5- ABOVE 3XPEL

OSHA/ACGIH SUBSTANCE TOXICITY REPORT
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FIELD NO CODE SUBSTANCE	PHY ST	OSHA PEL PPM	OSHA PEL MG/M3	ACGIH PEL PPM	ACGIH PEL MG/M3	HEALTH HAZARD CATEGORY	HEALTH HAZARD CLASSIFICATION
3 2495 1,1,2-TRICHLOROETHANE-SKIN	L	10	45	10	45	NARCOSIS/CUMULATIVE LIVER DAMAGE	S
2 2490 TRICHLOROETHYLENE	L	100	535	100	535	NARCOSIS & ACUTE CARDIAC FAILURE/ SUSPECT CARCINOGEN	S
3 2483 TRICHLORONAPHTHALENE-SKIN	S	-	5	-	5	CUMULATIVE LIVER DAMAGE	S
3 2510 1,2,3-TRICHLOROPROPANE	L	50	300	50	300	MODERATE IRRITATION CUMULATIVE LIVER DAMAGE	S
19 ----- TRICYCLOHEXYLIN HYDROXIDE (PLICTRAN)	S	NONE	NONE	A -	5	GOOD HOUSEKEEPING PRACTICE	0
13 2480 TRIETHYLAMINE	L	25	100	25	100	MARKED IRRITATION - LUNGS, SKIN	S
19 2500 TRIFLUOROMONOBROMOMETHANE	0	1000	6100	1000	6100	GOOD HOUSEKEEPING PRACTICE	0
13 ----- TRIMETHYLBENZENE	L	NONE	NONE	A 25	120	MARKED IRRITATION - LUNGS, SKIN	S
3 2530 TRINITROTOLUENE-SKIN	S	-	1.5	-	1.5	METHEMOGLOBINEMIA/ CUMULATIVE EYE (CATARACTS) & LIVER DAMAGE	S
3 2532 TRIORTHOCRESYL PHOSPHATE	L	-	0.1	-	0.1	CUMULATIVE NEUROMUSCULAR DAMAGE (PARALYSIS)	S
5 2535 TRIPHENYL PHOSPHATE	S	-	3	-	3	CHOLINESTERASE INHIBITION	0- UP TO 1.5XPEL 5- ABOVE 1.5XPEL
19 ----- TRIPHENYLAMINE	S	NONE	NONE	P -	5	GOOD HOUSEKEEPING PRACTICE	0
9 2537 TUNGSTEN & COMPOUNDS, AS W (INSOLUBLE)	S	NONE	NONE	A -	5	PNEUMOCONIOSIS (LUNG ACCUMULATION)	0

OSHA/ACGIH SUBSTANCE TOXICITY REPORT
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FILED NO CODE SUBSTANCE	PHY ST	OSHA PFL PPM	OSHA PFL MG/H3	ACGIH PEL PPM	HEALTH HAZARD CATEGORY	HEALTH HAZARD CLASSIFICATION
6 2537 TUNGSTEN & COMPOUNDS, AS W (SOLUBLE)	S	NONE	NONE	A -	1 ACUTE SYSTEMIC TOXICITY (CNS, ANAEMIA)	S
3 2540 TURPENTINE	L	100	560	100	560 MODERATE IRRITATION - EYE, NOSE, THROAT/CUMULATIVE KIDNEY DAMAGE	S
3 2560 URANIUM (NATURAL) INSOLUBLE	S	-	0.25	A -	0.2 CUMULATIVE BLOOD AND KIDNEY DAMAGE	S
3 2560 URANIUM (NATURAL) SOLUBLE	S	-	0.05	-	0.05 CUMULATIVE BLOOD AND KIDNEY DAMAGE	S
13 2570 VANADIUM (V2O5) AS DUST	S	C -	0.5	C -	0.05 MARKED IRRITATION - EYE, NOSE, THROAT, LUNGS	S- ABOVE CEILING LIMIT
13 2570 VANADIUM (V2O5) AS FUME	S	C -	0.1	A C -	0.05 MARKED IRRITATION - EYE, NOSE, THROAT, LUNGS	S- AT CURRENT OSHA CEILING LIMIT
15 ----- VINYL ACETATE	L	NONE	NONE	A 10	30 MILD IRRITATION - EYE, NOSE, THROAT	0- UP TO 2XPEL 5- ABOVE 2XPEL
3 ----- VINYL BROMIDE	G	NONE	NONE	A 250	1100 CUMULATIVE BROMIDE INTOXICATION	S
1 2580 VINYL CHLORIDE	G	STD 1910.1017	A	10	10 CANCER (LIVER)	S
2 ----- VINYL CYCLOHEXENE DIOXIDE	L	NONE	NONE	P 10	60 MARKED IRRITATION - SKIN/SUSPECT CARCINOGEN	S
14 2582 VINYL TOLUENE	L	100	480	100	480 MODERATE IRRITATION - EYE, NOSE, THROAT	0- UP TO 3XPEL 5- ABOVE 3XPEL
3 ----- VINYLIDENE CHLORIDE	L	NONE	NONE	A 10	40 CUMULATIVE LIVER & KIDNEY DAMAGE	S
7 ----- VM & P NAPHTHA	L	NONE	NONE	P 200	400 NARCOTIC/CUMULATIVE SYSTEMIC TOXIC EFFECTS	S

OSHA/ACGIH SUBSTANCE TOXICITY REPORT
*** FILE SORTED BY SUBSTANCE ***

FIELD NO CODE SUBSTANCE	PHY ST	OSHA PEL PPM	ACGIH PEL PPM	HEALTH HAZARD CATEGORY	HEALTH HAZARD CLASSIFICATION
3 P2506 WARFARIN	S	-	0.1	0.1 CUMULATIVE ANTI- COAGULANT EFFECT	S
4 ----- WELDING FUMES (TOTAL PARTICULATE)	FUM	NONE	P -	5.84 MODERATE IRRITA- TION/ACUTE TOXICITY FROM METAL OXIDES	S
2 9210 WOOD DUST (NONALLERGENIC)	S	NONE	A -	5 LUNG DAMAGE/ SUSPECT CARCINOGEN	S
7 2590 XYLENE (O-,M-,P-ISOMERS)-SKIN	L	100	100	435 MODERATE IRRITA- TION-EYE, NOSE, THROAT/NARCOSIS	0-UP TO 2XPEL 5- ABOVE 2XPEL
14 ----- M-XYLENE, ALPHA, ALPHA, DIAMINE	L	NONE	P -	0.1 MODERATE IRRITA- TION-EYE, NOSE, THROAT SKIN (CONTACT ALLERGY)	S
4 2600 XYLIDINE-SKIN	L	S	25	25 METHEMOGLOBINEMIA/ ACUTE SYSTEMIC TOXICITY	S
9 2602 YTTRIUM	S	-	1	1 PNEUMOCONIOSIS (DIFFUSE FIBROSIS)	S
13 2611 ZINC CHLORIDE FUME	S	-	1	1 MARKED IRRITATION- EYE, NOSE, THROAT, LUNGS	S
2 ----- ZINC CHROMATE, AS CRO3	S	NONE	P -	0.1 SEE CHROMATES/ SUSPECT CARCINOGEN	S
4 2610 ZINC OXIDE FUME	S	-	5	5 ACUTE SYSTEMIC TOXICITY (METAL FUME FEVER)	0
17 ----- ZINC STEARATE	S	NONE	A -	10 "INERT" PARTICULATE (ACCUMULATION IN LUNGS)	0
9 2620 ZIRCONIUM COMPODS (AS 2R)	S	-	5	5 PNEUMOCONIOSIS (LOW TOXICITY)	0

INDUSTRIAL HYGIENE MANUAL

CHAPTER X VENTILATION

I. Ventilation measurements shall be taken during the industrial hygiene inspection when air quality is being determined. The purpose of the ventilation measurements are as follows:

- Ventilation data can be correlated with air quality measurements when analyzing the air quality results for their reasonableness.
- Knowledge of ventilation increases the reliability of compliance action based on air quality measurements. For example, if measurements indicate that the air quality standards are slightly exceeded, poor ventilation practices increase the certainty that a potential health hazard exists and citations are required.
- Evaluation of existing ventilation systems will assist in determination of feasible engineering controls.
- Citations shall not be issued against improper ventilation unless both of the following conditions exist: (1) the air quality standards are violated (2) specific ventilation requirements exist to require engineering controls, such as for open tanks and spray paint booths. In no case shall citations be issued to require specific volumes of air for ventilating operations.

II. Type of ventilation measurements to be taken. A thorough ventilation survey is time consuming and is not necessary during an OSHA health inspection. The following ventilation data is necessary:

- Types of ventilation systems employed—natural, general forced air, dilution, local exhaust, and combinations.

- Volume of general ventilation, location of air inlet(s).
- General flow of air through plant.
- Locations and type of local exhaust ventilation, face velocities, capture velocities, the appropriateness of the type for the job.
- Operations that are normally ventilated in the industry but are not ventilated in the one being inspected.
- Employer's maintenance on ventilation system, what the employer does and is it enough (example—check pressure drops, clean out elbows periodically, check fan blades).
- Variables that effect ventilation—doors, windows, openings in building, and processes involving high temperature.
- General comments on effectiveness of system.
- Approximate sizes of local exhaust.
- Type and size of fans and collector.
- Make up air, how it is obtained and recirculation volumes.

It will not be necessary to perform detailed velocity traverses in ducts, determine rpm of fan, drill holes in ducts for measurements, measure sizes of ducts and other detailed ventilation work.

Sketches and/or photographs must be used to document ventilation and processes where air quality is poor.

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